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Quality declared seed system

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Preface

FAO recognizes the pivotal role of seeds in agricultural development. Increasing the quality of seeds can increase the yield potential of the crop and is one of the most economical and efficient inputs to improve crop production and productivity. The FAO/ Swedish International Development Cooperation Agency (SIDA) Technical Conference on Improved Seed Production (Kenya, 1981) and at the Expert Consultation on Interstate Movement of Seeds (Rome, 1986) identified the concept of Quality Declared Seed as a strategy to increase the availability of quality seed for the agricultural community. After further discussions and studies of this concept, FAO Seed and Plant Genetic Resources Service, in consultation with relevant experts, in 1993 produced and published specific crop guidelines as Plant Production and Protection Paper No. 117 *Quality declared seed – Technical guidelines on standards and procedures.*

Over the past decade the principle of *Quality declared seed* has been widely used as a source of practical information on seed standards for a wide range of crop species and agroecologies for the development of the agricultural sector. It also been used to establish seed quality standards for seed relief interventions following natural disasters or calamities. The system was conceived to make the best possible use of the resources available for seed quality control under limited-resources conditions and gave major responsibilities and participation to seed producers and dealers. However, changing circumstances and needs in the seed sector have prompted a critical review of both, the purpose and the content of the publication and with this objective FAO convened an Expert Consultation in Rome in May 2003 to review, update and improve the document. While following the same general format some changes were introduced to the revised version including:

- A more explicit recognition of the role of national policies and the impact of some recent national and international obligations on seed provision
- A clearer explanation on how QDS can accommodate local varieties
- More crop species, the list of which now includes 92 species (21 of them comprising open pollinated varieties and hybrids as well as one synthetic variety)
- Standardized procedures to facilitate the operation of the scheme and thereby enhance the schemes' implementation.

As a result of these studies and deliberations this revised version of *Quality declared seed* has been prepared and will also be available on the FAO Web site.

Acknowledgements

The Second Meeting on Quality Declared Seed Systems was convened to update the existing Guidelines in order to make them more appropriate to the agricultural progress in developing countries, to broaden the technical aspects and to enlarge the number of crops listed in the document.

The discussions benefited from the participation of highly qualified seed experts from all regions of the world who presented background papers and actively contributed to the discussions.

The organization of the meeting was under the technical responsibility of Michael Larinde (AGPS) and Cadmo Rosell (FAO Consultant) with the administrative assistance of Liliana Lazzerini. The draft report was prepared by Ray T. George and Michael Turner with the assistance of Juan Fajardo.

On behalf of the FAO Seed and Plant Genetic Resources Service (AGPS), we would like to express our recognition to all of them.

List of acronyms

AOSA	American Official Seed Analysts
GMO	Genetically Modified Organisms
GPA	Global Plan of Action
GRIN	Germoplasm Resources Information Network
ISTA	International Seed Testing Association
NGO	Non-governmental Organization
OECD	Organization for Economic Cooperation and Development
PGRFA	Plant Genetic Resources for Food and Agriculture
QDS	Quality declared seeds
SIDP	Seed Improvement and Development Programme
TRIPS	Trade-Related aspects of International Property Rights
UPOV	Union for Protection of New Varieties of Plants

Introduction

The Expert Consultation Meeting on the Revision of the Quality Declared Seeds was held at FAO, Rome, from 5 to 7 May 2003. The Meeting was opened by Mr Mahmoud Solh, Division Director of the Plant Production and Protection Division (AGP). Mr Solh welcomed the participants on behalf of the Director-General of FAO and also on behalf of the Division. He thanked the participants for their time and effort in coming to Rome and recalled that the objective was to review the Quality Declared Seed, FAO Plant Production and Protection Paper 117, which was first published in 1993. He wished the Expert Consultation every success in their discussions.

Mr Arturo Martínez, Chief, Seed Plant Genetic Resources Service (AGPS), thanked the consultants for their advanced preparations for to the meeting and anticipated that the Meeting would be able to produce a revised and updated edition of Quality Declared Seed to meet the new and expanded needs of the FAO member countries.

The agenda (Annex 1) as proposed was adopted.

Mr Martinez was invited to take the Chair. It was agreed that Mr Michael Larinde be Vice-Chairperson and Mr Michael Turner be Rapporteur.

A list of participants is given in Annex 2.

The meeting was reminded of the existing document on Quality Declared Seed – Technical Guidelines for Standards and Procedures which was first published by FAO in 1993 as Plant Production Paper 117. All participants received a copy of this document together with other relevant papers in advance of their coming to Rome.

Mr Cadmo Rosell outlined to the meeting the background of the Quality Declared Seed (QDS) concept. An Expert Consultation on Interstate Movement of Seeds enunciated the concept in 1986. A draft document was prepared at the Expert Consultation on Quality Declared Seed held in Rome, in October 1989. After further work by AGPS and its consultants, the specific crop guidelines were finalized. The first edition of Quality Declared Seed, Technical Guidelines for Standards and Procedures was published as FAO Plant Production and Protection Paper 117.

Mr Larinde gave a concise summary of the issues, which AGPS would like to consider during the review of the 1993 edition of the Quality Declared Seed document. These were as follows:

a. The need for a selective review of seed standards of some of the crops.
b. Filling missing data gaps with respect to moisture content and threshold for important seed-borne diseases.
c. Broadening the scope of the crop coverage of QDS to include more tropical crops for which there are no seed quality control guidelines.
d. The need to suggest ways that the QDS system could be used for quality control of varieties developed under participatory varietal breeding.
e. Improvement of QDS to take into account compliance with UPOV and TRIPS agreements.
f) Possible inclusion of information on GMO testing in QDS.
g) The determination of critical seed quality attributes to be used as the bottom line for local seed trade if all the minimum standards of the present set of attributes could not be met.

The general consensus, prior to the presentation of each consultant, was that the improvement of and widespread use QDS could be facilitated through its adoption by governments and organizations for use ensuring where there was a lack of quality seeds available for farmers.

The consultants presented their papers, which has been prepared according to the guideline provided, in their Terms of Reference. (Annex 3).

The main points arising from the presentations of the Experts were as follows:

a. More efforts should be made by FAO to create more international awareness on the QDS system, including placing the revised edition of QDS on FAO's web site.
b. It should be made more widely known that QDS puts the responsibility for seed quality offered for sale on the seed trader with the national government playing a less demanding role as would have been the case in a fully developed Seed Quality Control Scheme. To this end, it was emphasized that QDS can form a starting point for a full Seed Quality Control Scheme.
c. The need to increase the number of crops included in the scheme in the revised document. In order to strengthen this proposal, FAO staff pointed out that the information in QDS are frequently used as seed standard references when evaluating seed supplies for emergency relief.
d. A version of QDS for vegetatively propagated crops should be developed as soon as possible.
e. QDS should make provision for the inclusion of 'Local Varieties', selections of indigenous crops (especially vegetables) and lines produced by participatory plant breeding.
f. The revised edition of QDS should be widely circulated by all means possible.

The consultants referred to the possible developments arising from the increased use of GMOs. It was acknowledged that the International Seed Testing Association (ISTA) was already studying methods for detection of GMO seed material during seed testing. While it was generally thought that seed production of GMOs would remain in the hands of large companies and organizations, the Chairman reminded that some governments had already released GMO material for multiplication by farmers.

The Chairman indicated that FAO planned to discuss GMOs at another forum.

Different aspects of seed quality attributes were discussed and the salient points were gathered to be carried forward for inclusion in the final draft document to be recorded during the session devoted to preparation of a draft revision of QDS Document.

The collective points proposed by the Experts in their individual reports were discussed in addition to those arising during the meeting. These were incorporated into the draft document wherever appropriate.

During the final discussions, the Expert Consultation approved the following four proposals stressing that:

a. FAO should take adequate action to promote the implementation of the QDS system at global level.
b. FAO should finalize the proposed Revised Edition of QDS at the earliest time possible.
c. FAO should make the QDS Document as widely available as possible, including its posting on Internet.
d. FAO should organize a further Expert Consultation to consider a quality assurance scheme for vegetatively reproduced (asexual) crops.

The final session informed the Chairman that the Expert Consultation had finalized the draft document and had incorporated all the salient points agreed during the course of the meeting into the document.

The meeting outlined the four agreed proposals to the Chairman.

The meeting then adopted the revised QDS Report.

At the Closing Ceremony the Chairman and Vice-Chairman thanked the participants for their contributions during the course of the meeting and looked forward to the completion of the revised edition of Quality Declared Seed.

On behalf of all the visiting consultants, Mr George thanked Mr Martínez and all the staff in AGPS for their kind hospitality and their help during the course of the meeting.

Quality declared seed

ORIGINS OF QUALITY DECLARED SEED

In many countries where there were no developed seed industries, national seed projects and programmes were established during the 1970s and 1980s with the support of external funding from bilateral and multilateral donor agencies. This was a response to the need for more secure seed supply systems, which could deliver good quality seed of improved and new varieties to farmers. Seed was regarded as a strategic input to crop production and that is still true today. However, the expectations of seed industry development at that time were optimistic. It was believed that the formal seed sector would steadily replace traditional methods of seed provision once farmers realized the benefits of improved seed.

Rigorous seed quality control was seen as a key tool to achieve that goal, reflecting the evolution of regulatory systems in countries with a more industrialized agriculture. The strong influence of governmental organizations at that time also favoured the adoption of rather centralized systems of seed quality control. Consequently, quality control was often made compulsory for seed produced within the formal sector, while the proportion of seed actually supplied through those formal channels remained low.

The reasons for these unfulfilled expectations are complex, and they have been critically analyzed in recent years, particularly through the review of the activities of FAO Seed Improvement Development Program (SIDP) and through a series of Regional Seed Policy and Programmes Meetings conducted in Sub-Saharan Africa, Near East and North Africa, Asian and the Pacific, Latin America and the Caribbean regions and the Central and Eastern European Countries, Commonwealth of Independent States and other Countries in Transition.

As a result, there is now a clearer understanding of the problems of developing a sustainable seed system and recognition of the key part played by national policies, regulatory frameworks and market economies. In addition, many other elements of the wider agropolitical environment have also changed in the past decade, for example increasing concerns about the use of genetic resources and the conservation of agrobiodiversity, the pressures towards trade liberalization, the protection of intellectual property and the increasing role of the private sector in developing countries. All of these have implications for seed supply and as a result, seed issues have come increasingly into the political arena. However, at a practical level, there is still much to be done to improve the supply of quality seed, improved and new varieties to farmers in many developing countries.

BASIC PRINCIPLES OF THE QUALITY DECLARED SEED SCHEME

It is not intended that QDS should compete with existing schemes of seed quality control, or that the work of other specialized organizations should be duplicated. However, as in the original document, it is still recognized that the requirements of full seed quality control makes demands that can be a burden on the government agencies which have to implement it. With constraints in government budgets, the resources to run a full fledged seed quality control scheme may simply not exist. One solution to this problem might be to charge for all services so that the costs are covered, as has been done in many industrialized countries in recent years. However,

the additional seed costs and the administrative burdens of collecting the fees may prove counterproductive.

It must also be recognized that there are serious risks if a quality control scheme is not run properly. The essence of this scheme is that the label on the seed package represents quality of the contents and all the activities that contributed to that. If the reputation of the label is lost through poor supervision, the *raison d'être* is undermined. At worst, the label may have a negative impact.

Against this background, the purpose of QDS is to offer an alternative, which can be used for those crops, areas and farming systems in which highly developed seed quality control activities are difficult to implement or make relatively little impact. In particular, it may more easily accommodate varieties of crops, which, for different reasons, do not easily fit within a conventional seed quality control scheme. Being implemented primarily by seed producers, it also facilitates local seed production initiatives, which have advantages for many of the staple grain crops. These crops often present problems for seed supply because the premium, which can be charged for seed over the grain price, is limited by the option of farm-saved seed.

One major challenge in designing a QDS scheme is to provide flexibility in implementation while retaining the basic principles of quality assurance, which can achieve the confidence of stakeholders and play a part in developing the seed sector. It would be counterproductive to elaborate QDS to the point where it would have the same problems as existing quality control schemes. Therefore, despite the advance of technologies in seed and variety testing, QDS is still a practical system, which is relatively easy to apply.

To summarize, QDS is an attempt to reconcile the continuing need to improve seed supply to farmers with the desire to reflect and accommodate the diversity of farming systems, particularly in the more difficult areas where highly organized seed systems do not function well. QDS is a relatively open scheme, which meets the needs of farmers in a flexible way but without compromising basic standards of seed quality. It may therefore contribute to the wider policy objective of diversifying the seed supply system so that farmers may have more choice.

USES OF QUALITY DECLARED SEED

Over recent years, QDS has been of particular value for seed purchased for relief purposes in emergencies. It serves as a reference scheme for such seed supplies because national seed organizations are often unable to provide comprehensive documentation for rapid international movement. However, this is only one example of the limitation of existing formal seed systems to cope with special situations. There are other potential suppliers, which would have an interest to enter the seed market but, because of limited resources, would find the requirements of full quality control difficult to satisfy. Examples include cooperatives, farmer groups, large private farms and NGOs for whom QDS could provide a cost effective entry point to quality assurance.

QDS is not proposed as a global scheme, which countries would formally recognize or adopt as a basis for trade. However, if the principles of the scheme are accepted by countries or regional groups, it may facilitate seed movement between countries if no other such scheme is available. Likewise, the standards set out here may provide a basis for regional seed schemes to develop their own standards according to their specific trading needs. The standards and procedures quoted in this document may also be used as a source of guidance for seed purchase agreements or production contracts.

To summarize, the approach embodied in QDS and the crop standards listed in this

document may be regarded as a resource, which can be used by interested parties in different ways to advance the overall goal of improving the supply of quality seed and new varieties.

The crops considered are listed alphabetically by scientific name. The species are listed under major crop production groups and within each group in alphabetic order. For the scientific nomenclature GRIN (USDA, ARS, National Genetic Resources Program, Germoplasm Resources Information Network) has been used as the taxonomic reference. In the specific case of *Beta vulgaris*, as an exception and in order to offer complementary information, Mansfeld's classification is followed (Mansfeld's Encyclopedia of Agricultural and Horticultural Crops, P. Hanelt & IPK (eds.) 2001, Springer).

CURRENT POLICY CONTEXT

In recent years, much more attention has been given to the need for clear national policies on seeds and varieties and related issues. This is a response to the changing structure of the seed industry. In the time of primary seed industry development, the government was the main player in the seed sector in most developing countries. Therefore, the government could control and manipulate the seed supply as an instrument of agricultural development, largely on its own terms. Subsidies were often provided to parastatal seed corporations, which had little prospect of commercial viability but were intended to provide seed of local staple food crops for other funded projects or for the national extension service.

With the diversification of the seed sector and the increasing role of private companies and other suppliers, it is necessary to ensure that there are clear principles guiding the development of the sector. A policy is intended as a statement of the government's intentions for the seed sector and related activities. Placing this statement in the public domain provides a basis for consistent decision making which will in turn promote a stable national seed industry to meet the diverse needs of farmers. The means by which seed quality is assured to purchasers is an essential element in such a policy statement.

One major policy issue in the seed industry both nationally and internationally is the handling of genetically modified organisms/varieties, commonly referred to as GMOs. In particular, the question of contamination of conventional varieties by GMO varieties is extremely sensitive, in view of the adverse public reaction to GMOs in some countries. However, the methods of detection of GM traits are unlikely to be available for general use by QDS producers. As regards the production of GM varieties no special standards are proposed here because such varieties are likely to remain proprietary for the foreseeable future and therefore not needed; however, it must also be recognized that GMO material has been released by a small number of government agencies for general use. Despite the great importance of this issue, no general standards or recommendations have been proposed within the QDS scheme. At the national level, seed crops grown as QDS would be subject to the same controls on GMOs, or isolation from them as would apply to any other crops grown for seed.

ROLE OF NATIONAL GOVERNMENTS

Governments or their seed agencies need to give formal recognition to QDS in order to endorse its position as an effective quality assurance scheme. This could probably be achieved by means of a revision of the existing regulations on seed quality control, rather than as a more fundamental change in the Seed Law.

The successful implementation of QDS will also require some input by a technical agency to provide support services such as variety lists, check inspections, seed testing and to provide training in these specialized skills. Governments may therefore need

to consider how best to arrange for these services to be available, and on what basis. However, it should be emphasized that with the QDS scheme the responsibility for seed quality is with those who are distributing the seed; but the scheme also provides some protection for farmers and growers against unscrupulous seed traders.

It is further recommended that national governments should see the provision of QDS as one element in a wider seed policy, which would address all the key issues affecting the seed sector. Specifically, the adoption of QDS would give practical effect to objectives 5 and 6 of the International Treaty on Plant Genetic Resources and a number of Activities of the Global Plan of Action (GPA) for conservation and sustainable utilization of PGRFA, which deal with relationships amongst plant genetic resources, seed and sustainable agriculture. For this reason, FAO believes that the adoption of QDS as a means to improve seed quality in a wider range of genetic material is a positive contribution to maintain genetic diversity and strengthen seed security.

RELATIONS TO EXISTING INTERNATIONAL ORGANIZATIONS AND THEIR ACTIVITIES

Several international organizations are involved in seed/variety issues and it is appropriate to mention how QDS may relate to their activities.

The Organization for Economic Cooperation and Development (OECD) offers a number of schemes, which enable the seed certification for a range of different crops intended for international movement. These schemes are implemented by national certification agencies that have been validated by OECD. The key element of OECD certification is that the crop is inspected in the field and found to conform to the required standards of variety, identity and purity. When the certification process is complete, OECD labels are fixed to the seed sacks. The OECD schemes are widely used for international seed trading but they are only available in countries, which have had their certification procedures validated by OECD. The OECD schemes do not specify seed quality standards. These would normally be covered by the contractual arrangements between the producer/seller and the buyer.

When the opportunity for OECD certification exists for international trade, it will normally be used. However, quality declared seed may fill the gap for seed movement between countries, which are not members of the OECD schemes, or where other OECD criteria cannot be met.

The International Seed Testing Association (ISTA) develops and publishes a set of Rules for testing seed of a wide range of species. These are intended as standard procedures to ensure the uniformity of seed testing results. ISTA does not specify any quality standards, which should be achieved; it only describes the procedures and optimum conditions for carrying out tests in order that the results are fully comparable between different laboratories.

In North America, the Association of Official Seed Analysts (AOSA) publishes similar procedures for seed testing. The use of ISTA or AOSA procedures is strongly recommended for testing seed produced under QDS.

The Union for the Protection of New Varieties of Plants (UPOV) seeks to safeguard the property rights of plant breeders in their varieties. Such rights are only available within a country, which has passed a law on plant variety protection. In practice, the use of QDS for quality assurance is unlikely to have major implications for variety protection unless varieties were being produced and moved between countries in order to escape the payment of royalties due to the breeder. If a Plant Variety Protection law exists in a country, it should be a condition of QDS that all crops of protected varieties

are produced with the agreement of the breeder, so that a royalty can be collected on the seed produced. That could form part of the declaration made by a QDS producer when a seed crop is registered.

Regional Seed Associations have been established in several parts of the world in recent years. Their purpose is to promote trade in seeds by facilitating commercial contacts and, to some extent, by harmonizing regulations between member countries if the governments are supportive. This could extend to offering a regional umbrella scheme for seed quality control, and QDS could provide a basis for such a scheme.

Description of the quality declared seed scheme

GENERAL

To improve the quality of seed being offered for sale in countries where human and physical resources for quality control are limited FAO has introduced the 'quality declared seed' system, which makes use of resources already available in seed production organizations. The system is designed to provide quality control during seed production, which is less demanding on government resources than other more developed seed quality seed systems, but is adequate to provide good quality seed both within countries and in international trade.

The system is based on four principal points:

1. A list of varieties eligible to be produced as Quality Declared Seed is established.
2. Seed producers are required to register with an appropriate national authority.
3. The national authority will check at least 10 percent of the seed crops.
4. The national authority will check at least, 10 percent of the seed offered for sale under the designation of Quality Declared Seed.

The following are the minimum standards, which must be achieved and procedures to be followed before a seed lot can be designated as Quality Declared Seed, which may be of any crop species for which eligible varieties are available and for which appropriate specific standards and procedures have been published. It shall be open for any national government to authorize the use of this designation when it is satisfied that these procedures have been followed and that the standards have been achieved.

DEFINITIONS

Varieties

The term 'variety' is synonymous with the term 'cultivar' as defined in the International Code of Nomenclature for Cultivated Plants, 1980, Article 10: 'The international term cultivar denotes an assemblage of cultivated plants which is clearly distinguishable by a group of characters (morphological, physiological, cytological, chemical or others) and which, when reproduced (sexually or asexually), retains its distinguishing characters'.

Type of varieties:

1. Varieties developed through conventional breeding methodologies.
2. Local varieties that have evolved over a period of time under the particular agro-ecological conditions of a defined area. A local variety is sometimes also called a 'land race' or an 'ecotype'.
3. Varieties developed through alternative plant breeding approaches such as participatory plant breeding.

Quality declared seed

Seed produced by a registered seed producer which conforms to the minimum standards for the crop species concerned and which has been subject to the quality control

measures outlined in the Guidelines. For seed of local varieties and varieties developed through participatory plant breeding the minimum standards may be different from varieties developed through conventional plant breeding approaches. The initial seed source shall be Maintainer's Seed or any class of certified seed. Some certified seed, for example of hybrids, may be excluded. Quality Declared Seed may reproduce Quality Declared Seed only from a seed lot that has been officially tested and approved. There may be certain cases where the national controlling authority will wish to impose a limitation on the number of generations for technical reasons.

Maintainer

A person or organization responsible for maintaining a variety eligible to be produced as Quality Declared Seed and for producing the initial and recurring seed of it for starting multiplication. This seed must conform to the standards for Quality Declared Seed and may be called 'Maintainer's Seed'. All Maintainers shall also be Seed Producers.

Seed producer

Any company, co-operative, individual or institution fulfilling the requirements outlined in these Guidelines.

Seed trader

Any company, cooperative, individual or institution, which offers seed for sale under the designation Quality Declared Seed. A Seed Producer may also be a Seed Trader.

Seed conditioning

Post-harvest operations of seed, which may include drying, cleaning or treatment with chemicals (when possible environmentally friendly).

Off-type

Plants or seeds, which do not conform to the characteristics of the variety.

National Variety Registration Committee

The national government would appoint a committee responsible for the maintenance of a register of eligible varieties.

ELIGIBILITY OF VARIETIES

A variety shall be eligible to produce Quality Declared Seed when at least one national government has included it in a list of eligible varieties following review of appropriate evidence by a national variety registration committee or equivalent institution approved by the government. A person or organization submitting a request for a variety to be eligible must submit the following information to the appropriate national authority:

1. The name of the variety.
2. For a bred variety: (a) a statement giving the origin of the variety and the breeding procedure used in its development; (b) a description of morphological and other characteristics of the seeds and plants, which distinguish the variety from all other varieties; (c) a statement defining the agroecological zone for which the variety is suited based on evidence from properly conducted trials from more than one growing season (to be eligible, a variety should normally show some advantage for cultivation and use); (d) a statement showing the procedures to be followed for maintaining the variety; (e) a statement of any special requirements essential

to safeguard genetic purity during multiplication (e.g. limitation of generations or extra isolation of seed crops).

3. For a local variety: (a) a statement giving the origin of the variety; (b) a simple morphological description and its value for cultivation and use with an indication of the agroecological zone for which the variety is suited; (c) a statement indicating the procedures to be followed for maintaining the variety.
4. For a variety developed through participatory plant breeding methods: (a) a statement giving the origin of the variety; (b) data obtained during the farmer evaluation process; (c) a description of the main characteristics, which distinguish the variety from other varieties; (d) a statement defining the agroecological zone, for which the variety is suited, a statement indicating the procedures to be followed for maintaining the variety.

The applicant shall be required to submit to the authority samples of a specified size to be used as authentic standard samples of the variety for any tests of varietal purity or authenticity, which may be required in relation to Quality Declared Seed.

The authority shall agree to the procedures for the maintenance of the variety following the proposals in previous paragraphs. Any special requirements, which may apply to the variety such as limitation of generations within Quality Declared Seed, shall be published in the list of eligible varieties.

REGISTER OF SEED PRODUCERS

The government shall designate an appropriate authority to approve seed producers and to maintain a register of them. To be eligible for registration, a seed producer must:

- Have access to seed which is of an eligible variety and suitable for further multiplication.
- Have suitable land for the proposed production programme, or be in a position to contract with suitable farmers to have the seed grown.
- Nominate person(s) suitably qualified in seed production technology to supervise and exercise quality control over the production and conditioning. The area of seed crop which each of such persons may supervise must be limited to enable the supervision to be effective. The authority may refuse to accept a nomination when there is evidence that a person is not suitably qualified.
- Have access to suitable seed conditioning equipment and storage facility to deal with the proposed production.
- Have access to a seed testing laboratory with trained staff capable of conducting the required tests.

PRODUCTION OF SEED

Maintainer's Seed shall be at least of the standard of Quality Declared Seed and shall be produced and distributed under the responsibility of the maintainer for each variety shown in the list of eligible varieties according to the agreed procedures and plan for its production. Seed standards (germination, physical purity, etc.) and some of the field standards (weed infestation, diseases) of seed produced from local varieties and participatory varieties are similar, but differ mainly concerning genetic purity.

Quality Declared Seed shall be produced by a registered seed producer who shall be responsible for the quality of the seed. Quality control measures shall include:

1. Ensuring that seed production fields have satisfactory previous cropping histories for the proposed seed crops and that the seed used to sow the fields is eligible to produce Quality Declared Seed.

2. Ensuring that the seed crop is well grown and arranging for remedial measures to be undertaken, such as rogueing of off-types, weeds and disease plants attacked by major seed borne diseases as may be necessary.
3. Inspecting the seed fields according to the procedures outlined in the appropriate crop standards and ensuring that only, those, which meet the standards, are approved.
4. Ensuring that the identity of the seed at harvest is maintained and that it is delivered for conditioning in identified containers.
5. Ensuring that seed conditioning is performed in such a way as to preserve the identity and varietal purity of the seed. In addition, to ensure that the seed is maintained at the **appropriate moisture content**, for individual species, whether in open storage, non-moisture proof or vapor proof containers. Individual countries, or in some cases, areas within countries will have their own standards and requirements for seed moisture content for each of the species produced. In general, for open storage the acceptable levels are: cereals 13 percent, legumes 10 percent and small seeded vegetables eight percent. However, care must be taken to maintain each specie's optimum moisture content in locations with fluctuating ambient temperatures and/or relative humidities. The levels for storage in moisture proof containers are generally 2-3 percent lower than those for open storage. (See Annex 3)
6. Securing appropriate samples of the lot and submitting them to test in a seed testing laboratory. Ensuring that only seed lots are included for which laboratory results show that the standards specified for the crop are met before permitting the seed to be designated as Quality Declared Seed. Where there are no national procedures for seed sampling and testing, the ISTA or AOSA provide suitable procedures for most crops.
7. Keeping records of all activities, inspections, test results and completing the Quality Declared Seed Declaration.

The registered seed producer shall be responsible for submitting to the appropriate authority information on the planned production, including details of the seed to be multiplied and the location of all seed fields and, during the season, reports of the inspections and test results and the outcome of the production.

Labelling

Quality Declared Seed shall be labelled when offered for sale. The label shall be affixed by a registered seed producer. Each label will show at least the following: the crop species; the name of the variety; the words quality declared seed; a reference number of the seed lot; the name of the seed producer; germination percentage, physical purity percentage, net weight, date of test, details of any chemical treatment and the name of the responsible authority. Labels shall be attached in such a manner that it is impossible for them to be reused once they have been removed. In some cases, it is possible for the information to be printed directly on the container. Containers should be fastened or sealed according to national requirements.

Supervision by government

The government shall designate the authority or authorities to control the use of the term Quality Declared Seed.

The authority (ies) shall have the following duties:

1. To review and decide upon applications for varieties to be eligible for the production of quality declared seed and to maintain an up-to-date list of those varieties accepted as eligible. Such a list shall include the name of each variety, the name and address of the maintainer and any special requirements.

2. To review and decide upon applications for registration as seed producers and to maintain an up-to-date register of those which are authorized, to review nominations of responsible persons.
3. To ensure that inspections are made on at least 10 percent of the seed fields for the production of Quality Declared Seed. The results of these check inspections will be reviewed in relation to the standards.
4. To obtain seed samples from at least 10 percent of Quality Declared Seed offered for sale and to submit these samples for tests. These tests shall include tests for germination and purity and may include such other tests as are considered appropriate (e.g. plot tests for varietal purity or laboratory tests for seed-borne diseases or moisture content). The results of all tests will be reviewed in relation to the standards.
5. To receive and store the authentic samples of eligible varieties.
6. To initiate appropriate action when there is evidence that seed which does not meet the appropriate standards has been designated as Quality Declared Seed.

PENALTIES

National governments shall provide that persons found to be using the term Quality Declared Seed wrongly shall be guilty of an offence and subject to an appropriate penalty. For example: a seed crop found at check inspection to be below standard should not be permitted to be harvested as seed; seed offered for sale when it is shown to be below standard should be withdrawn from the market; persistent or very flagrant breaches of the standards should be penalized by withdrawal of registration from the seed producer; or any other penalties provided in the national law.

ORGANIZATIONAL FRAMEWORK

A government wishing to authorize the production of Quality Declared Seed on its territory should ensure that the following official organizations are established, staffed and equipped.

SEED CONSULTATIVE COMMITTEE AND VARIETY REGISTRATION

Duties: to advise the government on all matters concerned with the development of the seed industry; to review and advise the government on the availability of varieties and plant genetic resources, both nationally and internationally; to establish lists of varieties eligible to produce Quality Declared Seed on the basis of evidence submitted with applications. These duties may, if desired be divided between different bodies. Representation on these bodies should be from the Ministry of Agriculture, agricultural research, the seed quality control organization, the extension service, farmers, cooperatives or seed trade organizations; in certain cases it may be desirable to include persons from specialized product users (e.g. bakeries, breweries or food processors).

SEED QUALITY CONTROL ORGANIZATION

Duties: to control and monitor all activities under the system; to establish a register of authorized seed producers; to check inspect a proportion of seed crops and to sample and test a proportion of seed on offer for sale as Quality Declared Seed; to take appropriate action against seed producers or nominated technicians who are ineffective in quality control; to provide training for seed producers and nominated technicians; to take appropriate action against seed traders when there is evidence that Quality Declared Seed is being offered for sale when it is below the standards.

QUALITY DECLARED SEED DECLARATION

Two declarations should be completed for each seed lot by the registered seed producer: one after the planting and the second one after seed processing; these should be made available to the seed quality control organization or the seed purchaser on request.

Following is an example of a suitable declaration proposed.

QUALITY DECLARED SEED

A.Declaration of seed crop production

1. Name and address of the seed producer making this declaration
2. Crop species: common name
3. Scientific name and variety name
4. Area planted
5. Number of field plots
6. Location

B. Declaration of conditioned seed

1. Name and address of the seed producer making this declaration
2. Crop species: common name; scientific name, subspecies
3. Variety name
4. Reference number of the seed lot
5. Weight of seed lot
6. Number and kind of containers
7. Location of production
8. Date when containers were sealed
9. Test results: a sample drawn from the seed lot of ... grams weight was tested in the laboratory on ..... (date) with the following results:
   - 9.1 Pure seed ... percentage by weight
   - 9.2 Other seed ... percentage by weight
   - 9.3 Inert matter ... percentage by weight
   - 9.4 Other crop seed found (number/weight according to the national seed standards) were of the following species:

   a. _____
   b. _____
   c. _____
   etc.

   - 9.5. Germination on _____(date) was _____%
10. The seed lot has received the following fumigation or disinfection treatment:
    - 10.1 Date of treatment
    - 10.2 Treatment given
    - 10.3 Duration of exposure (if relevant)
    - 10.4 Temperature (if relevant)
    - 10.5 Chemical active ingredient
    - 10.6 Concentration of chemical
    - 10.7 Additional information about treatment (for example toxicity)
11. Additional information, for example:
    - 11.1 Varietal purity tests
    - 11.2 Statement of number of generations of multiplications
    - 11.3 Number of seeds of certain weeds
    - 11.4 Tests for seed-borne diseases
    - 11.5 Moisture content
12. The following statement: “The seed lot bearing labels with the above reference number has been produced in accordance with the requirements

for Quality Declared Seed and has been shown by appropriate inspections and tests to meet the standards".

Name and position of authorized signatory _____

Date and signature _____

Cereals and pseudocereals

AMARANTHUS CAUDATUS L. – *AMARANTHACEAE*
INCA WHEAT

1. Facilities and equipment

- Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Spiral separator
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants, including those of wild species of *Amaranthus*.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *Amaranthus* (including wild amaranth, *A. spinosus* L.) by a minimum distance of 200 m.

3.2 Varietal purity

At least 98 percent of the *Amaranthus* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other *Amaranthus* crop or wild species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *Amaranthus*. Special attention should be given to ensure that wild *Amaranthus* species are classified as weeds.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases. The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once before flowering and a second time at flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Amaranthus* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other *Amaranthus* species with similar seed size will be counted separately. If either the number of off-types or the number of other *Amaranthus* species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

AVENA SATIVA L. – *POACEAE*
OATS

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Cylinder
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. An oat crop may only be planted on land on which any small grain planted in the previous two years was of another crop kind, or was planted with QDS of the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of oat by a minimum distance of 150 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc).

3.2 Varietal purity

At least 98 percent of the oat plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other crop species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the oat.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once at the time when varietal characteristics can be best observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the oat plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other cereal species with similar seed size will be counted separately. If either the number of off-types or the number of other cereal species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weed per unit weight
- Seed-borne diseases
- Moisture content

HORDEUM VULGARE L. – *POACEAE*
BARLEY

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Cylinder
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. A barley crop may only planted on land on which any small grain planted in the previous two years was of another crop kind, or was planted with QDS of the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of barley by a minimum distance of 150 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc).

3.2 Varietal purity

At least 98 percent of the barley plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the barley.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once at the time when varietal characteristics can be best observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the barley plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other cereal species with similar seed size will be counted separately. If either the number of off-types or the number of other cereal species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weed per unit weight
- Seed-borne diseases
- Varietal purity
- Moisture content

ORYZA SATIVA L. – *POACEAE*
RICE (OPEN POLLINATED)

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Indent cylinder
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. A rice crop may only be planted on land on which any small grain planted in the previous two years was of another crop kind, or was planted with QDS of the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of rice or crop species with similar seed size by a distance of three m or a physical barrier (ditch, hedge, fence, etc.) to prevent mechanical mixture.

3.2 Varietal purity

At least 98 percent of the rice plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other cereal species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the rice.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once at the time when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety that it is said to be identity of and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the rice plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine 10 random areas of 1 x 1 m in the field and estimate the percentage of panicles not conforming to the characteristics of the variety and the percentage of other cereal species with similar seed size. The field should be rejected if the estimated percentage of either off-types or of other cereal species exceeds two percent (paragraphs 3.2. and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 75 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed borne diseases

ORYZA SATIVA L. – *POACEAE*
RICE (HYBRID)

1. Parental material

For the production of hybrid seed, it is required to obtain inbred parental lines as Maintainers seed, which must be at least of the standard of quality declared seed.

1.1 An inbred line shall be a true breeding strain resulting from self-pollination with selection.

1.2 An approved male sterile line will be used as female parent and an approved inbred line will be used as male parent for the production of hybrid seed.

1.3 A male sterile line shall be carrying cytoplasmic-genetic male sterility the plants of which sheds no viable pollen and is maintained by the normal male fertile sister line.

2. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Indent cylinder
- Gravity separator
- Seed treatment equipment

3. Land requirements

The land to be used for seed production shall be free from volunteer plants. A rice crop may only be planted on land on which any small grain planted in the previous two years was of another crop kind, or was planted with QDS of the same variety.

4. Field standards

4.1 Isolation

The seed field shall be isolated by a distance of 100 m from the fields of all other varieties of rice or fields of the same hybrids, which do not conform to the purity requirements for quality declared seed. The seed field shall also be isolated from other crop species with similar seed size by a distance of 3 m or a physical barrier (ditch, hedge, fence, etc.) to prevent mechanical mixture.

4.2 Ratio of parents

Fields to produce hybrid rice seed shall be so planted that the male (pollen) parent plants are grown in separate rows from the female (seed) parent, maintaining the required proportion of male to female plants throughout the field. Row to row distance between the male to female parents should be adequate to allow specific operations (if needed) such as rope pulling or flag leaf clipping to facilitate pollen flow uniformly.

4.3 Pollen shedders

During flowering, no more than 1 percent of the female plants shall bear inflorescences that have shed or are shedding pollen.

4.4 Variety purity

At least 98 percent of the plants of the parental lines will conform to the true characteristics of the respective parent.

4.5 Weeds general

The seed plot must be reasonably free from weeds, so that the growth of weed shall not prevent a valid inspection of the seed crop.

4.6 Weeds specific

In addition, there shall not be more than the specified numbers of certain weed plants per unit area as per the standards of each country.

4.7 Seed borne diseases

The seed field must be reasonably free from other diseases so as not to prevent a valid assessment of the varietal characteristics.

5. Field Inspections

5.1 Number and timing

Fields to produce seed shall be inspected at least thrice. Once before flowering, the second during flowering and the third at maturity. Additional inspection during flowering may be undertaken to check pollen shedders in the seed parent.

5.2 Technique

5.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum, each to be inspected separately.

5.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents used and that the proportions of the seed to pollen parents have been correctly established. The inspector will then examine the boundaries of the field to confirm that the isolation requirement is satisfied. The field will be generally surveyed and an estimate made of the weeds present and of the disease situation (4.5 and 4.6). During each inspection the inspector will examine carefully 150 plants from the female and 150 plants from the male parent by sampling at least 30 plants from five places at random. The number of plants not conforming to the true characteristics of each of the parent lines will be counted and if the number of off-types in either male or female rows exceed three (out of 150) the field should be rejected. At inspection during flowering the inspector will additionally examine 300 plants in the female rows taken from five separate places distributed at random in the field (60 plants from each place) and count the number of plants that are shedding or have shed pollen. If the number of pollen bearing plants exceeds three (out of 300), the field should be rejected.

5.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

6. Seed Quality Standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 98 percent minimum

- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

PENNISETUM GLAUCUM (L.) R. BR. – *POACEAE*
PEARL MILLET (SYNTHETIC AND OPEN POLLINATED)

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Drying equipment
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Indent cylinder
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. A pearl millet crop may only be planted on land on which any small grain planted in the previous two years was of another crop kind, or was planted with QDS of the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated by 100 m from other varieties of pearl millet and from the fields of the same variety, which do not conform to the varietal purity standards for quality declared seed. The seed field shall also be isolated from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence etc).

3.2 Varietal purity

At least 98 percent of the pearl millet plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the pearl millet.

3.4 Weeds specific

In addition, there shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: the first before approximately 50 percent flowering to check isolation and the second during the maturation phase prior to harvest to determine the incidence of seed-borne diseases and to verify varietal characteristics. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 20 ha should be divided into areas of 20 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the pearl millet plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted. If the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Moisture content
- Seed-borne diseases

PENNISETUM GLAUCUM (L.) R. BR. – *POACEAE*
PEARL MILLET (HYBRID)

1. Parental material

For the production of hybrid seed it is required to obtain inbred lines as Maintainer's Seed; other parental material must be at least of the standard of quality declared seed.

1.1 An inbred line shall be a true breeding strain resulting from self-pollination with selection.

1.2 An approved male sterile line will be used as female parent and an approved inbred line will be used as male parent for the production of hybrid seed.

1.3 A male sterile line shall be carrying cytoplasmic-genetic male sterility, the plants of which shed no viable pollen and have been maintained by the normal male fertile sister line

2. Facilities and Equipment

Recommended:

- Storage warehouse
- Drying equipment
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Cylinder
- Gravity separator
- Seed treatment equipment

3. Land requirements

The land to be used for seed production shall be free from volunteer plants. A pearl millet crop may only be planted on land on which any small grain planted in the previous two years was of another crop kind, or was planted with QDS of the same variety.

4. Field standards

4.1 Isolation

The seed field shall be isolated by 200 m from other varieties of pearl millet or fields of the same variety, which do not conform to the varietal purity requirements for quality declared seed. The seed field shall also be isolated from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence, etc.).

4.2 Ratio of parents

Fields to produce hybrid pearl millet seed shall be so planted that the male (pollen) parent plants are grown in separate rows from the female (seed) parent plants and there must be no mixing of the two. A constant proportion of male to female rows must be maintained throughout the field.

4.3 Emasculation

At flowering, no more than one percent of the female plants shall bear inflorescences which have shed or are shedding pollen.

4.4 Varietal purity

At least 99 percent of the pearl millet plants must conform to the characteristics of the respective parent.

4.5 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the pearl millet.

4.6 Weeds specific

In addition, there shall not be more than the specified number of certain weed plants per unit area (this will be specified by each country according to local needs).

4.7 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

4.8 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

5. Field Inspection

5.1 Number and timing

Fields to produce seed shall be inspected at least three times: the first before flowering, the second during flowering and the third prior to harvest after the seed has matured when seed-borne diseases and varietal characteristics can best be observed. Additional inspections may be needed to check pollen shedding in the female parent during flowering or when there are particular problems.

5.2 Technique

5.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed (paragraphs 1 and 4.2) and the previous cropping of the field. Fields of more than 20 ha should be divided into areas of 20 ha maximum each, to be inspected separately.

5.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 4.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 4.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 4.5, 4.6, 4.7 and 4.8). During each inspection, the inspector will examine carefully 150 plants from the female and 150 plants from the male parent. These plants will be taken from five separate places (30 plants from each place) distributed at random in the female rows and an equal number in the male rows. The number of plants not conforming to the characteristics of either parent will be counted and, if the number of off-types in either the female or the male rows exceeds three, the field should be rejected (paragraph 4.4). At inspections during flowering the inspector will additionally carefully examine 300 plants in the female rows taken from five separate places distributed at random in the field (60 plants from each place) and count the number of plants, which are shedding or have shed pollen; if the number of pollen bearing plants exceeds three, the field should be rejected.

5.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

6. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Moisture content
- Seed-borne diseases

SECALE CEREALE L. – *POACEAE*
RYE

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Indent cylinder
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. A rye crop may only planted on land on which any small grain crop planted in the previous two years was of another crop species or was planted with QDS of the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of rye by a minimum distance of 800 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the rye plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the rye.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once at the time when varietal characteristics can be best observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the rye plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other cereal species with similar seed size will be counted separately. If either the number of off-types or the number of other cereal species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 96 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weed per unit weight
- Seed-borne diseases
- Varietal purity
- Moisture content

SORGHUM BICOLOR (L.) MOENCH – *POACEAE*
SORGHUM (OPEN POLLINATED)

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment
- Drying equipment

To be specified according to local needs:
- Indent cylinder
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants and from Johnson grass (*Sorghum halepense* (L.) Pers.). A sorghum crop may only be planted on land on which any small grain planted in the previous two years was of another crop kind, or was planted with QDS of the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated by 100 m from all other fields of grain or dual-purpose sorghum or fields of the same variety, which do not conform to the varietal purity requirements of quality declared seed; and by 400 m from Johnson grass or forage sorghum with high tillering and grassy panicle. The seed field shall also be isolated from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence etc.).

3.2 Varietal purity

At least 98 percent of the sorghum plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the sorghum.

3.4 Weeds specific

In addition there shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: the first before approximately 50 percent flowering to check isolation and the second during the maturation phase prior to harvest to determine the incidence of seed-borne diseases and to verify varietal characteristics. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the sorghum plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted. If the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Moisture content
- Seed-borne diseases

SORGHUM BICOLOR (L.) MOENCH – *POACEAE*
SORGHUM (HYBRID)

1. Parental material

For the production of hybrid seed it is required to obtain inbred lines as Maintainer's Seed; other parental material must be at least of the standard of quality declared seed

1.1 An inbred line shall be a true breeding strain resulting from self-pollination with selection.

1.2 An approved male sterile line will be used as female parent and an approved inbred line will be used as male parent for the production of hybrid seed.

1.3 A male sterile line shall be carrying cytoplasmic-genetic male sterility the plants of which shed no viable pollen and is maintained by the normal male fertile sister line.

2. Facilities and Equipment

Recommended:

- Storage warehouse
- Drying equipment
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Cylinder
- Gravity separator
- Seed treatment equipment

3. Land requirements

The land to be used for seed production shall be free from volunteer plants and Johnson grass (*Sorghum halepense* (L.) Pers.). A sorghum crop may only be planted on land on which any small grain planted in the previous two years was of another crop kind, or was planted with QDS of the same variety.

4. Field standards

4.1 Isolation

The seed field shall be isolated by 100 m from all other fields of grain or dual-purpose sorghum or fields of the same variety, which do not conform to the varietal purity requirements for quality declared seed; and by 400 m from Johnson grass or forage sorghum with high tailoring and grassy panicle. The seed field shall also be isolated from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence etc.).

4.2 Ratio of parents

Fields to produce hybrid sorghum seed shall be so planted that the male (pollen) parent plants are grown in separate rows from the female (seed) parent plants and there must be no mixing of the two. A constant proportion of male to female rows must be maintained throughout the field.

4.3 Emasculation

At flowering, no more than 1 percent of the female plants shall bear inflorescences, which have shed or are shedding pollen.

4.4 Varietal purity

At least 98 percent of the sorghum plants must conform to the characteristics of the respective parent.

4.5 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the sorghum.

4.6 Weeds specific

In addition, there shall not be more than the specified number of certain weed plants per unit area (this will be specified by each country according to local needs).

4.7 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

4.8 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

5. Field inspections

5.1 Number and timing

Fields to produce seed shall be inspected at least three times: the first before flowering, the second during flowering and the third prior to harvest after the seed has matured when seed-borne diseases and varietal characteristics can best be observed. Additional inspections may be needed to check pollen shedding in the female parent during flowering or when there are particular problems.

5.2 Technique

5.2.1 Before entering the field: The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

5.2.2 In the field: The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established. The inspector will then examine the boundaries of the field to confirm that the isolation requirement is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 4.5, 4.6, 4.7 and 4.8). During each inspection, the inspector will examine carefully 150 plants from the female and 150 plants from the male parent. These plants will be taken from five separate places (30 plants from each place), distributed at random in the female rows and, an equal number in the male rows. The number of plants not conforming to the characteristics of either parent will be counted and if the number of off-types in either the female or the male rows exceeds three, the field should be rejected. At inspections during flowering, the inspector will additionally carefully examine 300 plants in the female rows taken from five separate places distributed at random in the field (60 plants from each place) and count the number of plants, which are shedding or have shed pollen; if the number of pollen bearing plants exceeds three, the field should be rejected.

5.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

6. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Moisture content
- Seed-borne diseases

TRITICUM AESTIVUM L., *T. TURGIDUM* L. SUBSP. *DURUM* (DESF.) HUSN. – *POACEAE*

WHEAT

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Indent cylinder
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. A wheat crop may only be planted on land on which any small grain planted in the previous two years was of another crop kind, or was planted with QDS of the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of wheat or crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the wheat plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other cereal species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the wheat.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once at the time when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the wheat plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other cereal species with similar seed size will be counted separately. If either the number of off-types or the number of other cereal species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

ZEA MAYS L. – *POACEAE*
MAIZE (OPEN POLLINATED)

1. Facilities and equipment

Recommended:
- storage warehouse
- Shelling equipment
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Grading/sizing equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants and the seed crop should not be grown on land, which has the last year produced a crop of another variety or species unless the preceding crop was planted with QDS of the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 200 m. Isolation can be achieved by 30 days difference in flowering time.

3.2 Varietal purity

At least 98 percent of the maize plants must conform to the characteristics of the variety.

3.3 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.4 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspection

4.1 Number and timing

Fields to produce seed shall be inspected at least once when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the maize plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement is satisfied. The field generally will next be surveyed and an estimate made of the disease situation. During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted. If the number of off-types exceeds three, the field should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

Seed ears inspected at maturity shall not contain more than one percent off-types, including the ears with off-coloured kernels.

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Moisture content
- Seed-borne diseases

ZEA MAYS L. – *POACEAE*
MAIZE (HYBRID)

1. Parental material

For the production of hybrid seed it is required to obtain inbred lines as Maintainer's Seed; other parental material must be at least of the standard of quality declared seed.

An inbred line shall be a true breeding strain resulting from self-pollination with selection.

2. Facilities and Equipment

Recommended:
- Storage warehouse
- Shelling equipment
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Grading/sizing equipment
- Seed treatment equipment

3. Land requirements

The land to be used for seed production shall be free from volunteer plants.

4. Field standards

4.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 200 m. Isolation can be achieved by 30 days difference in flowering time. Reduction in isolation distance may be permitted by planting border rows of the male parent all around the seed field.

4.2 Ratio of parents

Fields to produce hybrid maize seed shall be so planted that the male (pollen) parent plants are grown in separate rows from the female (seed) parent plants and there must be no mixing of the two. A constant proportion of male to female rows must be maintained throughout the field.

4.3 Emasculation

At flowering, no more than one percent of the female plants shall bear male inflorescences, which have shed or are shedding pollen.

4.4 Varietal purity

At least 98 percent of the maize plants must conform to the characteristics of the respective parent.

4.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

4.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

5. Field inspections

5.1 Number and timing

Fields to produce seed shall be inspected at least three times: the first before flowering, the second during flowering and the third at maturity when varietal characteristics can best be observed. Additional inspections may be needed to check pollen shedding in the female parent during flowering or when there are particular problems.

5.2 Technique

5.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed (paragraphs 1 and 4.2) and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

5.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 4.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 4.1) is satisfied. The field generally will next be surveyed and an estimate made of the disease situation (paragraphs 4.5 and 4.6). During each inspection, the inspector will examine carefully 150 plants from the female and 150 plants from the male parent. These plants will be taken from five separate places (30 plants from each place) distributed at random in the female rows and an equal number in the male rows. The number of plants not conforming to the characteristics of either parent will be counted and if the number of off-types in either the female or the male rows exceeds three the field should be rejected (paragraph 4.4). At inspections during flowering the inspector will additionally carefully examine 300 plants in the female rows taken from five separate places distributed at random in the field (60 plants from each place) and count the number of plants which are shedding or have shed pollen; if the number of pollen bearing plants exceeds 3, the field should be rejected.

5.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

6. Seed quality standards

Seed ears inspected at harvest shall not contain more than 0.5 percent off-types ears, including the ears with off-colored kernels.

The seed must conform to the following as assessed using the national rules for seed testing:

➢ Germination	80 percent minimum (for single cross); 85 percent (for 3-ways or double cross)
➢ Analytical purity	98 percent minimum
➢ Varietal purity	98 percent minimum

and to the following if specified by each country according to local needs:

- ➢ Moisture content
- ➢ Seed-borne diseases

Food legumes

CAJANUS CAJAN (L.) MILLSP. – *FABACEAE*
RED GRAM, PIGEON PEA

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/ screen cleaner
- Bagging/ weighing equipment

To be specified according to local needs:
- Drying equipment
- Scalper
- Gravity separator
- Colour separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The field shall be isolated from all other fields of red gram by a distance of 100 m or other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the red gram plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other legume species with similar seed size.

3.4 Weed general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the red gram plants.

3.5 Weeds specific

There shall be not more within the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the degree of infection of the diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least three times, of which one will be at flowering when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 10 ha should be divided into areas of 10 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the red gram plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other legume species with similar seed size will be counted separately. If either the number of off-types or the number of other legume species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing

- Germination (Including hard seeds) 70 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/ other crop seeds per unit weight
- Moisture content
- Seed-borne diseases.

CICER ARIETINUM L. – *FABACEAE*
CHICKPEA, GRAM

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to the local needs:
- Drying equipment
- Gravity separator
- Scarifier
- Seed treatment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of chickpeas by a distance of five m or crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the chickpea plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other legume species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the chickpeas.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for see-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the degree of infection of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspection

4.1 Number and timing

Fields to produce seed shall be inspected at least once at a time when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the chickpea plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other legume species with similar seed size will be counted separately. If either the number of off-types or the number of other legume species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination (including hard seeds) 75 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

LENS CULINARIS MEDIK. – *FABACEAE*
LENTILS

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Scalper
- Gravity separator
- Colour separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The field shall be isolated from all other fields of lentils by a distance of five m or other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the lentil plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other legume species with similar seed size.

3.4 Weeds general

4.5 The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the lentil plants..

3.5 Weeds specific

There shall be not more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the degree of infection of the diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspection

4.1 Number and timing

Fields to produce seed shall be inspected at least once at a time when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the lentil plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other legume species with similar seed size will be counted separately. If either the number of off-types or the number of other legume species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing.

➢ Germination (including hard seeds)	70 percent minimum
➢ Analytical purity	98 percent minimum
➢ Varietal purity	98 percent minimum

and to the following if specified by each country according to local needs:

- ➢ Weed/other crop seeds per unit weight
- ➢ Moisture content
- ➢ Seed-borne diseases

PHASEOLUS SPP. L. – *FABACEAE*
BEANS

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Colour sorting
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 20 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *Phaseolus* bean plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other crop species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *Phaseolus* beans.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once at flowering and a second time at maturity. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Phaseolus* bean plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5 Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

PISUM SATIVUM L. – *FABACEAE*
PEAS

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Scalper
- Colour separator
- Gravity separator
- Belt graders
- Spiral separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of pea by a distance of five m or crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc).

3.2 Varietal purity

At least 98 percent of the pea plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other crop species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that the weed growth shall not be such that it prevents a valid inspection of the pea plants.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the degree of disease infection should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: first during flowering and second during pod stage. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety that it is supposed to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the pea plants generally conform to the characteristics of the variety and will then examine boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. Generally, the field will then be surveyed and an estimate will be made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination (including hard seeds) 75 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

VICIA FABA L. – *FABACEAE*
BROAD BEANS

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Colour sorting
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the broad bean plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other crop species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the broad beans.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

The fields to produce seed shall be inspected at least twice; first at flowering and a second time at maturity when varietal characteristics can be best observed.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the broad bean plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey the inspector will examine carefully 150 plants at random, 30 at each of five separate places in the field; the number of plants of ether crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species exceeds three the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination (including hard seeds) 70 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

VIGNA RADIATA (L.) R. WILCZEK *(= PHASEOLUS RADIATUS) – FABACEAE*
MUNG BEAN, GREEN GRAM

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Scalper
- Gravity separator
- Spiral separator
- Colour separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 5 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the mungbean plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other crop species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the mungbeans.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the level of infection of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: first at flowering and a second time at maturity when varietal characteristics can be best observed. Additional inspection may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 The inspector will confirm that the mungbean plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this inspection, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination (including hard seeds) 75 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases.

VIGNA UNGUICULATA (L.) WALP. – *FABACEAE*
COWPEA

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Colour sorter
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 20 m and from fields of crop species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the cowpea plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other crop species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the cowpeas.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: the first at flowering and the second at maturity when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the cowpea plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination (including hard seeds) 75 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

Oil crops

ARACHIS HYPOGAEA L. – *FABACEAE*
GROUNDNUTS

1. Facilities and equipment

Recommended:

- Storage warehouse
- Sheller
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Scalper
- Gravity separator
- Colour separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 5 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.)

3.2 Varietal purity

At least 98 percent of the groundnut plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other legume species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the groundnuts.

3.5 Weeds specific

There shall not be more than the specified number of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the degree of infection of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice; once at flowering and a second time at maturity. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the groundnut plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants at random, 30 at each of five separate places in the field. The number of plants not conforming to the characteristics of the variety and the number of plants of other crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species exceeds three, the field should be rejected (paragraph 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

BRASSICA NAPUS L. – *BRASSICACEAE*
RAPE

Related species:

The following will inter cross among *Brassica* species: *B. juncea*, *B. napus* L., *B. nigra*, *B. rapa* (including subsp. *campestris, chinensis* and *pekinensis*) and *B. tournefortii*.

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/ screen cleaner
- Packaging/ weighing equipment

To be specified according to local needs:
- Drying equipment
- Spiral separator
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants, including those of other *Brassica* species.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of related species by a minimum distance of 100 m.

3.2 Varietal purity

At least 98 percent of the plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other cruciferous species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the seed crop.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases, reasonably free means that the amount of disease should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspection

4.1 Number and timing

Fields to produce seed shall be inspected at least three times, once in the vegetative stage, a second time at flowering and the third at maturity prior to harvesting. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 10 ha should be divided into areas or 10 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirements is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field, the number of plants not conforming to the characteristics of the variety and the number of plants of other *Brassica* species with similar seed size will be counted separately. If either the number of off-types or the number of other cruciferous species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 85 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/ other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

BRASSICA NIGRA (L.) W. D. J. KOCH – *BRASSICACEAE*
MUSTARD

Related species:

The following will inter cross among *Brassica* species: *B. juncea*, *B. napus* L., *B. nigra*, *B. rapa* (including subsp. *campestris*, *chinensis* and *pekinensis*) and *B. tournefortii*.

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/ screen cleaner
- Packaging/ weighing equipment

To be specified according to local needs:
- Drying equipment
- Spiral separator
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants, including those of other *Brassica* species.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of related species by a minimum distance of 100 m.

3.2 Varietal purity

At least 98 percent of the plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other cruciferous species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds, reasonably free means that weed growth shall not be such that it prevents a valid inspection of the seed crop.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases, reasonably free means that the amount of disease should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspection

4.1 Number and timing

Fields to produce seed shall be inspected at least three times, once in the vegetative stage, a second time at flowering and the third at maturity prior to harvesting. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 10 ha should be divided into areas or 10 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field, the number of plants not conforming to the characteristics of the variety and the number of plants of other *Brassica* species with similar seed size will be counted separately. If either the number of off-types or the number of other cruciferous species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 85 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/ other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

GLYCINE MAX (L.) MERR. – *FABACEAE*
SOYBEAN

1. Facilities and Equipment

Recommended:
- Drying equipment
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Spiral separator
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of soya bean or crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the soya bean plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other legume species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the soya beans.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspection

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once at flowering and a second time at maturity. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field: The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field: The inspector will confirm that the soya bean plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed Quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

➢ Germination	65 percent minimum (humid tropics) 70 percent minimum (elsewhere)
➢ Analytical purity	98 percent minimum
➢ Varietal purity	98 percent minimum

and to the following if specified by each country according to local needs:

- ➢ Weed/other crop seeds per unit weight
- ➢ Moisture content
- ➢ Seed-borne diseases

HELIANTHUS ANNUUS L. – *ASTERACEAE*
SUNFLOWER (OPEN POLLINATED)

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 200 m. The seed field shall also be isolated from other crop species of similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the sunflower plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the sunflowers.

3.4 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.5 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field: The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous

cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field: The inspector will confirm that the sunflower plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.3, 3.4 and 3.5). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted. If the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Moisture content
- Seed-borne diseases

HELIANTHUS ANNUUS L. – *ASTERACEAE*
SUNFLOWER (HYBRID)

1. Parental material

For the production of hybrid seed it is required to obtain in-bred lines as Maintainer's Seed.

1.1 An inbred line shall be a true breeding strain resulting from self-pollination with selection.

1.2 An approved male sterile line will be used as female parent and an approved inbred line will be used as male parent for the production of hybrid seed.

1.3 A male sterile line shall be carrying cytoplasmic-genetic male sterility the plants of which shed no viable pollen and is maintained by the normal male fertile sister line.

2. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

3. Land requirements

The land to be used for seed production shall be free from volunteer plants.

4. Field standards

4.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 400 m. Isolation can be achieved by 40 days difference in flowering time. The seed field shall also be isolated from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence etc.).

4.2 Ratio of parents

Fields to produce hybrid sunflower seed shall be so planted that the male (pollen) parent plants are grown in separate rows or blocks (but only in blocks when the hybrid seed is produced through manual pollination) from the female (seed) parent plants; there must be no mixing of the two. A constant proportion of male to female plants must be maintained throughout the field.

4.3 Emasculation

At flowering, no more than one percent of the female plants shall bear inflorescences which have shed or are shedding pollen.

4.4 Varietal purity

At least 98 percent of the sunflower plants must conform to the characteristics of the respective parent.

4.5 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the sunflower plants.

4.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

4.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

5. Field inspections

5.1 Number and timing

Fields to produce seed shall be inspected at least twice: the first during flowering and the second at maturity when varietal characteristics can best be observed. Additional inspections may be needed to check pollen shedding in the female parent during flowering or when there are particular problems.

5.2 Technique

5.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed (paragraphs 1 and 4.2) and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

5.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 4.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 4.1) is satisfied. The field generally will next be surveyed and an estimate made of weeds present and the disease situation (paragraphs 4.5, 4.6 and 4.7). During each inspection the inspector will examine carefully 150 plants from the female and 150 plants from the male parent. These plants will be taken from five separate places (30 plants from each place) distributed at random in the female rows and an equal number in the male rows. The number of plants not conforming to the characteristics of either parent will be counted and if the number of off-types in either the female or the male rows exceeds three, the field should be rejected (paragraph 4.4). At inspections during flowering the inspector will additionally carefully examine 300 plants in the female rows taken from five separate places distributed at random in the field (60 plants from each place) and count the number of plants, which are shedding or have shed pollen; if the number of pollen bearing plants exceeds three, the field should be rejected.

5.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

6. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Moisture content
- Seed-borne diseases

SESAMUM INDICUM L. – *PEDALIACEAE*
SESAME

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Indented cylinder
- Colour separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 50 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the sesame plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other crop species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the sesame plants.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the level of infection of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field Inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: first at flowering and a second time at maturity when varietal characteristics can be best observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the sesame plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation. During this inspection, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species exceeds three, the field should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed Quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

Forage crops – *Poaceae*

ANDROPOGON GAYANUS KUNTH

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Resilient thresher
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *A. gayanus* by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *A. gayanus* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *A. gayanus*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Field to produce seed shall be inspected at least two times, firstly before flowering and again during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *A. gayanus* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 10 percent minimum
- Analytical purity 50 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

BOTHRIOCHLOA INSCULPTA (HOCHST. EX A. RICH) A. CAMUS

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Cone thresher
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *Bothriochloa* spp. by a minimum distance of 5 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *Bothriochloa insculpta* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *Bothriochloa insculpta*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Bothriochloa insculpta* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 10 percent minimum
- Analytical purity 30 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

BROMUS CATHARTICUS VAHL
RESCUE GRASS

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment
- Indented cylinder

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Polishing/brushing machine
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *Bromus catharticus* by a minimum distance of 50 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *Bromus catharticus* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other cereal species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the plants.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during maturity when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Bromus catharticus* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 75 percent minimum
- Analytical purity 95 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

CENCHRUS CILIARIS L. *(= PENNISETUM CILIARE)*
BUFFEL GRASS

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Walker or Nesbit cleaner
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of the same species and from other crop species with similar seed size by a distance adequate (10 m) to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.) and by a distance of 100 m from fields of other species known to be able to cross.

3.2 Varietal purity

At least 98 percent of the plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *Cenchrus* species.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice, once before flowering and again during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Cenchrus ciliaris* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 20 percent minimum
- Analytical purity 90 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

CHLORIS GAYANA KUNTH
RHODES GRASS

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Indent cylinder
- Disc separator
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *Chloris gayana* of similar ploidy (diploid or tetraploid) by a minimum distance of 100 m. and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *Chloris gayana* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *Chloris gayana*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Chloris gayana* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination diploids: 20 percent; tetraploids: 10 percent minimum
- Analytical purity diploids: 85 percent; tetraploids: 75 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

DACTYLIS GLOMERATA L.
COCKSFOOT

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment
- Indented cylinder

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Debearder
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *D. glomerata* by a distance of 50 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or physical barrier (ditch, hedge, fence, etc.).

2.2 Varietal purity

At least 98 percent of the *D. glomerata* plants must conform to the characteristics of the variety.

2.3 Species purity

There shall be not more than two percent of other cereal species with similar seed size.

2.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *D. glomerata* plants.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed borne-diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during maturity when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *D. glomerata* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 80 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

ERAGROSTIS CURVULA (SCHRAD.) NEES
WEEPING LOVE GRASS

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Indent cylinder
- Disc separator
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *E. curvula* of similar ploidy (diploid or tetraploid) by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *E. curvula* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *E. curvula*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *E. curvula* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 60 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

FESTUCA ARUNDINACEAE SCHREB.

TALL FESCUE

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment
- Indented cylinder

To be specified according to local needs:

- Drying equipment
- Gravity separator
- Polishing/brushing machine
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *Festuca arundinacea* by a minimum distance of 50 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *Festuca arundinacea* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other cereal species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the plants.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during maturity when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Festuca arundinacea* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 75 percent minimum
- Analytical purity 95 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

LOLIUM MULTIFLORUM LAM.
ITALIAN RYEGRASS

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment
- Indented cylinder

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Polishing/brushing machine
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *Lolium* spp. by a minimum distance of 50 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *Lolium multiflorum* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other cereal species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the plants.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during maturity when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field: The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Lolium multiflorum* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 75 percent minimum
- Analytical purity 95 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

MEGATHYRSUS MAXIMUS (JACQ.) B.K. SIMON & S. W. L. JACOBS (= *PANICUM MAXIMUM* JACQ.)

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Indent cylinder
- Disc separator
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *Megathyrus maximus* by a minimum distance of 10 m and from other crop species, with similar seed size by an adequated distance to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.) and by a distance of 100 m from fields of other *Megathyrus* spp. known to be able to cross pollinate.

3.2 Varietal purity

At least 98 percent of the *M. maximus* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *M. maximus*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice, once before and once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *M. maximus* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected.

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 75 percent minimum

and to the following if specified by each country according to local needs

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

PANICUM COLORATUM L.
COLOURED GUINEA GRASS

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *P. coloratum* by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *P. coloratum* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *P. coloratum*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *P. coloratum* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 20 percent minimum
- Analytical purity 80 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

PASPALUM DILATATUM POIR.
DALLIS GRASS

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *P. dilatatum* and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *P. dilatatum* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *P. dilatatum*.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can be best observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *P. dilatatum* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected.

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 60 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

PENNISETUM CLANDESTINUM HOCHST. EX CHIOV.
KIKUYU GRASS

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Indent cylinder
- Disc separator
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *P. clandestinum* by a minimum distance of 5 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

2.2 Varietal purity

At least 98 percent of the *P. clandestinum* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *P. clandestinum*.

3.6 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal

characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *P. clandestinum* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation. During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected.

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 90 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

SETARIA INCRASSATA (HOCHST.) HACK. (FORMERLY *S. PORPHYRANTHA* STAPF EX PRAIN)

PURPLE PIGEON GRASS

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Indent cylinder
- Disc separator
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *S. incrassata* by a minimum distance of 100 m. and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *S. incrassata* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *S. incrassata*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *S. incrassata* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 10 percent minimum
- Analytical purity 95 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

SETARIA SPHACELATA (SCHUMACH.) STAPF & C. E. HUBB.
SETARIA

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Indent cylinder
- Disc separator
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *S. sphacelata* by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *S. sphacelata* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

2.3 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the. *S. sphacelata.*

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *S. sphacelata* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 20 percent minimum
- Analytical purity 60 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

UROCHLOA DECUMBENS (STAPF) R. D. WEBSTER (= *BRACHIARIA DECUMBENS* STAPF)

SIGNAL GRASS

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *U. decumbens* or crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *U. decumbens* plants must conform to the characteristics of the variety.

3.3 Species purity. There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *U. decumbens*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.7 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *U. decumbens* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 15 percent minimum
- Analytical purity 50 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

UROCHLOA HUMIDICOLA (RENDLE) MORRONE & ZULOAGA (= *BRACHIARIA HUMIDICOLA* (RENDLE) SCHWEICK.)

KORONIVIA GRASS

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *U. humidicola* or crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *U. humidicola* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other grass species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *U. humidicola*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

2.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Urochloa humidicola* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation. During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other grass species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two percent, the field should be rejected.

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 15 percent minimum
- Analytical purity 50 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

Forage crops – *Fabaceae*

CALOPOGONIUM MUCUNOIDES DESV.
CALOPO

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *C. muconoides* and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *C. muconoides* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *C. muconoides*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *C. muconoides* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 50 percent minimum
- Analytical purity 95 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

CENTROSEMA PUBESCENS BENTH
CENTRO

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *C. pubescens* and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.)

3.2 Varietal purity

At least 98 percent of the *C. pubescens* plants must conform to the characteristics of the variety

3.3 Species purity

There shall be not more than two percent of other species with similar seed size

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *C. pubescens*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

6.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2. In the field. The inspector will confirm that the *C. pubescens* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 50 percent minimum
- Analytical purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

DESMODIUM UNCINATUM (JACQ.) D.C.
SILVERLEAF DESMODIUM

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Indent cylinder
- Disc separator
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *Desmodium* spp. by a minimum distance of 100 m. and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *Desmodium uncinatum* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *Desmodium uncinatum*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Desmodium uncinatum* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 94 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

LABLAB PURPUREUS (L.) SWEET

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Indent cylinder
- Disc separator
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *L. purpureus* by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *L. purpureus* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *L. purpureus.*

4.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *L. purpureus* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 75 percent minimum
- Analytical purity 94 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

LOTONONIS BAINESII BAKER
LOTONONIS

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Gravity separator
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *L. bainesii* and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *L. bainesii* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

4.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *L. bainesii*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *L. bainesii* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 50 percent minimum
- Analytical purity 93 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

LOTUS CORNICULATUS L.

BIRDSFOOT TREFOIL

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment
- Gravity separator

To be specified according to local needs:

- Drying equipment
- Indented cylinder
- Spiral separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *Lotus* spp. by a distance of 50 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *Lotus* spp. plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *Lotus* plants.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed borne-diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once at maturity when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Lotus corniculatus* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other grass species exceeds two, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection: An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 75 percent minimum
- Analytical purity 95 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

MEDICAGO ARABICA (L.) HUDS.
BURR CLOVER

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of medics by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the medic plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the medics.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the two previous croppings of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately and a lot number is assigned to that field.

4.2.2 In the field. The inspector will confirm that the medic plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other species with similar seed size will be counted separately. If either the number of off-types or the number of other medic species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weeds per unit weight
- Moisture content
- Seed-borne diseases

MEDICAGO SATIVA L.
LUCERNE, ALFALFA

1. Facilities and equipment

Recommended:
- Storage warehouse
- Drying equipment
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Cylinder
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated by 100 m from fields of lucerne, which do not conform to the varietal purity standards for Quality Declared Seed. The seed field shall also be isolated from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence etc.).

3.2 Varietal purity

At least 98 percent of the plants must conform to the characteristics of the variety.

3.3 Weed general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the lucerne plants.

3.4 Weed specific

In addition, there shall not be more than the specified number of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must reasonably free from other diseases; reasonably free means that the amount of disease should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least two times: the first before approximately 50 percent flowering to check isolation and the second between flowering and maturity to verify varietal characteristics. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 10 ha should be divided into areas of 10 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that all of the lucerne plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to check that the isolation requirement is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted. If the number of off-types exceeds three, the field should be rejected (Paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs :

- Moisture content
- Seed-borne disease
- Objectionable weeds

MEDICAGO SCUTELLATA (L.) MILL.
SNAIL CLOVER

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of medics by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the medic plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the medics.

3.6 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the two previous croppings of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately and a lot number is assigned to that field.

4.2.2 In the field. The inspector will confirm that the medic plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other species with similar seed size will be counted separately. If either the number of off-types or the number of other medic species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weeds per unit weight
- Moisture content
- Seed-borne diseases

MEDICAGO TRUNCATULA GAERTN.
BARREL MEDIC

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of medics by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the medic plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the medics.

4.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the two previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately and a lot number is assigned to that field.

4.2.2 In the field. The inspector will confirm that the medic plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other species with similar seed size will be counted separately. If either the number of off-types or the number of other medic species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weeds per unit weight
- Moisture content
- Seed-borne diseases

PUERARIA PHASEOLOIDES (ROXB.) BENTH
TROPICAL KUDZU

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *P. phaseoloides* and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *P. phaseoloides* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *P. phaseoloides.*

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *P. phaseoloides* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 50 percent minimum
- Analytical purity 95 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

STYLOSANTHES SPP.
STYLO

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Indent cylinder
- Disc separator
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Seed treatment equipment

2. Land requirement

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *Stylosanthes* spp. by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc).

3.2 Varietal purity

At least 98 percent of the *Stylosanthes* spp. plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *Stylosanthes* spp.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

4.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *Stylosanthes* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 90 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

TRIFOLIUM ALEXANDRINUM L.
BERSEEM CLOVER

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. The following crops should not be planted during the two previous years: lucerne (*Medicago sativa*), berseem clover (*Trifolium alexandrium*) unless of the same variety, red clover (*Trifolium pratense*), persian clover (*Trifolium resupinatum*).

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of berseem clover by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc).

3.2 Varietal purity

At least 98 percent of the berseem clover plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the berseem clover.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the two previous years cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the berseem clover plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other cereal species with similar seed size will be counted separately. If either the number of off-types or the number of other clover species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weed per unit weight
- Moisture contents
- Seed-borne diseases

TRIFOLIUM FRAGIFERUM L.
STRAWBERRY CLOVER

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. The following crops should not be planted during the two previous years: Lucerne (*Medicago sativa*) or clovers (*Trifolium* spp.) unless the clover was the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of the same clover by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the clover plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the clover.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous two years cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately and a lot number is assigned to that field.

4.2.2 In the field. The inspector will confirm that the clover plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other clover species with similar seed size will be counted separately. If either the number of off-types or the number of other clover species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weeds per unit weight
- Moisture content
- Seed-borne diseases

TRIFOLIUM INCARNATUM L.
CRIMSON CLOVER

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. The following crops should not be planted during the two previous years: Lucerne (*Medicago sativa*) or clovers (*Trifolium* spp.) unless the clover was the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of the same clover by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the clover plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be and the previous two years cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately and a lot number is assigned to that field.

4.2.2 In the field. The inspector will confirm that the clover plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other clover species with similar seed size will be counted separately. If either the number of off-types or the number of other clover species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weeds per unit weight
- Moisture content
- Seed-borne diseases

TRIFOLIUM PRATENSE L.
RED CLOVER

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. The following crops should not be planted during the two previous years: lucerne (*Medicago sativa*) or clovers (*Trifolium* spp.) unless the clover was the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of the same clover by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the clover plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the clover.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous two years cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately and a lot number is assigned to that field.

4.2.2 In the field. The inspector will confirm that the clover plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other clover species with similar seed size will be counted separately. If either the number of off-types or the number of other clover species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weeds per unit weight
- Moisture content
- Seed-borne diseases

TRIFOLIUM REPENS L.
WHITE CLOVER

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. The following crops should not be planted during the two previous years: Lucerne (*Medicago sativa*) or clovers (*Trifolium* spp.) unless the clover was the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of the same clover by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the clover plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the clover.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which is said to be, and the previous two years cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately and a lot number is assigned to that field.

4.2.2 In the field. The inspector will confirm that the clover plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other clover species with similar seed size will be counted separately. If either the number of off-types or the number of other clover species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weeds per unit weight
- Moisture content
- Seed-borne diseases

TRIFOLIUM RESUPINATUM L.

PERSIAN CLOVER

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. The following crops should not be planted during the two previous years: Lucerne (*Medicago sativa*) or clovers (*Trifolium* spp.) unless the clover was the same variety.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of the same clover by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the clover plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the clover.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety, which it is said to be and the previous two years cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately and a lot number is assigned to that field.

4.2.2 In the field. The inspector will confirm that the clover plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other clover species with similar seed size will be counted separately. If either the number of off-types or the number of other clover species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weeds per unit weight
- Moisture content
- Seed-borne diseases

TRIFOLIUM SEMIPILOSUM FRESEN

1. Facilities and Equipment

Recommended:

- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *T. semipilosum* by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *T. semipilosum* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

4.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *T. semipilosum*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the *T. semipilosum* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field, to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine the field carefully selecting at random row lengths or sample areas according to the table below. The percentage of plants not conforming to the characteristics of the variety and the percentage of plants of other species with similar seed size will be estimated separately. If either the estimated percentage of off-types or the estimated percentage of other species exceeds two percent, the field should be rejected (paragraphs 3.2 and 3.3).

Number of sample areas

Field area	Number of sample areas	
	Row crops units of 5 m	Sward crops units of 1 sq m
Less than 10 ha	10	5
10 to 50 ha	20	10

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 96.5 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases
- Varietal purity

TRIFOLIUM SUBTERRANEUM L.
SUB CLOVER

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of *T. subterraneum* by a minimum distance of 100 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the *T. subterraneum* plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the *T. subterraneum*.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least once during flowering when varietal characteristics can best be observed and isolation can be checked. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the two previous cropping years of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately and a lot number is assigned to that field.

4.2.2 In the field. The inspector will confirm that the *T. subterraneum* plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other *Trifolium* species with similar seed size will be counted separately. If either the number of off-types or the number of other *Trifolium* species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weeds per unit weight
- Moisture content
- Seed-borne diseases

VICIA SATIVA L.
COMMON VETCH

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Spiral separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants. None of the following crops should have been planted on the site during the two previous years: vetch (*Vicia* spp.), *Lathyrus* spp., field pea (*Pisum sativum*) or lentil (*Lens culinaris*).

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of vetch by a minimum distance of 50 m and from other crop species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the vetch plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the vetch.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: first during flowering and second during their pod stage. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the two previous years cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the vetch plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other vetch species with similar seed size will be counted separately. If either the number of off-types or the number of other vetch species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 80 percent
- Analytical purity 96 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Noxious weed per unit weight
- Moisture content
- Seed-borne diseases

Industrial crops

GOSSYPIUM HIRSUTUM L. – *MALVACEAE*
COTTON (OPEN POLLINATED)

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Seed drying equipment
- Seed-cotton ginning equipment
- Seed delinting equipment
- Bagging/weighing equipment

To be specified according to local needs:
- Cylinder
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from the same species of cotton by a distance of 30 m and from different species of cotton by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the cotton plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the cotton.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: the first when the crop approaches flowering and the second before first boll picking. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than 20 ha should be divided into areas of 20 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the cotton plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted. If the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

GOSSYPIUM HIRSUTUM L. – *MALVACEAE*
COTTON (HYBRID)

1. Parental Material

For the production of the hybrid seed, it is necessary to obtain the parental lines as Maintainers seed.

2. Facilities and Equipment

Recommended:
- Storage warehouse
- Seed-cotton ginning equipment
- Seed delinting equipment
- Seed drying equipment
- Bagging/weighing equipment

To be specified according to local needs:
- Cylinder
- Gravity separator
- Seed treatment equipment

3. Land requirements

The land to be used for seed production shall be free from volunteer plants.

4. Field standards

4.1 Isolation

The seed field shall be isolated from the same species of cotton by a distance of 30 m and from different species of cotton by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence, etc.).

4.2 Ratio of parents

Fields to produce hybrid cotton seed shall be so planted that the male (pollen) parent plants are grown separately from the female (seed) parent plants and there must be a sufficient number of male plants to provide pollen required for pollinating the number of female plants.

4.3 Emasculation

At flowering, no more than 1 percent of the female plants shall bear inflorescences that have shed or are shedding pollen.

4.4 Varietal purity

At least 98 percent of the plants must conform to the characteristics of the respective female and male parents.

4.5 Weeds

The seed field must be reasonably free from weeds, so that it does not prevent a valid inspection of the seed plot. There shall be no more than the specified number of certain weed plants per unit area as per the requirements of each country.

4.6 Seed borne diseases

The seed field must be within the standards for seed borne diseases specified by each country according to local needs.

4.7 Other diseases

The seed field must be reasonably free from other diseases, so that it should not prevent a valid assessment of the varietal characteristics.

5. Field inspections

5.1 Number and timing

Fields to produce seed shall be inspected at least three times. The first before flowering, the second when the crop approaches flowering and the third before first boll picking. Additional inspections may be needed to check emasculation of the female parent during flowering or when there is any particular problem.

5.2 Technique

5.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents, of which it is said to be composed, and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

5.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions of female to male plants have been maintained correctly in the seed field. The inspector will also examine the boundaries of the field to confirm that the isolation requirement is satisfied. The field will next be surveyed to estimate the weeds present and of the disease situation.

During each inspection, the inspector will examine carefully 150 plants each from the male and female parents taken at random from five separate places distributed in the field (30 plants at each place) and count the number of plants not conforming to the characteristics of the parents. If the number exceed three (out of 150), the field should be rejected. At inspections during flowering, the inspector will carefully examine 300 additional plants in the female parent taken from five separate places distributed at random in the field (60 plants at each place) and count the number of plants which have not been emasculated properly. If this number exceeds three (out of 300), the field should be rejected.

5.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

6. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 98 percent minimum
- *Varietal purity 90 percent minimum

(includes off-types and selfed females; off-types not to exceed two percent)

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

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* To be verified by conducting a grow-out field trial, in which at least 200 plants in two replications, are to be examined to count off-types and selfed females.

RICINUS COMMUNIS L. – *EUPHORBIACEAE*
CASTOR BEAN

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Bagging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Colour sorter
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all sources of undesirable pollen by a distance of 100 m and from fields of crop species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the castor bean plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other crop species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the castor bean.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: the first at flowering and the second at maturity when varietal characteristics can best be observed. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than 50 ha should be divided into areas of 50 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the castor bean plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspections. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

Vegetables

ABELMOSCHUS ESCULENTUS (L.) MOENCH – *MALVACEAE*
OCRA

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of ocra by a minimum distance of 200 m and from fields of species with similar seed size by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the ocra plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the ocra.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once in the vegetative stage and the second time at the start of flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the ocra plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field and count the number of plants not conforming to the characteristics of the variety. If this number exceeds three, the field should be rejected (paragraph 3.2)

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 65 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

ALLIUM CEPA L. – *ALLIACEAE*
ONION (OPEN POLLINATED)

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Weighing/packaging equipment

To be specified according to local needs:
- Water dipping and seed drying facilities
- Gravity separator
- Seed treatment equipment
- Conditioned storage

2. Land requirements

The land to be used for seed production must be free from volunteer plants including those of other *Allium* species.

3. Field standards

3.1 Isolation

The seed field shall be isolated from other flowering crop of onion by a minimum distance of 500 m between similar varieties and 1 000 m between distinctly different varieties.

3.2 Varietal purity

At least 98 percent of the *Allium* plants must conform to the characteristics of variety.

3.3 Species purity

There shall not be more than two percent of other crop species with similar seed size and other *Allium* species at flowering which cross with onion.

3.4 Weeds general

The seed field shall be reasonably free from weeds. Reasonably free means that weed growth shall not be such that it prevents a valid inspection of the onion plants.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standard for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

In the direct sown seed crop at least two inspections shall be made: first at the vegetative stage when varietal characteristics can best be observed and the second time at early flowering. Seed crops raised from bulbs shall be inspected three times: first before lifting of bulbs, second at the time of planting and a third time at early flowering.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field and the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each to be inspected separately.

4.2.2 In the field. The inspector will confirm that the onion plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will then be surveyed and an estimate made of weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other *Allium* species that cross with onion and other crop species with similar seed size will be counted separately. If either the number of off types or the number of other *Allium* species and other crop species with similar seed size exceeds three, the crop should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 97 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

ALLIUM CEPA L. – *ALLIACEAE*
ONION (HYBRID)

Parental material

For the production of onion hybrid seed it is required to obtain in-bred lines as Maintainer Seed. Other parental material must be at least of the standard of Quality Declared Seed.

1. Facilities and equipment

Recommended:
- Storage warehouse
- Packaging/weighing equipment
- Air screen cleaner

To be specified according to local needs:
- Water dipping and seed drying facilities
- Gravity separator
- Seed treatment equipment
- Conditioned storage

2. Land requirements

The land to be used for seed production shall be free from volunteer plants including those of other *Allium* species.

3. Field standards

3.1 Isolation

The seed field shall be isolated from other flowering crop of onion or related species by a minimum distance of 1 000 m.

3.2 Ratio of parents

Fields to produce hybrid onion seed shall be so planted that the male (pollen) parent plants are grown in separate rows from the female (seed) parent plants, and there must be no mixing of the two within the rows. There must be a sufficient number of male plants to provide the pollen required for the number of female rows.

3.3 Pollen shedders

At flowering, there shall not be more than 1 percent of the pollen bearing female plants which have shed or are shedding pollen.

3.4 Varietal purity

At least 98 percent of the plants of each parent must confirm to the characteristics of the respective parent.

3.5 Species purity

In seed parent population there shall not be more than two percent of other crop species with similar seed size and plants of other *Allium* species at flowering which cross with onion.

3.6 Weeds general

The seed field must be reasonably free from weeds. Reasonably free means that the weed growth shall not be such that it presents a valid inspection of onion seed crop.

3.7 Weeds specific

In addition, there shall not be more than the specified number of certain weed plants per unit area (this will be specified by each country according to local needs).

3.8 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.9 Other diseases

The seed field must be reasonably free from other diseases. Reasonably free means that the amount of disease should not be such as to prevent a valid assessment of varietal characteristics.

4. Field inspection

4.1 Number and timing

Fields to produce seed shall be inspected at least two times: the first during the vegetative stage when varietal characters of parental lines can best be observed. The second inspection shall be done during flowering. An additional inspection may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed (initial paragraph and 3.2) and the previous cropping of the field (paragraph 2). Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will examine plants from both male and female parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 3.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will then be surveyed and an estimate made of weed plants present and of the disease situation (paragraphs 3.6, 3.7, 3.8 and 3.9). During each inspection, the inspector will examine carefully 150 plants from the female and 150 plants from the male parent. The plants will be taken from five separate places (30 plants from each place), distributed at random in each of the male and female rows in equal number, the number of plants not conforming to the characteristics of the variety and the number of plants of other *Allium* species that cross with onion and other crop species with similar seed size in either the female or the male rows will be counted separately. If either the number of off-types or the number of other *Allium* crop species and crop species with similar seed size exceeds 3, the crop should be rejected (paragraphs 3.4 and 3.5). At inspection during flowering, the inspector will additionally carefully examine 300 plants in the female rows taken from five separate places (60 plants from each place) distributed at random in the female rows and count the number of plants which are shedding or have shed pollen. If the number of pollen bearing plants exceeds three, the seed field should be rejected (paragraph 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 97 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

ALLIUM PORRUM L. – *ALLIACEAE*
LEEK

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants, including those of other species of *Allium*.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of leek by a minimum distance of 300 m.

3.2 Varietal purity

At least 98 percent of the leek plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other *Allium* species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the leeks.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once in the vegetative stage and a second time at early flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field, the inspector will confirm that the leek plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other *Allium* species with similar seed size will be counted separately. If either the number of off-types or the number of other *Allium* species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 97 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

APIUM GRAVEOLENS L. VAR. *DULCE* – *UMBELLIFERAE*
CELERY

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants, including those of other species of *Apium*.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of celery by a minimum distance of 500 m.

3.2 Varietal purity

At least 98 percent of the celery plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other *Apium* species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the celery.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once in the vegetative stage and a second time at flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the celery plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other *Apium* species with similar seed size will be counted separately. If either the number of off types or the number of other *Apium* species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent
- Analytical purity 97 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

BETA VULGARIS L. SUBSP. *VULGARIS* (GROUP *CICLA*) – *CHENOPODIACEAE*
SWISS CHARD

Related species

The following will all inter-cross with swiss chard: beetroot, sugar beet, fodder beet and mangold.

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants, including those of related species (first paragraph).

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of swiss chard by a minimum distance of 500 m and from related species by a minimum of two km.

3.2 Varietal purity

At least 98 percent of the swiss chard plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of related species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the swiss chard.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once in the vegetative stage and the second time at flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the swiss chard plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of related species with similar seed size will be counted separately. If either the number of off-types or the number of related species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

BETA VULGARIS L. SUBSP. *VULGARIS* (GROUP *VULGARIS*) – *CHENOPODIACEAE* RED BEET

Related species

The following will inter-cross with beetroot: swiss chard, sugar beet, fodder beet or mangold.

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs: Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants, including those of related species (first paragraph).

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of beetroot of the same root type by a minimum distance of 1 000 m. The seed field shall also be isolated from related species by a minimum of two km.

3.2 Varietal purity

At least 98 percent of the beetroot plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of related species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds: reasonably free means that weed growth shall not be such that it prevents a valid inspection of the beetroot.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice; once in the vegetative stage and a second time at flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the beetroot plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field and count the number of plants not conforming to the characteristics of the variety; at each of the five places an additional 30 plants will be examined (150 in all) and the number of plants of related species with similar seed size will be counted in the total of 300 plants. If either the number of off-types in 150 plants or the number of related species in 300 plants exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent
- Analytical purity 95 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

BRASSICA OLERACEAE L. VAR. *BOTRYTIS* L. – *BRASSICACEAE*
CAULIFLOWER (OPEN POLLINATED)

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production must be free from volunteer plants including those of other *Brassica* crops belonging to the cole group.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other flowering crops of either cabbage or cauliflower and other *Brassica* crops of the cole group that freely cross with either cabbage or cauliflower by a minimum distance of 1 000 m.

3.2 Varietal purity

At least 98 percent of the cabbage or cauliflower plants must conform to the characteristics of the variety.

3.3 Species purity

There shall not be more than two percent of other crop species with similar seed size. There shall not be any plant of other varieties of *Brassica oleracea* species at flowering which freely cross with cabbage or cauliflower.

3.4 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such to prevent a valid inspection of the cauliflower seed crop.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once at the vegetative stage when varietal characteristics can be best observed and a second time at early flowering.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field and the variety which it is said to be and the previous cropping of the field (paragraph 2). Fields of more than five ha should be divided into areas of five ha maximum, each to be inspected separately.

4.2.2 In the field. The inspector will confirm that the cauliflower plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will then be surveyed and an estimate made of weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During the survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants. not conforming to the characteristics of the variety and the number of plants of other varieties of *Brassica* crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species with similar seed size exceeds three, or if there is any plant of other varieties of *Brassica oleracea* species at flowering that freely cross with cabbage or cauliflower, the crop should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

BRASSICA OLERACEAE L. VAR. *BOTRYTIS* L. – *BRASSICACEAE*
CAULIFLOWER (HYBRID)

1. Parental material

For the production of hybrid seed it is required to obtain maintainer seed of either one of the following as the parental lines.

1.1 Two approved self-incompatible but cross-compatible inbred lines.

1.2 Two approved inbred lines, one of which is maintained as a male-sterile line to be used as seed parent.

2. Facilities and equipment

Recommended:

- Storage warehouse
- Air/ screen cleaner
- Packaging/ weighing equipment

To be specified according to local needs:

- Gravity separator
- Drying equipment
- Seed treatment equipment

3. Land requirements

The land to be used for seed production must be free from volunteer plants including those of other *Brassica* crops belonging to Cole group.

4. Field standards

4.1 Isolation

The seed field shall be isolated from all other crops of cauliflower, cabbage and other *Brassica* crops of the Cole group that freely cross with these by a minimum distance of 1 500 m.

4.2 Varietal purity

At least 98 percent plants of each parent must conform to the characteristics of the variety.

4.3 Ratio of parents

A constant approved proportion of female to male parental line must be maintained throughout the field to provide sufficient pollen for the female plants.

4.4 Species purity

There shall not be more than two percent of other crop species with similar seed size. There shall not be any plant of other varieties of *Brassica oleracea* species at flowering which freely cross with the seed crop.

4.5 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the seed crop.

4.6 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

4.7 Seed-borne diseases

The seed field must be within the standard for seed-borne diseases specified by each country according to local needs.

4.8 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of varietal characteristics.

5. Field inspection

5.1 Number and timing

Fields to produce seed shall be inspected at least three times: once before flower stem development, the second during flowering and the third before harvesting.

5.2 Technique

5.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location, previous cropping of the seed field and the identities and proportions of the parents, of which it is said to be composed of. Fields of more than five ha should be divided into areas of maximum of five ha each, to be inspected separately.

5.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (4.3). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (4.1) is satisfied. The field will next be surveyed to estimate the weed and disease situation (4.5, 4.6 and 4.7). During each inspection the inspector will carefully examine 300 plants of the female and 300 plant of the male parent; these will be taken at random from five separate places (60 plants from each place). The number of plants not conforming to the characteristics of either parent will be counted separately, and if the number of off-types in either the female or male parent exceeds three (out to 300), the field should be rejected. If there is any plant of other varieties of *Brassica oleracea* species at flowering that can freely cross with it, the field should be rejected.

5.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

6. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following, if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

BRASSICA OLERACEAE L. VAR. *CAPITATA* L. – *BRASSICACEAE*
CABBAGE (OPEN POLLINATED)

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production must be free from volunteer plants including those of other *Brassica* crops belonging to the cole group.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other flowering crops of either cabbage or cauliflower and other *Brassica* crops of the cole group that freely cross with either cabbage or cauliflower by a minimum distance of 1 000 m.

3.2 Varietal purity

At least 98 percent of the cabbage or cauliflower plants must conform to the characteristics of the variety.

3.3 Species purity

There shall not be more than two percent of other crop species with similar seed size. There shall not be any plant of other varieties of *Brassica oleracea* species at flowering which freely cross with cabbage.

3.4 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such to prevent a valid inspection of the cabbage seed crop.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once at the vegetative stage when varietal characteristics can be best observed and a second time at early flowering.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field and the variety which it is said to be and the previous cropping of the field (paragraph 2). Fields of more than five ha should be divided into areas of five ha maximum, each to be inspected separately.

4.2.2 In the field. The inspector will confirm that the cabbage plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will then be surveyed and an estimate made of weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During the survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants. not conforming to the characteristics of the variety and the number of plants of other varieties of *Brassica* crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species with similar seed size exceeds three, or if there is any plant of other varieties of *Brassica oleracea* species at flowering that freely cross with cabbage or cauliflower, the crop should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

BRASSICA OLERACEAE L. VAR. *CAPITATA* L. – *BRASSICACEAE*
CABBAGE (HYBRID)

1. Parental material

For the production of hybrid seed it is required to obtain Maintainer seed of either one of the following as the parental lines.

1.1 Two approved self-incompatible but cross-compatible inbred lines.

1.2 Two approved inbred lines, one of which is maintained as a male-sterile line to be used as seed parent.

2. Facilities and equipment

Recommended:

- Storage warehouse
- Air/ screen cleaner
- Packaging/ weighing equipment

To be specified according to local needs:

- Gravity separator
- Drying equipment
- Seed treatment equipment

3. Land requirements

The land to be used for seed production must be free from volunteer plants including those of other *Brassica* crops belonging to Cole group.

4. Field standards

4.1 Isolation

The seed field shall be isolated from all other crops of cauliflower, cabbage and other *Brassica* crops of the Cole group that freely cross with these by a minimum distance of 1 500 m.

4.2 Varietal purity

At least 98 percent plants of each parent must conform to the characteristics of the variety.

4.3 Ratio of parents

A constant approved proportion of female to male parental line must be maintained throughout the field to provide sufficient pollen for the female plants.

4.4 Species purity

There shall not be more than two percent of other crop species with similar seed size. There shall not be any plant of other varieties of *Brassica oleracea* species at flowering which freely cross with the seed crop.

4.5 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the seed crop.

4.6 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

4.7 Seed-borne diseases

The seed field must be within the standard for seed-borne diseases specified by each country according to local needs.

4.8 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of varietal characteristics.

5. Field inspection

5.1 Number and timing

Fields to produce seed shall be inspected at least three times: once before flower stem development, the second during flowering and the third before harvesting.

5.2 Technique

5.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location, previous cropping of the seed field and the identities and proportions of the parents, of which it is said to be composed of. Fields of more than five ha should be divided into areas of maximum of five ha each, to be inspected separately.

5.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (4.3). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (4.1) is satisfied. The field will next be surveyed to estimate the weed and disease situation (4.5, 4.6 and 4.7). During each inspection the inspector will carefully examine 300 plants of the female and 300 plant of the male parent; these will be taken at random from five separate places (60 plants from each place). The number of plants not conforming to the characteristics of either parent will be counted separately, and if the number of off-types in either the female or male parent exceeds three (out to 300), the field should be rejected. If there is any plant of other varieties of *Brassica oleracea* species at flowering that can freely cross with it, the field should be rejected.

5.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

6. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following, if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

BRASSICA RAPA L. SUBSP. *CHINENSIS* (L.) HANELT – *BRASSICACEAE*
CHINESE CABBAGE

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Gravity separator
- Drying equipment
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants, including those of other crops of turnip and swede group.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other crops of chinese cabbage and crops of turnip and swede that freely cross with chinese cabbage by a minimum distance of 1 000 m.

3.2 Varietal purity

At least 98 percent of the chinese cabbage plants must conform to the characteristics of the variety.

3.3 Species purity

There shall not be more than two percent of other crop species with similar seed size. There shall not be any plant of turnip and swede, which freely cross with chinese cabbage.

3.4 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the chinese cabbage seed crop.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standard for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once in vegetative stage when varietal characteristics can be best observed and a second time at early flowering.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field and the variety which it is said to be and the previous cropping of the field (paragraph 2). Fields of more than five ha should be divided into areas of five ha maximum, each to be inspected separately.

4.2.2 In the field. The inspector will confirm that the chinese cabbage plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will then be surveyed and an estimate made of weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During the survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other crops with similar seed size will be counted separately. If either the number of off-types or the number of other crop species with similar seed size exceeds three, or if there is any flowering plant of turnip, swede or other plant that freely crosses with chinese cabbage, the crop should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent
- Analytical purity 95 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

BRASSICA RAPA L. SUBSP. *RAPA* – *BRASSICACEAE*
TURNIP

Related species

The following will inter-cross with *Brassica juncea*, *B. napus*, *B. nigra* and *B. rapa* (including subsp. *campestris* and *chinensis*)

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Spiral separator
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants, including those of other *Brassica* species.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of turnip or related species by a minimum distance of 1 000 m.

3.2 Varietal purity

At least 98 percent of the turnip plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other cruciferous species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the turnips.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once in the vegetative stage and a second time at flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than 10 ha should be divided into areas of 10 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the turnip plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 4.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 4.4, 4.5, 4.6 and 4.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other *Brassicaceae* species with similar seed size will be counted separately. If either the number of off-types or the number of other *Brassicaceae* species exceeds three, the field should be rejected (paragraphs 4.2 and 4.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

CAPSICUM ANNUUM L., *C. FRUTESCENS* L. – *SOLANACEAE*
PEPPER AND CHILLI (OPEN POLLINATED)

1. Facilities and Equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of pepper or chilli by a minimum distance of 200 m.

3.2 Varietal purity

At least 98 percent of the plants must conform to the characteristics of the variety. There must be no plants of chilli in a field of pepper and vice versa.

3.3 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the pepper or chilli plants.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once before flowering and the second time at maturity of first fruits. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than 1 ha should be divided into areas of 1 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the pepper or chilli plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted and if the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 65 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

CITRULLUS LANATUS (THUNB.) MATSUM. & NAKAI – *CUCURBITACEAE* WATERMELON (OPEN POLLINATED)

I. Facilities and Equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of watermelon by a minimum distance of 500 m.

3.2 Varietal purity

At least 98 percent of the watermelon plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the watermelons.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once before flowering and the second time at early fruiting. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the watermelon plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted and if the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

CITRULLUS LANATUS (THUNB.) MATSUM. & NAKAI – *CUCURBITACEAE* WATERMELON (HYBRID)

Parental material

For the production of hybrid seed it is required to obtain the parental lines as Maintainer's Seed.

1. Facilities and equipment

Recommended:

- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirement

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of watermelon or parent lines and of semi-wild populations of watermelon, including *Citrullus colocynthis,* by a distance of 1 000 meters.

3.2 Ratio of parents

Fields to produce hybrid watermelon seed shall be so planted that the male (pollen) parent plants are grown in separate rows from the female (seed) parent plants and there must be no mixing of the two within the rows. There must be a sufficient number of male plants to provide the pollen required for the number of female plants.

3.3 Emasculation

At flowering, no more than 1 percent of the female plants shall bear inflorescences which have shed or are shedding pollen.

3.4 Varietal purity

At least 99 percent of the male and female parent must conform to the characteristics of the respective parent.

3.5 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the watermelon plants.

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least three times; the first before flowering; the second during flowering and the third at early fruiting, when varietal characteristics can best be observed. Additional inspections may be needed to check emasculation and/or continued male sterility of the female parent during flowering or when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 3.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 3.5, 3.6 and 3.7). During each inspection the inspector will examine carefully 300 plants from the female parent taken at random from five separate places (60 plants at each place) and count the number of plants not conforming to the characteristics of the parent. If this number exceeds three, the field should be rejected. At inspections during flowering, the inspector will additionally carefully examine 300 plants in the female parent taken from five separate places distributed at random in the field (60 plants from each place) and count the number of plants which have shed or are shedding pollen; if this number exceeds three, the field should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 70 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

CUCUMIS MELO L. – *CUCURBITACEAE*
MELON (OPEN POLLINATED)

1. Facilities and Equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of melon by a minimum distance of 500 m.

3.2 Varietal purity

At least 98 percent of the melon plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the melons.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once before flowering and the second time at early fruiting. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the melon plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted and if the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

CUCUMIS MELO L. – *CUCURBITACEAE*
MELON (HYBRID)

Parental material

For the production of hybrid seed it is required to obtain the parental lines as Maintainer's Seed.

1. Facilities and equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of melon or parent lines by a distance of 1 000 m.

3.2 Ratio of parents

Fields to produce hybrid melon seed shall be so planted that the male (pollen) parent plants are grown in separate rows from the female (seed) parent plants and there must be no mixing of the two within the rows. There must be a sufficient number of male plants to provide the pollen required for the number of female plants.

3.3 Emasculation

At flowering, no more than 1 percent of the female plants shall bear inflorescences which have shed or are shedding pollen.

3.4 Varietal purity

At least 99 percent or the female parent and 99 percent of the male parent must conform to the characteristics of the respective parent.

3.5 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the melon plants.

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means

that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least three times; the first before flowering, the second during flowering and the third at early fruiting when varietal characteristics can best be observed. Additional inspections may be needed to check emasculation and/or continued male sterility of the female parent during flowering or when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed (see the first paragraph and 3.2) and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 3.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 3.5, 3.6 and 3.7). During each inspection, the inspector will examine carefully 300 plants from the female parent taken at random from five separate places (60 plants at each place) and count the number not conforming to the characteristics of the parent; if this number exceeds 3, the field should be rejected. At inspections during flowering the inspector will additionally carefully examine 300 plants in the female parent taken from five separate places distributed at random in the field (60 plants from each place) and count the number of plants which have shed or are shedding pollen; if this number exceeds three, the field should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent
- Analytical purity 98 percent
- Varietal purity 99 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

CUCUMIS SATIVUS L. – *CUCURBITACEAE*
CUCUMBER (OPEN POLLINATED)

1. Facilities and Equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of cucumber by a minimum distance of 500 m.

3.2 Varietal purity

At least 98 percent of the cucumber plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the cucumbers.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once before flowering and the second time at early fruiting. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the cucumber plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted and if the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following, if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

CUCUMIS SATIVUS L. – *CUCURBITACEAE*
CUCUMBER (HYBRID)

Parental material

For the production of hybrid seed, it is required to obtain the parental lines as Maintainer's Seed.

1. Facilities and Equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment.

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirement

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of cucumber or parent lines by a distance of 1 000 m.

3.2 Ratio of parents

Fields to produce hybrid cucumber seed shall be so planted that the male (pollen) parent plants are grown in separate rows from the female (seed) parent plants and there must be no mixing of the two in the rows. There must be a sufficient number of male plants to provide the pollen required for the number of female plants.

3.3 Emasculation

At flowering, no more than 1 percent of the female plants shall bear inflorescences which have shed or are shedding pollen.

3.4 Varietal purity

At least 99 percent of the female parent and 99 percent of the male parent must conform to the characteristics of the respective parent.

3.5 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the cucumber plants.

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least three times; the first before flowering; the second during flowering and the third at early fruiting when varietal characteristics can best be observed. Additional inspections may be needed to check emasculation and/or continued male sterility of the female parent during flowering or when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraphs 3.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 3.5, 3.6 and 3.7). During each inspection, the inspector will examine carefully 300 plants from each of the parent taken at random from five separate places (60 plants at each place) and count the number of plants not conforming to the characteristics of the parent; if this number exceeds 3, the field should be rejected. The inspector will also examine carefully 300 plants of the female parent taken at random from five separate places (60 plants at each place) and count the number of plants which have shed or are shedding pollen; if this number exceeds three, the field should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

CUCURBITA ARGYROSPERMA C. HUBER, C. *MAXIMA* DUCHESNE, C. *MOSCHATA* DUCHESNE, C. *PEPO* L. – *CUCURBITACEAE*

SQUASH (OPEN POLLINATED)

1. Facilities and Equipment

Recommended:

- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of squash by a minimum distance of 500 m.

3.2 Varietal purity

At least 98 percent of the squash plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the squash.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once before flowering and the second time at early fruiting. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the squash plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted and if the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

CUCURBITA ARGYROSPERMA C. HUBER, *C. MAXIMA* DUCHESNE, *C. MOSCHATA* DUCHESNE, *C. PEPO* L. – *CUCURBITACEAE*

SQUASH (HYBRID)

Parental material

For the production of hybrid seed it is required to obtain the parental lines as Maintainer's Seed.

1. Facilities and equipment

Recommended:

- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:

- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirement

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of squash or parent lines by a distance of 1 000m.

3.2 Ratio of parents

Fields to produce hybrid squash seed shall be so planted that the male (pollen) plants are grown in separate rows from the female (seed) parent plants and there must be no mixing of the two within the rows. There must be a sufficient number of male plants to provide the pollen required for the number of female plants.

3.3 Emasculation

At flowering, no more than 1 percent of the female plants shall bear inflorescences which have shed or are shedding pollen.

3.4 Varietal purity

At least 99 percent of the female parent and 99 percent of the male parent must conform to the characteristics of the respective parent.

3.5 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the squash plants.

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: the first during flowering and the second at early fruiting when varietal characteristics can best be observed. Additional inspections may be needed to check emasculation and/or continued male sterility of the female parent during flowering or when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed (Parental material in first paragraph and 4.2) and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 3.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 3.5, 3.6 and 3.7). During each inspection, the inspector will examine carefully 300 plants from the female parent taken at random from five separate places (60 plants at each place) and count the number not conforming to the characteristics of the parent; if this number exceeds 3, the field should be rejected. At inspections during flowering, the inspector will additionally carefully examine 300 plants in the female parent taken from five separate places distributed at random in the field (60 plants from each place) and count the number of plants which have shed or are shedding pollen; if this number exceeds three, the field should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

DAUCUS CAROTA L. – *UMBELLIFERAE*
CARROT

1. Facilities and Equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Debearder
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed and steckling production must be free from volunteer plants.

3. Field standards

3.1 Isolation

Fields to produce stecklings shall be isolated from other varieties of carrot by a distance of five m. The seed crop shall be isolated from other flowering crops of carrot by a minimum distance of 1 000 m.

3.2 Varietal purity

At least 98 percent of the plants of steckling production and seed field must conform to the characteristics of the variety.

3.3 Species purity

There shall not be more than two percent of other crop species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the carrot plants.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standard for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of varietal characteristics.

4. Field inspections

4.1 Number and timing

The direct sown seed crop shall be inspected at least twice: first during the vegetative stage when varietal characteristics can be best observed and a second time at flowering.

Seed crops raised from seedlings should be inspected three times. Two inspections shall be conducted in the crop raised for seedlings production. First during the vegetative stage when varietal characteristics can best be observed and the second time just before lifting the seedlings. The third inspection shall be done at early flowering.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field and the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the carrot plants generally conform to the characteristics of the variety, and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will then be surveyed and an estimate made of weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During the survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species with similar seed size exceeds three, the crop should be rejected.

4.2.3 An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 97 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

LACTUCA SATIVA L. – *ASTERACEAE*
LETTUCE

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of lettuce or other species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the lettuce plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the lettuce.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once in the vegetative stage and a second time at flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the lettuce plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other species with similar seed size will be counted separately. If either the number of off-types or the number of other species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 65 percent minimum
- Analytical purity 97 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

LAGENARIA SICERARIA (MOLINA) STANDL. – *CUCURBITACEAE*
BOTTLE GOURD (OPEN POLLINATED)

1. Facilities and equipment

Recommended:
- Storage warehouse
- Seed extraction equipment
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs :
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirement

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of the same species by a distance of 500 m.

3.2 Varietal purity

At least 98 percent of the gourd plants must conform to the characteristics of variety.

3.3 Weed general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the gourd plants.

3.4 Weed specific

There shall not be more than the specified number of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free form other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least thrice : the first before flowering, the second during flowering and the third at early fruiting. Additional inspection may be needed when there are particular problem.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that gourd plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraph 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted and if the number of off-types exceeds 3, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing :

- Germination 60 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following; if specified by each country according to local needs:

- Weed/other crop seed per unit weight
- Moisture content
- Seed-borne diseases

LAGENARIA SICERARIA (MOLINA) STANDL. – *CUCURBITACEAE*
BOTTLE GOURD (HYBRID)

Parental material

For the production of hybrid seed it is required to obtain the parental lines as Maintainers seed.

1. Facilities and equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirement

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of the same species or of the varieties or parental lines of the same hybrid not conforming to the standards of the Maintainer seed by a distance of 1 000 m.

3.2 Ratio of parents

Fields to produce hybrid gourd seed shall be so planted that the male (pollen) plants are grown in separate rows from the female (seed) parent plants and there must be no mixing of the two within the rowsThere must be a sufficient number of male plants to provide the pollen required for the number of female plants.

3.3 Emasculation

At flowering, no more than 1 percent of the female plants shall bear inflorescences which have shed or are shedding pollen.

3.4 Varietal purity

At least 99 percent of the female parent and 99 percent of the male parent must conform to the characteristics of the respective parent.

3.5 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the gourd plants.

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least three times: the first before flowering, the second during flowering and the third at early fruiting when varietal characteristics can best be observed. Additional inspection may be needed to check emasculation and/or continued male sterility of the female parent during flowering or when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportion of the parents of which it is said to be composed (paragraphs 1 and 3.2) and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 3.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraph 3.5, 3.6 and 3.7). During each inspection, the inspector will examine carefully 300 plants each from the female and male parents taken at random from five separate places (60 plants at each place) and count the number not conforming to the characteristics of the parent; if this number exceeds 3, the field should be rejected. At inspections during flowering, the inspector will additionally carefully examine 300 plants in the female parent taken from five separate places distributed at random in the field (60 plants from each place) and count the number of plants which have shed or are shedding pollen; if this number exceeds three, the field should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing :

- Germination 60 percent
- Analytical purity 98 percent
- Varietal purity 99 percent

and to the following; if specified by each country according to local needs:

- Weed/other crop seed per unit weight
- Moisture content
- Seed-borne diseases

LYCOPERSICON ESCULENTUM MILL. – *SOLANACEAE*
TOMATO (OPEN POLLINATED)

1. Facilities and Equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of tomato by a distance adequate to prevent mechanical mixture or a physical barrier (ditch, hedge, fence etc.).

3.2 Varietal purity

At least 98 percent of the tomato plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the tomatoes.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once at flowering and the second time at maturity of first fruits. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than two ha should be divided into areas of two ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the tomato plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted and if the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

➢ Germination	65 percent (humid tropics)
	75 percent (elsewhere)
➢ Analytical purity	98 percent
➢ Varietal purity	98 percent

and to the following if specified by each country according to local needs:

- ➢ Weed/other crop seeds per unit weight
- ➢ Moisture content
- ➢ Seed-borne diseases

LYCOPERSICON ESCULENTUM MILL. – *SOLANACEAE*
TOMATO (HYBRID)

Parental material

For the production of hybrid seed it is required to obtain the parental lines as Maintainer's Seed.

1. Facilities and equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirement

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of tomato or parent lines by a distance of 10 m or a physical barrier (ditch, hedge, fence, etc.).

3.2 Ratio of parents

Fields to produce hybrid tomato seed shall be so planted that the male (pollen) parent plants are grown separately from the female (seed) parent plants and there must be a sufficient number of male plants to provide the pollen required for the number of female plants.

3.3 Emasculation

At flowering, no more than 1 percent of the female plants shall bear inflorescences which have shed or are shedding pollen.

3.4 Varietal purity

At least 99 percent of the female parent and 99 percent of the male parent must conform to the characteristics of the respective parent.

3.5 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the tomato plants.

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice; the first during flowering and the second at maturity of first fruits when varietal characteristics can best be observed. Additional inspections may be needed to check emasculation of the female parent during flowering or when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed (first paragraph and 3.2) and the previous cropping of the field. Fields of more than 1 ha should be divided into areas of 1 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 3.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 3.5, 3.6 and 3.7). During each inspection, the inspector will examine carefully 300 plants from the female parent taken at random from five separate places (60 plants at each place) and count the number of plants not conforming to the characteristics of the parent; if this number exceeds 3, the field should be rejected. At inspections during flowering, the inspector will additionally carefully examine 300 plants in the female parent taken from five separate places distributed at random in the field (60 plants at each place) and count the number of plants which have not been properly emasculated; if this number exceeds three, the field should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination — 65 percent (humid tropics); 75 percent (elsewhere)
- Analytical purity — 98 percent
- Varietal purity — 99 percent

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

MOMORDICA CHARANTIA L. – *CUCURBITACEAE*
BITTER GOURD (OPEN POLLINATED)

1. Facilities and equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/ screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirement

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of the same species by a distance of 500 m.

3.2 Varietal purity

At least 98 percent of the gourd plants must conform to the characteristics of variety.

3.3 Weed general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the gourd plants.

3.4 Weed specific

There shall not be more than the specified number of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free form other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least thrice: the first before flowering, the second during flowering and the third at early fruiting. Additional inspection may be needed when there are particular problem.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that gourd plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraph 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted and if the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent
- Analytical purity 98 percent
- Varietal purity 98 percent

and to the following; if specified by each country according to local needs:

- Weed/other crop seed per unit weight
- Moisture content
- Seed-borne diseases

MOMORDICA CHARANTIA L. – *CUCURBITACEAE*
BITTER GOURD (HYBRID)

Parental material

For the production of hybrid seed it is required to obtain the parental lines as Maintainers seed.

1. Facilities and equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirement

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of the same species or of the varieties or parental lines of the same hybrid not conforming to the standards of the Maintainer seed by a distance of 1 000 m.

3.2 Ratio of parents

Fields to produce hybrid gourd seed shall be so planted that the male (pollen) plants are grown in separate rows from the female (seed) parent plants and there must be no mixing of the two within the rows. There must be a sufficient number of male plants to provide the pollen required for the number of female plants.

3.3 Emasculation

At flowering, no more than 1 percent of the female plants shall bear inflorescences which have shed or are shedding pollen.

3.4 Varietal purity

At least 99 percent of the female parent and 99 percent of the male parent must conform to the characteristics of the respective parent.

3.5 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the gourd plants.

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least three times: the first before flowering, the second during flowering and the third at early fruiting when varietal characteristics can best be observed. Additional inspection may be needed to check emasculation and/or continued male sterility of the female parent during flowering or when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportion of the parents of which it is said to be composed (paragraphs 3.1 and 3.2) and the previous cropping of the field. Fields of more than 5 ha should be divided into areas of 5 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 3.2). The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraph 3.5, 3.6 and 3.7). During each inspection, the inspector will examine carefully 300 plants each from the female and male parents taken at random from 5 separate places (60 plants at each place) and count the number not conforming to the characteristics of the parent; if this number exceeds 3, the field should be rejected. At inspections during flowering, the inspector will additionally carefully examine 300 plants in the female parent taken from 5 separate places distributed at random in the field (60 plants from each place) and count the number of plants which have shed or are shedding pollen; if this number exceeds three, the field should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent
- Analytical purity 98 percent
- Varietal purity 99 percent

and to the following; if specified by each country according to local needs:

- Weed/other crop seed per unit weight
- Moisture content
- Seed-borne diseases

PETROSELINUM CRISPUM (MILL.) NYMAN EX A. W. HILL – *UMBELLIFERAE*
PARSLEY

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of parsley with the same leaf type by a minimum distance of 500 m and by a distance of 1 000 m from fields of parsley of a different leaf type.

3.2 Varietal purity

At least 98 percent of the parsley plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other umbelliferous species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the parsley.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once in the vegetative stage and a second time at the start of flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the parsley plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other umbelliferous species with similar seed size will be counted separately. If either the number of off-types or the number of other umbelliferous species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 55 percent minimum
- Analytical purity 95 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

RAPHANUS SATIVUS L. – *BRASSICACEAE*
RADISH

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Spiral separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed and seedling production must be free from volunteer plants.

3. Field Standards

3.1 Isolation

Fields to produce seedlings shall be isolated from other varieties of radish by five m to avoid mechanical admixture. Seed crop shall be isolated from other flowering crops of radish by a minimum distance of 1 000 m.

3.2 Varietal purity

At 98 percent of the plants of seedling production and seed fields must conform to the characteristics of variety.

3.3 Species purity

There shall not be more than two percent of other crop species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the radish plants.

3.5 Weed specific

There shall not be more than the specified number of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standard for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of disease should not be such as to prevent a valid assessment of varietal characteristics.

4. Field inspection

4.1 Number and timing

The direct sown seed crop shall be inspected at least twice: first at the vegetative stage when varietal characteristics can best be observed and a second time at early flowering. Seed crops raised from seedlings should be inspected three times. Three inspections shall be conducted in the crop raised for seedling production; first during the vegetative stage when varietal characteristics can best be observed and a second time just before lifting of seedlings. The third inspection at the start of flowering.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field and the variety which it is said to be and the previous cropping of the field (paragraph 2). Fields of more than five ha should be divided into areas of five ha maximum, each to be inspected separately.

4.2.2 In the field. The inspector will confirm that the radish plants generally conform to the characteristics of the variety, and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will then be surveyed and an estimate made of weed plants present and of disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During the survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other crop species with similar seed size will be counted separately. If either the number of off-types or the number of other crop species with similar seed size exceeds three, the crop should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 75 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

SOLANUM MELONGENA L. – *SOLANACEAE*
EGGPLANT

1. Facilities and Equipment

Recommended:
- Seed extraction equipment
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of eggplant by a minimum distance of 200 m.

3.2 Varietal purity

At least 98 percent of the plants must conform to the characteristics of the variety.

3.3 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the eggplants.

3.4 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.5 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.6 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: once before flowering and the second time at maturity of first fruits. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than 5 ha should be divided into areas of 5 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will confirm that the eggplant plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.3, 3.4, 3.5 and 3.6). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety will be counted and if the number of off-types exceeds three, the field should be rejected (paragraph 3.2).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 98 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

SPINACIA OLERACEA L. – *CHENOPODIACEAE*
SPINACH (OPEN POLLINATED)

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of spinach or other species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence etc.).

3.2 Varietal purity

At least 98 percent of the spinach plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than two percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the New Zealand spinach.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice; once in the vegetative stage and a second time at flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than five ha should be divided into areas of five ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will-confirm that the New Zealand spinach plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the insolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other species with similar seed size will be counted separately. If either the number of off-types or the number of other species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 97 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

SPINACIA OLERACEA L. – *CHENOPODIACEAE*
SPINACH (HYBRID)

Parental material

For the production of hybrid seed, it is required to obtain the parental lines as Maintainer's Seed.

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of spinach or parent lines with the same leaf type by a minimum distance of 500 m and from other fields of spinach or parent lines with different leaf type by a distance of 1 000 m.

3.2 Ratio of parents

Fields to produce hybrid spinach seed shall be so planted that the male (pollen) parent plants are grown in separate rows from the female (seed) parent plants and there must be no mixing of the two in the rows. There must be a sufficient number of male plants to provide the pollen required for the number of female plants.

3.3 Emasculation

At flowering, no more than 1 percent of the female plants shall bear inflorescences which have shed or are shedding pollen.

3.4 Varietal purity

At least 98 percent of the female parent and 98 percent of the male parent must conform to the characteristics of the respective parent.

3.5 Species purity

There shall not be more than 2 percent of other crop species with similar seed size.

3.6 Weeds general

The seed field must be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the spinach plants.

3.7 Weeds specific

In addition there shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs) .

3.8 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.9 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice: the first during flowering and the second at early seed development, when varietal characteristics can best be observed. Additional inspections may be needed to check male sterility of the female parent during flowering or when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the identities and proportions of the parents of which it is said to be composed (3.1 paragraphs and 3.2) and the previous cropping of the field. Fields of more than 5 ha should be divided into areas of 5 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will examine plants from both parents to confirm that they conform to the characteristics of the parents said to have been used and that the proportions have been correctly established (paragraph 3.2) The inspector will then examine the boundaries of the field to confirm that the isolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weeds present and of the disease situation (paragraphs 3.6, 3.7, 3.8 and 3.9). During each inspection, the inspector will examine carefully 150 plants from the female parent taken at random from 5 separate places (30 plants at each place) and count the number of plants not conforming to the characteristics of the parent and the number of other species with similar seed size; if either of these numbers exceeds 3, the field should be rejected. The inspector will also examine carefully 150 plants of the male parent taken at random from 5 separate places (30 plants at each place) and count the number not conforming to the characteristics of the parent and the number of other species with similar seed size; if either of these numbers exceeds 3, the field should be rejected. At inspections during flowering, the inspector will additionally carefully examine 150 plants in the female parent taken from 5 separate places distributed at random in the field (30 plants from each place) and count the number of plants which have shed or are shedding pollen; if this number exceeds three, the field should be rejected.

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 97 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

TETRAGONIA TETRAGONOIDES (PALL.) KUNTZE – *AIZOACEAE*
NEW ZEALAND SPINACH

1. Facilities and equipment

Recommended:
- Storage warehouse
- Air/screen cleaner
- Packaging/weighing equipment

To be specified according to local needs:
- Drying equipment
- Gravity separator
- Seed treatment equipment

2. Land requirements

The land to be used for seed production shall be free from volunteer plants.

3. Field standards

3.1 Isolation

The seed field shall be isolated from all other fields of spinach or other species with similar seed size by a distance adequate to prevent mechanical mixture or by a physical barrier (ditch, hedge, fence, etc.).

3.2 Varietal purity

At least 98 percent of the spinach plants must conform to the characteristics of the variety.

3.3 Species purity

There shall be not more than 2 percent of other species with similar seed size.

3.4 Weeds general

The seed field shall be reasonably free from weeds; reasonably free means that weed growth shall not be such that it prevents a valid inspection of the New Zealand spinach.

3.5 Weeds specific

There shall not be more than the specified numbers of certain weed plants per unit area (this will be specified by each country according to local needs).

3.6 Seed-borne diseases

The seed field must be within the standards for seed-borne diseases specified by each country according to local needs.

3.7 Other diseases

The seed field must be reasonably free from other diseases; reasonably free means that the amount of diseases should not be such as to prevent a valid assessment of the varietal characteristics.

4. Field inspections

4.1 Number and timing

Fields to produce seed shall be inspected at least twice; once in the vegetative stage and a second time at flowering. Additional inspections may be needed when there are particular problems.

4.2 Technique

4.2.1 Before entering the field. The inspector will confirm with the seed grower the exact location of the seed field, the variety which it is said to be and the previous cropping of the field. Fields of more than 5 ha should be divided into areas of 5 ha maximum each, to be inspected separately.

4.2.2 In the field. The inspector will-confirm that the New Zealand spinach plants generally conform to the characteristics of the variety and will then examine the boundaries of the field to confirm that the insolation requirement (paragraph 3.1) is satisfied. The field generally will next be surveyed and an estimate made of the weed plants present and of the disease situation (paragraphs 3.4, 3.5, 3.6 and 3.7). During this survey, the inspector will examine carefully 150 plants taken at random, 30 at each of five separate places in the field; the number of plants not conforming to the characteristics of the variety and the number of plants of other species with similar seed size will be counted separately. If either the number of off-types or the number of other species exceeds three, the field should be rejected (paragraphs 3.2 and 3.3).

4.2.3 After inspection. An inspection report will be completed and a decision made either to accept or reject the field or to recommend further remedial action before a final decision is taken.

5. Seed quality standards

The seed must conform to the following as assessed using the national rules for seed testing:

- Germination 60 percent minimum
- Analytical purity 97 percent minimum
- Varietal purity 98 percent minimum

and to the following if specified by each country according to local needs:

- Weed/other crop seeds per unit weight
- Moisture content
- Seed-borne diseases

Annex 1

Agenda

Monday – 5 May			
	Registration		
	Opening	Plant Production and Protection Division	Mahmoud Solh
		Seed and Plant Genetic Resources Service	Arturo Martinez
	Adoption of Agenda and Timetable		
	Election of Chairperson, Vice-chairperson and Rapporteur		
	Quality Declared Seed	Seed and Plant Genetic Resources Service	Michael Larinde
	Background and Summary of Contributions	Seed and Plant Genetic Resources Service - Consultant	Cadmo Rosell
	Presentation of individual papers		Experts
Tuesday – 6 May			
	Technical inputs – crops		Experts
	Technical inputs – Seed Quality Attributes		Experts
	Technical inputs – GMO		Experts
	Preparation of draft groups reports		Experts
Wednesday – 7 May			
	Discussions on draft report		Experts
	Final discussions		Experts
	Adoption of report		Experts
	Closing ceremony		

Annex 2

List of participants

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Mr Michael Turner
Visiting Professor/Seed Technology Consultant
Iowa State University
United States of America

Also present on Tuesday 6 May

Mr S. B. Mathur
Danish Institute for Seed Pathology for Developing Countries
DK-2900, Hellerup
Denmark

Annex 3

Quality declared seed standards

SUMMARY

	Varietal purity (min. %)	Analytical purity (min. %)	Germination (min. %)	Moisture content (max. %)*
Cereals and pseudocereals				
Amaranthus caudatus	98	95	60	13
Avena sativa	98	98	80	13
Hordeum vulgare	98	98	80	13
Oryza sativa (OP)	98	98	75	13
Oryza sativa (H)	98	98	75	13
Pennisetum glaucum (OP)	98	98	70	13
Pennisetum glaucum (H)	98	98	70	13
Secale cereale	98	96	70	13
Sorghum bicolor (OP)	98	98	70	13
Sorghum bicolor (H)	98	98	70	13
Triticum aestivum	98	98	80	13
Triticum turgidum subsp. *durum*	98	98	80	13
Zea mays (OP)	98	98	80	13
Zea mays (H)	98	98	80	13
Food legumes				
Cajanus cajan	98	98	70	10
Cicer arietinum	98	98	75	10
Lens culinaris	98	98	70	10
Phaseolus spp.	98	98	60	10
Pisum sativum	98	98	75	10
Vicia faba	98	98	70	10
Vigna radiata	98	98	75	10
Vigna unguiculata	98	98	75	10
Oil crops				
Arachis hypogaea	98	98	60	10
Brassica napus	98	98	85	10
Brassica nigra	98	98	85	10
Glycine max	98	98	65 (humid tropics) 70 (elsewhere)	10
Helianthus annuus (OP)	98	98	70	10
Helianthus annuus (H)	98	98	70	10
Sesamum indicum	98	98	60	10
Forage crops – *Poaceae*				
Andropogon gayanus		50	10	10
Bothriochloa insculpta		30	10	10
Bromus catharticus		95	75	10
Cenchrus ciliaris		90	20	10
Chloris gayana		85 (diploids) 75 (tetraploids)	20 (diploids) 10 (tetraploids)	10
Dactylis glomerata		80	70	10
Eragrostis curvula		60	60	10
Festuca arundinacea		95	75	10
Lolium multiflorum		95	75	10

* Maximum moisture content recommended for safe storage. These values may vary according to local conditions, in particular with environmental relative humidity and temperature. Local standards should be applied.

	Varietal purity (min. %)	Analytical purity (min. %)	Germination (min. %)	Moisture content (max. %)*
Megathyrsus maximus (= *Panicum maximum)*		75	70	10
Panicum coloratum		80	20	10
Paspalum dilatatum		60	60	10
Pennisetum clandestinum		90	60	10
Setaria incrassata (formerly *S. porphyrantha*)		95	10	10
Setaria sphacelata		60	20	10
Urochloa decumbens (= *Brachiaria decumbens*)		50	15	10
Urochloa humidicola (=*Brachiaria humidicola*)		50	15	10
Forages – *Fabaceae*				
Calopogonium mucunoides		95	50	10
Centrosema pubescens		98	50	10
Desmodium uncinatum		94	70	10
Lablab purpureus		94	75	10
Lotononis bainesii		93	50	10
Lotus corniculatus		95	75	10
Medicago arabica	98	95	80	10
Medicago sativa	98	98	80	10
Medicago scutellata	98	95	80	10
Medicago truncatula	98	95	80	10
Pueraria phaseoloides		95	50	10
Stylosanthes spp.		90	60	10
Trifolium alexandrinum	98	95	80	10
Trifolium fragiferum	98	95	80	10
Trifolium incarnatum	98	95	80	10
Trifolium pratense	98	95	80	10
Trifolium repens	98	95	80	10
Trifolium resupinatum	98	95	80	10
Trifolium semipilosum		96.5	60	10
Trifolium subterraneum	98	95	80	10
Vicia sativa	98	96	80	10
Industrial crops				
Gossypium hirsutum (OP)	98	98	60	10
Gossypium hirsutum (H)	90	98	70	10
Ricinus communis	98	98	70	10
Vegetables				
Abelmoschus esculentus	98	98	65	8
Allium cepa (OP)	98	97	60	8
Allium cepa (H)	98	97	60	8
Allium porrum	98	97	60	8
Apium graveolens	98	97	60	8
Beta vulgaris subsp. *vulgaris* (group *cicla*)	98	95	60	8
Beta vulgaris subsp. *vulgaris* (group *vulgaris*)	98	95	60	8
Brassica oleracea var. botrytis (OP)	98	98	70	8
Brassica oleracea var. *botrytis* (H)	98	98	70	8
Brassica oleracea var. *capitata* (OP)	98	98	70	8
Brassica oleracea var. *capitata* (H)	98	98	70	8
Brassica rapa subsp. *chinensis*	98	95	60	8
Brassica rapa subsp. *rapa*	98	98	70	8

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	Varietal purity (min. %)	Analytical purity (min. %)	Germination (min. %)	Moisture content (max. %)*
Capsicum annuum (OP)	98	98	65	8
Capsicum annuum (H)	98	98	65	8
Capsicum frutescens (OP)	98	98	65	8
Capsicum frutescens (H)	98	98	65	8
Citrullus lanatus (OP)	98	98	70	8
Citrullus lanatus (H)	98	98	70	8
Cucumis melo (OP)	98	98	60	8
Cucumis melo (H)	98	98	60	8
Cucumis sativus (OP)	98	98	60	8
Cucumis sativus (H)	98	98	60	8
Cucurbita argyrosperma (OP)	98	98	60	8
Cucurbita argyrosperma (H)	98	98	60	8
Cucurbita maxima (OP)	98	98	60	8
Cucurbita maxima (H)	98	98	60	8
Cucurbita moschata (OP)	98	98	60	8
Cucurbita moschata (H)	98	98	60	8
Cucurbita pepo (OP)	98	98	60	8
Cucurbita pepo (H)	98	98	60	8
Daucus carota	98	97	60	8
Lactuca sativa	98	97	65	8
Lagenaria siceraria (OP)	98	98	60	8
Lagenaria siceraria (H)	98	98	60	8
Lycopersicon esculentum (OP)	98	98	65 (humid tropics) 75 (elsewhere)	8
Lycopersicon esculentum (H)	98	98	65 (humid tropics) 75 (elsewhere)	8
Momordica charantia (OP)	98	98	60	8
Momordica charantia (H)	98	98	60	8
Petroselinum crispum	98	95	55	8
Raphanus sativus	98	98	75	8
Solanum melongena	98	98	60	8
Spinacia oleracea (OP)	98	97	60	8
Spinacia oleracea (H)	98	97	60	8
Tetragonia tetragonoides	98	97	60	8

* Maximum moisture content recommended for safe storage. These values may vary according to local conditions, in particular with environmental relative humidity and temperature. Local standards should be applied.

OP – open pollinated

H – hybrid

Varietal purity: percentage of pure seed of the specified crop variety in the seed of the crop species under consideration.

Analytical purity: percentage of pure seed of the crop species in the working sample, not necessarily of the same variety