

codex alimentarius commission



FOOD AND AGRICULTURE
ORGANIZATION
OF THE UNITED NATIONS

WORLD
HEALTH
ORGANIZATION



JOINT OFFICE: Viale delle Terme di Caracalla 00100 ROME Tel: 39 06 57051 www.codexalimentarius.net Email: codex@fao.org Facsimile: 39 06 5705 4593

Agenda Item 10

**CX/FH 00/10
July 2000**

JOINT FAO/WHO FOOD STANDARDS PROGRAMME

CODEX COMMITTEE ON FOOD HYGIENE

Thirty-third Session

Washington DC, U.S.A., 23-28 October, 2000

DISCUSSION PAPER ON THE APPLICATION OF HACCP IN SMALL AND/OR LESS DEVELOPED BUSINESSES (SLDBS)

(Prepared by the Netherlands)

INTRODUCTION

The Codex Committee on Food Hygiene has noted that the current Codex Guidelines on the Application of the HACCP principles are not well suited to use by small and less developed businesses (SLDBs). At its 32nd Session, the Committee agreed that the Delegation of the Netherlands, with the assistance of its drafting partners, should prepare a discussion paper outlining the main issues involved in elaborating appropriate practical guidance on the application of the HACCP principles to address this problem. This paper identifies the issues involved in elaborating such guidance and suggests how this could be achieved within the context of the existing Codex Alimentarius Guidelines on the application of the HACCP principles and without altering the seven HACCP principles in any way. The proposed additions to the Application Guidelines are attached at Appendix A for consideration by the Committee at its 33rd Session. For illustration, the Application Guidelines with the proposed additions are attached at **Appendix B**.

BACKGROUND

The application of the HACCP system in food businesses is recognised around the world as the system of choice in the management of food safety and the prevention of food borne disease. The HACCP approach is being increasingly employed in the global food industry, particularly in large manufacturing operations, and its influence in facilitating the international trade in foodstuffs has grown considerably in recent years.

SLDBs are also coming under increasing pressure to apply HACCP to their operations as a result of such external factors as legal requirements, market forces and expectations for in-house management controls. The Committee has recognised that, regardless of the stage of development of a country, small businesses have greater difficulties than larger operations in implementing HACCP. The barriers to implementing HACCP in SLDBs have been discussed extensively at recent Sessions of the Committee (1997-1999). The WHO Expert Consultation on Strategies for

Implementing HACCP in SLDBs, held in the Netherlands in June 1999, reviewed the difficulties and barriers experienced by these businesses when applying the HACCP system. These barriers include:

- lack of Government commitment;
- lack of customer and business demand;
- absence of legal requirements;
- financial constraints;
- human resource constraints;
- lack of expertise and/or technical support
- inadequate infrastructure and facilities; and
- inadequate communications.

These issues were also discussed in document CX/FH 99/9 “*Discussion paper on the implementation of HACCP in small and/or less developed businesses*”, which was considered by the Committee at its 32nd Session. Additional barriers are discussed in Appendix C.

ISSUE

The current Codex Guidelines on the application of HACCP was one factor/barrier which the WHO Expert Consultation considered inhibited the more widespread utilisation of HACCP by SLDBs. The present application guidelines acknowledge that HACCP can be applied flexibly in all food businesses, irrespective of their size or nature. However, they provide little guidance on the how the seven HACCP principles can be applied in practice in SLDBs as they are geared more towards the approach which can be taken in larger food operations.¹

By way of illustration, the present application guidelines refer to the establishment of teams of experts, yet they do not provide any advice on how SLDBs without in-house expertise and with limited resources can access such expertise to enable them to put effective HACCP systems in place. There are several means by which such constraints may be overcome by businesses, particularly SLDBs. These include the appropriate use of expertly developed sector-specific guides, reference materials or other external support. In practice this is the way many countries are currently facilitating the implementation of the HACCP system in small and less developed food businesses, although such approaches are not referred to in the existing application guidelines.

PROPOSED APPROACH

In the light of the difficulties outlined above, the Codex Committee on Food Hygiene has agreed that the Discussion paper on the Implementation of HACCP in Small and/or Less Developed Business (CXFH 99/9) should be re-examined with a view to considering how they can be elaborated to include further guidance on the application of HACCP in SLDBs. In response to the Committee’s request at its 32nd Session, the Delegation of the Netherlands convened a meeting of its drafting partners in Brussels between 10-12 May 2000 to develop proposals on a way forward for discussion at the Committee’s next session.

¹ **Secretariat note:** It should be noted that HACCP is not a mandatory requirement according to the Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1-1969, Rev.3 (1997), Section 5.1); other food safety management systems may be used

Following detailed consideration, the drafting group proposes enhancing the existing text of the Codex HACCP application guidelines to incorporate appropriate guidance that reflects the circumstances of SLDBs. The proposed additions are shown at Appendix A. For illustration, the enhancements are shown in underline in the draft proposal attached at Appendix B. The drafting group took as its basis for the enhancements the result of the WHO consultation, which was well received at the 32nd Session, which provides a useful template for how the Codex HACCP application guidelines may be elaborated for use by SLDBs. The approach being recommended does not alter the existing seven HACCP principles in any way, as there should be no difference in the principles of HACCP whether applied in small, medium or large premises. However, it does provide further guidance on the application of the HACCP principles for SLDBs, which could be elaborated alongside the existing Codex HACCP application guidelines within the step process subject to agreement by the Committee.

CONCLUSION AND RECOMMENDATION

*The Codex Committee on Food Hygiene noted that the current Codex Guidelines on the application of HACCP should be reviewed for the reasons discussed above to provide appropriate guidance to SLDBs on the application of the HACCP principles. It is suggested that it may be appropriate to add modifications, incorporated into specific areas of the existing HACCP application guidelines, for use by SLDBs. In this regard, the Delegation of the Netherlands, together with its drafting partners, has developed the draft enhanced HACCP Application Guidelines attached at Appendix A. It is not the intent to change the concepts of the current HACCP guidelines nor to open up the existing seven principles for deliberation or for change. In respect to SLDBs, it is recommended that the Committee solely consider the proposed modifications and **recommends that the Committee agrees at its 33rd Session on the best manner to progress the enhanced Guidelines into the step procedure without altering the existing principles.***

APPENDIX A

Recommended enhancements TO CODEX HACCP GUIDELINES TO PROVIDE PRACTICAL GUIDANCE ON THE APPLICATION OF THE HACCP PRINCIPLES

The additions and changes are recommended in the following sections:

GUIDELINES FOR THE APPLICATION OF THE HACCP SYSTEM

- *After the first sentence recommend inserting the following text:*

The prerequisites to HACCP, including training, should be well established, fully operational and verified in order to facilitate the successful application and implementation of the HACCP system.

- *Recommend amending the existing second sentence, “Management commitment is necessary for implementation of an effective HACCP system.” to read:*

For all types of food business, management commitment is necessary for implementation of an effective HACCP system.

- *At the end of the last paragraph, recommend amending the last sentence, “It is important when applying HACCP to be flexible where appropriate, given the context of the application, taking into account the nature and size of the operation” to read:*

It is important when applying HACCP to be flexible where appropriate, given the context of the application, taking into account the nature and size of the operation, including available resources, processes, techniques and practical constraints. This may be particularly relevant in SLDBs. All seven principles must be applied in the HACCP system.

APPLICATION

1. *Assemble HACCP team*

- *Recommend to amend the following sentence, “Where such expertise is not available on site, expert advice should be obtained from other sources.” With the following text:*

such as regulatory authorities, trade and industry associations, independent experts and HACCP literature and guidance (including sector-specific guides).

- *Recommend adding the following text after the first paragraph:*

Expertly developed HACCP guidance relevant to the process or type of operation may provide a useful tool for businesses in their application of HACCP principles. It may be possible that a well-trained individual in possession of such guidance documents is able to implement HACCP in-house.

2. *Describe product*

- *Recommend adding the following text at the end of the section:*

In multi-product businesses, such as for example, catering operations, it may be effective to focus on groups of products with similar characteristics or processing steps that are used for a number of similar products.

3. ***Identify intended use***

- *Recommend adding the following text at the end of the section:*

Where businesses are using expertly developed HACCP guidance, it is important this is specific to the foods and/or processes under consideration.

4. ***Construct flow diagram***

- *Recommend adding the following to the end of the first sentence:*

(see also paragraph 1 above).

- *In the second sentence of 4, recommend amending the current sentence, “ The flow diagram should cover all steps in the operation.” with the additional text and adding the additional sentence:*

The flow diagram should cover all steps in the operation for a particular product. When similar processing steps are used for a number of products the same flow diagram may be used.

5. ***On-site confirmation of flow diagram***

- *Recommend to amend the sentence: “The HACCP team should confirm the processing operation against the flow diagram during all stages and hours of operation and amend the flow diagram where appropriate.” to read:*

Steps must be taken to confirm the processing operation against the flow diagram during all stages and hours of operation and amend the flow diagram where appropriate. The confirmation of the flow diagram should be performed by a person with sufficient knowledge of the processing operation.

6. ***List all potential hazards associated with each step, conduct a hazard analysis, and consider any measures to control identified hazards***

(SEE PRINCIPLE 1)

- *Recommend adding the words (see also paragraph 1 above) after “The HACCP team” in the first and second paragraphs to read:*

The HACCP team (see also paragraph 1 above) should....

- *Recommend amend the following sentence, “The HACCP team must then consider what control measures, if any, exist which can be applied for each hazard” to read:*

Consideration should be given to what control measures, if any, exist which can be applied to each hazard.

- *Recommend adding the following text at the end of the section:*

To facilitate the hazard analysis, businesses may consult sources of expert information on identifying hazards relevant to the process and the control measures necessary. This information such as expertly developed guideline documents should be considered as reference material to the identification of the specific hazards and controls within the operation.

7. Determine Critical Control Points

(SEE PRINCIPLE 2)²

- *Recommend adding the following text at the end of the section:*

To facilitate the CCP determination, businesses may consult sources of expert information on identifying CCPs relevant to the product / process. This information such as expertly developed guideline documents, should be considered as reference material to the identification of CCPs.

8. Establish critical limits for each CCP

(SEE PRINCIPLE 3)

- *Recommend to amend the first sentence, “Critical limits must be specified and, if possible, validated for each Critical Control Point”, to read:*

Critical limits must be specified and validated for each Critical Control Point.

- *Recommend adding the following text to the end of the section:*

Expertly developed HACCP guidance can help businesses, in particularly SLDBs, in identifying the most appropriate criteria for the critical limits as well as setting the limits themselves. Care should be taken to ensure that these limits fully apply to the specific operation or product under consideration. These critical limits should be measurable.

9. Establish a monitoring system for each CCP

(SEE PRINCIPLE 4)

- *Recommend adding the following text to after the second paragraph:*

The efficacy of any monitoring system will rely on management and employees having the appropriate knowledge and skills especially where monitoring arrangements are carried out manually.

10. Establish corrective actions

(SEE PRINCIPLE 5)

- *Recommend inserting the following text after the first paragraph:*

² Since the publication of the decision tree by Codex, its use has been implemented many times for training purposes. In many instances, while this tree has been useful to explain the logic and depth of understanding needed to determine CCPs, it is not specific to all food operations, eg slaughter, and therefore it should be used in conjunction with professional judgement, and modified in some cases.

Where in-house expertise is not available, external expertise may be needed to advise on the appropriate corrective actions to be taken when there is a loss of control.

11. Establish verification procedures

(SEE PRINCIPLE 6)

- *Recommend inserting the following text after the third sentence in the first paragraph, prior to the sentence that starts with “examples of verification...”*

Verification should be carried out by someone other than the person who is responsible for performing the monitoring and corrective actions. Where verification can not be performed in house, verification may be performed on behalf of the company by external experts.

- *Recommend inserting after the sentence “ [Where possible,] validation activities should include actions to confirm the efficacy of all elements of the HACCP plan.”, insert the following text:*

The ability to perform validation will vary depending upon the nature and size of the business and the availability of resources.

Expertly developed HACCP guidance can help businesses, particularly SLDBs, in identifying the most appropriate criteria for verification and validation activities. Care should be taken to ensure that these activities apply to the specific operation or product under consideration in a suitable way.

12. Establish Documentation and Record Keeping

(SEE PRINCIPLE 7)

- *Recommend amending to the end of the sentence “Documentation and record keeping should be appropriate to the nature and size of the operation”, insert the following text:*

and sufficient to enable the business to be confident that controls are in place and being maintained.

- *Recommend adding to the bullet list, the following text:*

Verification procedures performed;

Modifications to the HACCP plan.

- *Recommend adding the following text to the end of the section:*

A simple record-keeping system can be effective and easily communicated to employees. It may be integrated into existing operations and may use existing paperwork, such as delivery invoices and checklists to record, for example, product temperatures. A simple record keeping system can be easily communicated to employees.

APPENDIX B

Revised Guidelines with recommended enhancements included (underlined)

GUIDELINES FOR THE APPLICATION OF THE HACCP SYSTEM

Prior to application of HACCP to any sector of the food chain, that sector should be operating according to the Codex General Principles of Food Hygiene, the appropriate Codex Codes of Practice, and appropriate food safety legislation. The prerequisites to HACCP, including training, should be well established, fully operational and verified in order to facilitate the successful application and implementation of the HACCP system. For all types of food business, management commitment is necessary for implementation of an effective HACCP system. During hazard identification, evaluation, and subsequent operations in designing and applying HACCP systems, consideration must be given to the impact of raw materials, ingredients, food manufacturing practices, role of manufacturing processes to control hazards, likely end-use of the product, categories of consumers of concern, and epidemiological evidence relative to food safety.

The intent of the HACCP system is to focus control at CCPs. Redesign of the operation should be considered if a hazard which must be controlled is identified but no CCPs are found.

HACCP should be applied to each specific operation separately. CCPs identified in any given example in any Codex Code of Hygienic Practice might not be the only ones identified for a specific application or might be of a different nature.

The HACCP application should be reviewed and necessary changes made when any modification is made in the product, process, or any step. It is important when applying HACCP to be flexible where appropriate, given the context of the application, taking into account the nature and size of the operation, including available resources, processes, techniques and practical constraints. This may be particularly relevant in SLDBs. All seven principles must be applied in the HACCP system

APPLICATION

The application of HACCP principles consists of the following tasks as identified in the Logic Sequence for Application of HACCP (Diagram 1).

1. Assemble HACCP team

The food operation should assure that the appropriate product specific knowledge and expertise is available for the development of an effective HACCP plan. Optimally, this may be accomplished by assembling a multidisciplinary team. Where such expertise is not available on site, expert advice should be obtained from other sources, such as regulatory authorities, trade and industry associations, independent experts and HACCP literature and guidance (including sector-specific guides).

Expertly developed HACCP guidance relevant to the process or type of operation may provide a useful tool for businesses in their application of HACCP principles. It may be possible that a well-trained individual in possession of such guidance documents is able to implement HACCP in-house.

The scope of the HACCP plan should be identified. The scope should describe which segment of the food chain is involved and the general classes of hazards to be addressed (e.g. does it cover all classes of hazards or only selected classes).

2. Describe product

A full description of the product should be drawn up, including relevant safety information such as: composition, physical/chemical structure (including A_w , pH, etc), microcidal/static treatments (heat-treatment, freezing, brining, smoking, etc), packaging, durability and storage conditions and method of distribution.

In multi-product businesses, such as for example, catering operations, it may be effective to focus on groups of products with similar characteristics or processing steps that are used for a number of similar products.

3. Identify intended use

The intended use should be based on the expected uses of the product by the end user or consumer. In specific cases, vulnerable groups of the population, e.g. institutional feeding, may have to be considered. Where businesses are using expertly developed HACCP guidance, it is important that this is specific to the foods and/or processes under consideration.

4. Construct flow diagram

The flow diagram should be constructed by the HACCP team (see also paragraph 1 above). The flow diagram should cover all steps in the operation for a particular product. When similar processing steps are used for a number of products the same flow diagram may be used. When applying HACCP to a given operation, consideration should be given to steps preceding and following the specified operation.

5. On-site confirmation of flow diagram

Steps must be taken to confirm the processing operation against the flow diagram during all stages and hours of operation and amend the flow diagram where appropriate. The confirmation of the flow diagram should be performed by a person with sufficient knowledge of the processing operation.

6. List all potential hazards associated with each step, conduct a hazard analysis, and consider any measures to control identified hazards

(SEE PRINCIPLE 1)

The HACCP team (see also paragraph 1 above) should list all of the hazards that may be reasonably expected to occur at each step from primary production, processing, manufacture, and distribution until the point of consumption.

The HACCP Team (see also paragraph 1 above) should next conduct a hazard analysis to identify for the HACCP plan, which hazards are of such a nature that their elimination or reduction to acceptable levels is essential to the production of a safe food.

In conducting the hazard analysis, wherever possible the following should be included:

- the likely occurrence of hazards and severity of their adverse health effects;
- the qualitative and/or quantitative evaluation of the presence of hazards;
- survival or multiplication of microorganisms of concern;

- production or persistence in foods of toxins, chemicals or physical agents; and,
- conditions leading to the above.

Consideration should be given to what control measures, if any exist which can be applied to each hazard.

More than one control measure may be required to control a specific hazard(s) and more than one hazard may be controlled by a specified control measure.

To facilitate the hazard analysis, businesses may consult sources of expert information on identifying hazards relevant to the process and the control measures necessary. This information, such as expertly developed guideline documents, should be considered as reference material to the identification of the specific hazards and controls within the operation.

7. Determine Critical Control Points

(SEE PRINCIPLE 2)³

There may be more than one CCP at which control is applied to address the same hazard. The determination of a CCP in the HACCP system can be facilitated by the application of a decision tree (e.g. Diagram 2), which indicates a logic reasoning approach. Application of a decision tree should be flexible, given whether the operation is for production, slaughter, processing, storage, distribution or other. It should be used for guidance when determining CCPs. This example of a decision tree may not be applicable to all situations. Other approaches may be used. Training in the application of the decision tree is recommended.

If a hazard has been identified at a step where control is necessary for safety, and no control measure exists at that step, or any other, then the product or process should be modified at that step, or at any earlier or later stage, to include a control measure.

To facilitate the CCP determination, businesses may consult sources of expert information on identifying CCPs relevant to the product/process. This information, such as expertly developed guideline documents, should be considered as reference material to the identification of CCPs.

8. Establish critical limits for each CCP

(SEE PRINCIPLE 3)

Critical limits must be specified and validated for each Critical Control Point. In some cases more than one critical limit will be elaborated at a particular step. Criteria often used include measurements of temperature, time moisture level, pH, A_w, available chlorine, and sensory parameters such as visual appearance and texture.

Expertly developed HACCP guidance can help businesses, in particularly SLDBs, in identifying the most appropriate criteria for the critical limits as well as setting the limits themselves. Care should

³ Since the publication of the decision tree by Codex, its use has been implemented many times for training purposes. In many instances, while this tree has been useful to explain the logic and depth of understanding needed to determine CCPs, it is not specific to all food operations, eg slaughter, and therefore it should be used in conjunction with professional judgement, and modified in some cases.

be taken to ensure that these limits fully apply to the specific operation or product under consideration. These critical limits should be measurable.

9. *Establish a monitoring system for each CCP*

(SEE PRINCIPLE 4)

Monitoring is the scheduled measurement or observation of a CCP relative to its critical limits. The monitoring procedures must be able to detect loss of control at the CCP. Further, monitoring should ideally provide this information in time to make adjustments to ensure control of the process to prevent violating the critical limits. Where possible, process adjustments should be made when monitoring results indicate a trend towards loss of control at a CCP. The adjustments should be taken before a deviation occurs. Data derived from monitoring must be evaluated by a designated person with knowledge and authority to carry out corrective actions when indicated. If monitoring is not continuous, then the amount or frequency of monitoring must be sufficient to guarantee the CCP is in control. Most monitoring procedures for CCPs will need to be done rapidly because they relate to on-line processes and there will not be time for lengthy analytical testing. Physical and chemical measurements are often preferred to microbiological testing because they may be done rapidly and can often indicate the microbiological control of the product.

The efficacy of any monitoring system will rely on management and employees having the appropriate knowledge and skills especially where monitoring arrangements are carried out manually.

All records and documents associated with monitoring CCPs must be signed by the person(s) doing the monitoring and by a responsible reviewing official(s) of the company.

10. *Establish corrective actions*

(SEE PRINCIPLE 5)

Specific corrective actions must be developed for each CCP in the HACCP system in order to deal with deviations when they occur.

Where in-house expertise is not available, external expertise may be needed to advise on the appropriate corrective actions to be taken when there is a loss of control.

The actions must ensure that the CCP has been brought under control. Actions taken must also include proper disposition of the affected product. Deviation and product disposition procedures must be documented in the HACCP record keeping.

11. *Establish verification procedures*

(SEE PRINCIPLE 6)

Establish procedures for verification. Verification and auditing methods, procedures and tests, including random sampling and analysis, can be used to determine if the HACCP system is working correctly. The frequency of verification should be sufficient to confirm that the HACCP system is working effectively.

Verification should be carried out by someone other than the person who is responsible for performing the monitoring and corrective actions. Where verification can not be performed in house, verification may be performed on behalf of the company by external experts.

Examples of verification activities include:

- Review of the HACCP system and its records;
- Review of deviations and product dispositions;
- Confirmation that CCPs are kept under control.

[Where possible,] validation activities should include actions to confirm the efficacy of all elements of the HACCP plan. The ability to perform validation will vary depending upon the nature and size of the business and the availability of resources.

Expertly developed HACCP guidance can help businesses, particularly SLDBs, in identifying the most appropriate criteria for verification and validation activities. Care should be taken to ensure that these activities apply to the specific operation or product under consideration in a suitable way.

12. Establish Documentation and Record Keeping

(SEE PRINCIPLE 7)

Efficient and accurate record keeping is essential to the application of a HACCP system. HACCP procedures should be documented. Documentation and record keeping should be appropriate to the nature and size of the operation and sufficient to enable the business to be confident that controls are in place and being maintained.

Documentation examples are:

- Hazard analysis;
- CCP determination;
- Critical limit determination.

Record examples are:

- CCP monitoring activities;
- Deviations and associated corrective actions;
- Verification procedures performed;
- Modifications to the HACCP plan;
- Modifications to the HACCP system.

An example of a HACCP worksheet is attached as Diagram 3.

A simple record-keeping system can be effective and easily communicated to employees. It may be integrated into existing operations and may use existing paperwork, such as delivery invoices and checklists to record, for example, product temperatures.

TRAINING

Training of personnel in industry, government and academia in HACCP principles and applications, and increasing awareness of consumers are essential elements for the effective implementation of HACCP. As an aid in developing specific training to support a HACCP plan, working instructions and procedures should be developed which define the tasks of the operating personnel to be stationed at each Critical Control Point.

Cooperation between primary producer, industry, trade groups, consumer organisations, and responsible authorities is of vital importance. Opportunities should be provided for the joint training of industry and control authorities to encourage and maintain a continuous dialogue and create a climate of understanding in the practical application of HACCP.

APPENDIX C

BARRIERS TO THE IMPLEMENTATION OF HACCP in Small and/or Less Developed Businesses (SLDB)

A number of barriers impede the implementation of HACCP in SLDBs. These barriers vary from country to country and from sector to sector. Some may be due to internal factors in individual businesses, e.g. the level of knowledge in the business. Others may be due to external factors, such as the availability of government or industry support.

The barriers may include:

- Lack of Government commitment;
- Lack of customer and business demand;
- Absence of legal requirements;
- Financial constraints;
- Human resource constraints;
- Lack of expertise and/or technical support
- Inadequate infrastructure and facilities; and
- Inadequate communications.

The Codex Guidelines on HACCP application

Certain factors, for example regulations, market forces, expectations for due diligence, or promotion by public health and food control authorities, are increasing the pressure on businesses including SLDBs to apply HACCP. SLDBs have in the past been discouraged from utilising HACCP because the current Codex application guidelines are geared more towards the approach that can be taken in larger food operations. However, the seven principles of HACCP can be applied to all businesses processing or preparing food, irrespective of the size or nature of their work, provided that food business operators have been adequately trained and have access to necessary information.

LACK OF PRE-REQUISITES

An important consideration in implementing HACCP in businesses including SLDBs is the recognition that there exists a critical interdependency between HACCP and prerequisite programmes including training (PRP)⁴. Prior to implementing the HACCP system, businesses must be engaged in good hygienic practices (GHP) and good manufacturing practices (GMP). By first implementing GHP and GMP, the difficulties associated with implementing HACCP are minimised and businesses are encouraged to follow a stepwise approach to HACCP implementation.

The barriers to effective implementation of HACCP in SLDBs were discussed in detail in sections 5, 5.1 and 5.2 of the WHO consultation document *Strategies for Implementing HACCP in Small and/or Less Developed Businesses* – The Hague, June 1999.

⁴ Prerequisite programmes refer to all practices and conditions needed prior to and during the implementation of HACCP and which are essential for food safety, as described in the Codex Alimentarius Commission's General Principles of Food Hygiene and other Codes of Practice.