



# The International Treaty

ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE



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## Item 11 of the Provisional Agenda

### FOURTH SESSION OF THE GOVERNING BODY

Bali, Indonesia, 14 – 18 March 2011

#### EXPERIENCES OF INTERNATIONAL INSTITUTIONS WITH THE IMPLEMENTATION OF THE AGREEMENTS WITH THE GOVERNING BODY UNDER ARTICLE 15 OF THE TREATY, WITH PARTICULAR REFERENCE TO THE USE OF THE STANDARD MATERIAL TRANSFER AGREEMENT FOR ANNEX I AND NON-ANNEX I CROPS

### INTRODUCTION

1. By Resolution 4/2010, the Governing Body  
*Request[ed] the Secretary to prepare a comprehensive report to its Fourth Session on the status of non-monetary and monetary benefit-sharing, as provided for in Articles 13.2a, b, c and d of the International Treaty, and for this purpose to request information from Contracting Parties, international institutions having signed agreements under Article 15, and private sector entities.*
2. On 20 September 2010, the Secretariat communicated to International Institutions that have signed agreements with the Governing Body under Article 15 of the Treaty, the request for information on their collections as well as their distribution of plant genetic resources for food and agriculture using the SMTA.
3. Pursuant to the decision and request of the Governing Body, and in accordance with the Agreement between the Governing Body and a number of international institutions under Article 15 of the Treaty, the following international institutions made submissions to the Secretariat:
  - i) The Secretariat of the Pacific Community (SPC) Centre for Pacific Crops and Trees (CePaCT); and
  - ii) The Tropical Agricultural Research and Higher Education Centre (CATIE);
  - iii) The Mutant Germplasm Repository of the FAO/IAEA Joint Division.
4. The reports cover acquisitions and distribution of germplasm by the Institutions for both *Annex I* and non-*Annex I* material, as well as non-monetary benefit-sharing initiatives.
5. The Reports are contained in *Appendices 1 – 3*, respectively, to this document, in the form and language received from the Institutions for the information of the Governing Body.

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**APPENDIX 1**

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**EXPERIENCE OF THE SECRETARIAT OF THE PACIFIC CENTRE FOR PACIFIC CROPS AND TREES (SPC CEPACT) OF THE AGREEMENTS WITH THE GOVERNING BODY OF THE TREATY, WITH PARTICULAR REFERENCE TO THE USE OF THE STANDARD MATERIAL TRANSFER AGREEMENT**

At the Third Session of the Governing Body to the Treaty (June 2009), the SPC CePaCT formally placed the *ex situ* collections of the Annex 1 crops, that it holds in trust for the Pacific region into the Multilateral System of the Treaty.

Since June 2009, 358 accessions (6,979 plants) of banana, breadfruit, cassava, potato, sweet potato and yam, have been distributed to 15 countries, namely Federated States of Micronesia (Chuuk and Pohnpei), Fiji Islands, Cook Islands, Kiribati (Christmas Island and Tarawa), Nauru, New Caledonia, Norfolk Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, and Wallis and Futuna, using the SMTA. The SMTA has also been used to support the distribution of vanilla, (seven accessions to Kiribati) a non-Annex 1 crop. The CePaCT has received no indication that any recipients of the germplasm in these countries are experiencing problems regarding the use of the SMTA.

Under Article 6, recipients have opted for both 6.7 and 6.11 regarding any payment, in the case of commercialization. It is likely, however, that there is not a clear understanding as to the interpretation of the two options, and highlights need for capacity building in the use of the SMTA to ensure clear understanding.

**Non-monetary benefit sharing: Capacity building**

In September 2009 a capacity building workshop was held with support from the Joint Capacity Building Programme. 24 participants met from 13 countries for two days. The aim of the workshop was:

1. To better understand the treaty
2. To agree on a mechanism as to how to implement the Treaty
3. To identify capacity building needs

At the end of the workshop the participants endorsed a number of recommendations, of which the following have been addressed:

- Recommend that countries consider taking full advantage of the services of SPC as an agent for Pacific Island countries in implementing the MLS on their behalf and on request, both for the granting of access to countries outside the region and for requests for access to material from other countries outside the region. SPC, in consultation with the Joint Capacity Building Programme based on available resources, should draw up the proposals formalizing such a scheme for submission to the next session of HOAFS, after consultation at the technical level through PAPGREN
- Recommend that approaches to implementation of the International Treaty and its MLS by Contracting Parties be harmonized in the region. Draft model provisions for incorporation into national legislation or policies, should be drawn up by SPC, in collaboration with countries and other relevant regional agencies such as the

Pacific Island Forum Secretariat, and in consultation with the Joint Capacity Building Programme based on available

A scheme for the SPC to provide services on an agency basis to Pacific Island Countries Parties to the International Treaty in the Implementation of the Multilateral System has been drawn up and was endorsed by the Heads of Agriculture and Forestry Services in April of this year (See Annex 1 of this paper). This document is now being circulated for signature by all the countries that have ratified the Treaty.

A consultancy is in progress which is addressing the 2<sup>nd</sup> recommendation, looking at harmonization of approaches to the implementation of the International Treaty and it's MLS by Contracting Parties. The TORs for this consultancy are as follows:

- Review the experience of those countries that have become parties to the International Treaty on Plant Genetic Resources for Food and Agriculture (the Treaty) with the implementation of the Treaty, with particular relevance to the perceived need for changes to national legislation, and review any national legislation adopted for the implementation of the Treaty.
- Review the national legislation of countries that have adopted national legislation for the implementation of the Convention on Biological Diversity and indicate whether and in what ways that legislation would cause difficulties to the country concerned should it decide to become a party to the Treaty.
- Taking into account the recent recommendations of the Technical Ad Hoc Advisory Committee on the Standard Material Transfer Agreement (SMTA) and the Multilateral System, draw up draft recommended legal provisions that create legal space for the Treaty in countries that have existing legislation for the implementation of the Convention on Biological Diversity.
- Taking into account other initiatives in other countries and regions of the world, make recommendations regarding the implementation of the Treaty in the Pacific Island Countries that are or wish to become Parties to the Treaty, including recommendations regarding the need, if any, for new national legislation, and as appropriate draft model legal provisions for such legislation.
- Make recommendations regarding follow-up action to be taken in the region.

A first draft is expected by the end of November at the latest.

**Non-monetary benefit sharing: Information sharing**

In addition, a consultancy has also been conducted to consider Indigenous Agricultural Knowledge in the Pacific, with special reference to Article 9 of the Treaty. The study will:

- Conduct a review of international, regional and/or national and/or local initiatives and best practices to comply with Article 9 of the ITPGRFA;

- Carry out an assessment of SPC's responsibilities and opportunities for addressing the protection of traditional/indigenous knowledge in relation to the ITPGRFA;
- Hold consultations in three ITPGRFA Contracting Parties (including Fiji) through in-country visits to explore their understanding, application of and concerns around Article 9 of the ITPGRFA;
- Hold consultations with key stakeholders at the regional and international level to identify areas for partnership and collaboration to advance the protection of traditional/indigenous knowledge relevant to PGRFA and enhance farmers' rights in accordance with Article 9 of the ITPGRFA

The report, which has been submitted but not finalized, specifically addresses the following:

- Reviews and provides precise recommendations on the role that SPC should be playing to protect TK in relation to the ITPGRFA;
- Suggests options for designing a proper mechanism, to protect TK in relation to the ITPGRFA in the PICTs, based, if appropriate, on the examples of existing regional frameworks for the protection of TK, including determining whether a third model law or another mechanism to protect TK in relation to the ITPGRFA is warranted;
- Recommends a timeline and methodology for developing appropriate regional and national mechanisms to protect TK in relation to the ITPGRFA;
- Advises how SPC, in partnership with regional and international agencies and PICTs would implement regional and national mechanisms to protect TK in relation to the ITPGRFA;
- Provides recommendations for the documentation of traditional/indigenous agricultural knowledge in light of both the needs for protection and the need for promotion and improved access to information about traditional/indigenous skills and practices in agriculture, for the benefit of communities and PICTs.

## I. Annex 1

### II.

### III. Scheme for the SPC to provide services on an agency basis to Pacific Island Countries Parties to the International Treaty in the implementation of the Multilateral System

#### *Background and rationale*

The International Treaty on Plant Genetic Resources for Food and Agriculture (the Treaty) was adopted by the FAO Conference in 2001 and came into force in June 2004. The Treaty provides for the conservation, management and sustainable utilization of plant genetic resources for food and agriculture, and for the establishment of a Multilateral System of Access and Benefit-sharing (MLS) for plant genetic resources of a number of food crops listed in Annex 1 to the Treaty: these are crops that are important for food security and on which countries are most interdependent. In June 2009, the Governing Body of the Treaty signed an agreement with the Secretariat of the Pacific Community under Article 15.5 of the Treaty under which the SPC placed its collection of plant genetic resources for food and agriculture within the purview of the Treaty. PGRFA of crops listed in Annex 1 held in the collection will now be made available to other contracting parties to the Treaty under the Standard Material Transfer Agreement (SMTA) adopted by the Governing Body at its first session in June 2006.

As of 1 March 2010, five Pacific Island countries (Cook Islands, Fiji, Kiribati, Palau and Samoa) are parties to the Treaty. In requesting the conclusion of an agreement with the Governing Body of the Treaty in 2007, the observer from the SPC indicated the difficulties that the individual Pacific Island countries might encounter in the implementation of the Treaty and its Multilateral System given the scarcity of administrative resources and trained personnel in those countries.

The implementation of the Treaty and its MLS in the Pacific was the subject of a Workshop held in September 2009 (Nadi, Fiji 23- 24 September 2009). In an effort to ease the administrative burden on the Pacific Island countries, the Workshop made the following recommendation:

*Recommend that countries consider taking full advantage of the services of SPC as an agent for Pacific Island countries in implementing the MLS on their behalf and on request, both for the granting of access to countries outside the region and for requests for access to material from other countries outside the region. SPC, in consultation with the Joint Capacity Building Programme based on available resources, should draw up the proposals formalizing such a scheme for submission to the next session of HOAFS, after consultation at the technical level through PAPGREN.*

**A. SCHEME FOR THE APPOINTMENT OF SPC AS AGENT FOR  
PACIFIC ISLAND COUNTRIES IN HANDLING REQUESTS FOR  
PGRFA HELD IN *EX SITU* COLLECTIONS**

The Secretariat of the Pacific Community and those Pacific Island countries wishing to avail themselves of the services of the SPC in handling requests for material under the MLS should subscribe to the Agency Agreement set out in Annex 1.

#### IV. ANNEX 1

##### A. AGREEMENT FOR THE APPOINTMENT OF SPC AS AGENT FOR PACIFIC ISLAND COUNTRIES IN HANDLING REQUESTS FOR MATERIAL UNDER THE MULTILATERAL SYSTEM OF ACCESS AND BENEFIT-SHARING UNDER THE INTERNATIONAL TREATY ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

*This Agency Agreement is entered into between the Secretariat of the Pacific Community and the undersigned Pacific Island Countries.*

###### *Article 1. Coverage of agency appointment*

**The** undersigned Pacific Island countries (hereinafter referred to as “the Pacific Island Parties”) being countries that are Parties to the International Treaty on Plant Genetic Resources for Food and Agriculture (hereinafter referred to as “the Treaty”), hereby appoint the Secretariat of the Pacific Community (hereinafter referred to as “the SPC”) as their agents for the purpose of -

- a. Handling requests by the Pacific Island Parties under the Multilateral System of Access and Benefit-sharing (hereinafter referred to as “MLS”) for plant genetic resources for food and agriculture (hereinafter referred to as “PGRFA”) held by other Contracting Parties to the Treaty (hereinafter referred to as “Contracting Parties”) and by International Institutions that have signed agreements with the Governing Body of the Treaty placing their collections within the purview of the Treaty (hereinafter referred to as “International Institutions”);
- b. Handling requests by Contracting Parties and International Institutions for access under the MLS to PGRFA held by Pacific Island Parties in *ex situ* collections.

For the avoidance of doubt, it is understood that this agency appointment will cover only PGRFA of crops and forages that are included in Annex 1 to the Treaty, provided that nothing in this Agency Agreement shall preclude any of the Pacific Island Parties from exchanging under the Standard Material Transfer Agreement (hereinafter referred to as “SMTA”) PGRFA of crops and forages that are not included in Annex I to the Treaty.

###### *Article 2. Period of appointment*

This appointment shall be for a period of five years and may be renewed for further periods of five years with the mutual consent of the Pacific Island Parties and the SPC.

*Article 3. Conditions of appointment including procedures for handling requests*

*(a) For requests by Pacific Island Parties for PGRFA*

The SPC agrees to perform the following tasks on request by Pacific Island Parties:

- Assist the requesting Pacific Island Party in identifying the PGRFA required;
- Assist the Pacific Island Party in identifying the most appropriate potential sources for the PGRFA required;
- Submit a request for the PGRFA to the source identified;
- check and sign the SMTA for the PGRFA as agent for the requesting Pacific Island Party;
- if requested by the requesting Pacific Island Party, accept delivery of the PGRFA requested and undertake quarantine procedures in respect of those PGRFA.

The Pacific Island Parties hereby authorize the SPC acting as their agent to carry out the tasks specified above, and in particular to submit requests for PGRFA, to sign the SMTA on their behalf and to accept delivery of PGRFA requested.

*(b) For requests by Contracting Parties and International Institutions for access to PGRFA held by Pacific Island Parties*

The SPC agrees to perform the following tasks on behalf of the Pacific Island Parties;

- Receive and handle requests for access under the MLS from Contracting Parties and International Institutions to PGRFA held in *ex situ* collections;
- **Where the PGRFA requested are already held in the CePaCT regional collection**, package and dispatch the material to the requesting Contracting Party or International Institution under the SMTA;
- **Where the PGRFA requested is not already held in the CePaCT regional collection**–
  - forward the request to the Pacific Island Party holding the PGRFA in its *ex situ* collection; and, at the election of the Pacific Island Party concerned,



- advise on the packaging and dispatch of the material to the requesting Contracting Party or International Institution,
- advise on compliance with applicable quarantine rules, and
- compile and sign the SMTA for the material as agent for the Pacific Island Party concerned.

The Pacific Island Parties hereby authorize the SPC acting as their agent to carry out the tasks specified above, and in particular to sign the SMTA in respect of the material requested on their behalf.

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*Article 4. Notices*

Notices in connection with the performance of the above functions shall be sent to the SPC at the following address:

\*\*\*\*\* (Regional Treaty Agency Officer)

Secretariat of the Pacific Community,

P.O. Box etc.

Notices in connection with the performance of the above functions shall be sent to the Pacific Island Parties at the following addresses:

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*Article 5. Termination*

This Agency Agreement may be terminated by the SPC, or by any participating Pacific Island Party in respect of its application to that Pacific Island Party, by written notice to the other Parties, such notice to take effect six months after its receipt.

*Article 6. Disputes settlement*

Any dispute regarding the interpretation or application of this Agency Agreement shall be settled by negotiation among the Parties concerned.

Any dispute regarding the interpretation or application of this Agency Agreement that cannot be settled by negotiation, may be referred by any Party to arbitration in accordance with the UNCITRAL Arbitration Rules<sup>1</sup> as at present in force. Any such award shall be final and binding on the Parties concerned. In any arbitration proceedings under this

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<sup>1</sup> United Nations Commission on International Trade Law. See [http://www.uncitral.org/uncitral/en/uncitral\\_texts/arbitration/1976Arbitration\\_rules.html](http://www.uncitral.org/uncitral/en/uncitral_texts/arbitration/1976Arbitration_rules.html)

Agency Agreement, the applicable law shall be General Principles of Law, to the exclusion of any national law.

*Article 7. Review*

The operation of this Agency Agreement shall be reviewed by the Parties to the Agreement every twelve months.

*Article 8. Amendments*

This Agreement may be amended by mutual consent among all the Parties.

*Article 9. Entry into force*

This Agency Agreement shall enter into force on its signature by SPC and by the authorized representatives of three Pacific Island Countries that are Contracting Parties to the Treaty.

Signed

For the Secretariat of the Pacific Community

Date of signature

Signed

For the Government of \_\_\_\_\_  
signature

Date of

Signed

For the Government of \_\_\_\_\_  
signature

Date of

Signed

For the Government of \_\_\_\_\_  
signature

Date of

## **B. OTHER FORMS OF ASSISTANCE THAT COULD BE PROVIDED BY SPC ON REQUEST**

### **• ASSISTANCE WITH IDENTIFYING MATERIAL IN THE MLS**

The SPC, subject to the availability of the necessary funds, and on request from the Pacific Island Countries concerned, will provide assistance to individual island countries on the implementation of the Treaty and in particular on the identification of the PGRFA that meets the criteria set out in Article 11.2 of the Treaty for automatic inclusion in the MLS, i.e. “*all plant genetic resources for food and agriculture listed in Annex 1 that are under the management and control of the Contracting Parties and in the public domain*”<sup>2</sup>.

### **• ASSISTANCE WITH SETTING UP WEBSITE LISTING MATERIALS**

The SPC is in the process of setting up a website listing PGRFA held by the CePaCT as well as that held by individual Pacific Island countries. On request, and subject to the availability of the necessary funds, SPC will provide assistance to individual Pacific Island countries that are Parties to the Treaty in notifying material included in the MLS to the Governing Body of the Treaty and, as appropriate, providing for the listing of such material on appropriate websites.

### **• ASSISTANCE IN HANDLING REQUESTS FOR ACCESS UNDER THE MULTILATERAL SYSTEM TO PGRFA HELD IN *IN SITU* CONDITIONS**

The SPC, subject to the availability of the necessary funds, and on request from the Pacific Island Countries concerned, will provide assistance to individual island countries in the handling of requests for access to PGRFA in *in situ* conditions under the Multilateral System. Any such assistance may include

- Arranging appropriate contacts;
- Advising on the terms and conditions for collecting missions;
- Participation in collecting missions, if so requested; and
- Conservation on behalf of the Pacific Island country concerned of material collected, where appropriate.

### **• OTHER ASSISTANCE**

The SPC, subject to the availability of the necessary funds, and on request from the Pacific Island Countries concerned, will provide assistance to individual island countries in the handling of requests for access to PGRFA outside the scope of the Multilateral System. Any such assistance may include assistance in negotiation of access and benefit-sharing conditions.

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<sup>2</sup> In this connection useful work has been done by the Ad Hoc Advisory Technical Committee on the Standard Material Transfer Agreement and the Multilateral System in clarifying the meaning of these terms.

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**APPENDIX 2**

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CATIE, Turrialba, 29 de Octubre del 2010

Dr. Shakeel Bhatti

Secretario

Tratado Internacional Recursos Fitogenéticos para la Alimentación y la Agricultura

Estimado Dr. Bhatti,

sirva la presente para saludarlo y a la vez dar respuesta a su carta "PL 40/31 - CATIE - Art.15: Letter requesting inputs for the Fourth Session of the Governing Body of the International Treaty on Plant Genetic Resources for Food", del 20 de setiembre del 2010.

En este sentido podemos hacer de su conocimiento que:

1. Tras el acuerdo firmado entre el CATIE y la FAO, por medio del cual el CATIE colocó todas sus colecciones de campo y de semillas ortodoxas bajo los auspicios de la FAO, podemos informar que el CATIE, con presupuesto propio, ha seguido dando mantenimiento a todas sus colecciones. Esta actividad se ha visto beneficiada con un aporte, a partir del 2008 y hasta el año en curso, a través de un proyecto financiado por el *Global Crop Diversity Trust*. Por medio de dicho proyecto se ha logrado hacer frente a limitaciones en equipo, personal y fondos operativos que garanticen la seguridad, viabilidad, salud, integridad genética y documentación del germoplasma que permitan ponerlo a disposición de los usuarios.
2. Actualmente se están injertando materiales de la colección de café con el fin de hacer resiembras y, en la medida de las posibilidades, hacer su duplicación y traslado a otra área de CATIE, de manera que pueda asegurarse su conservación. Es importante hacer de su conocimiento que durante el año 2009 no se distribuyeron internacionalmente materiales de la colección de café, hasta asegurar que los problemas de broca que se presentaron habían sido corregidos.
3. La colección Internacional de cacao ha sido duplicada y resembrada en dos nuevas áreas de manera exitosa.
4. CATIE está apoyando activamente la red regional REMERFI a través de un funcionario de plantilla que se desempeña como Secretario Pro Tempore de la red y por medio del apoyo al proyecto: *Regeneration and Safety Duplication of Regionally Prioritized Crop Collections: Red Mesoamericana de Recursos Fitogenéticos*, también financiado por el *Global Crop Diversity Trust*.
5. A partir del 8 de Julio del 2008, el CATIE empezó a entregar sus materiales utilizando para ello el Acuerdo Normalizado de Transferencia de Materiales (ANTM).
6. Los materiales hasta ahora entregados por el CATIE, haciendo uso del ANTM son:

Distribución	Número de accesiones	Tipo de solicitante	Objetivo de uso	País	Cantidad germoplasma
2008 Cajanus arabica	1	Agricultor	Producción	CR	1.25 K
	2	Internacional	Investigación	Bahamas	250 grs
Cajanus cajan					
<b>Distribución 2010</b> Lablab purpureus					
Cajanus cajan					
Pachyrhizus erosus	40	Internacional Agricultor	Investigación Producción	Costa Rica Colombia	1 kilo c/u
Pachyrhizus erosus	1	Universidad	Producción	Costa Rica	50 semillas
Cucurbita pepo	1				De cada una
Cucurbita maxima	1				
<b>Distribución 2009</b> Crotalaria	1	Agricultor	Producción	Costa Rica	10 grs
Mucuna	1				1 kilo
Theobroma cacao	2	Inst. Compañía	Investigación	Costa Rica	75-100 yemas
Lycopersicum sp	50	Nacional		CR	1 gr c/u
Cannavalia ensiformis	1	Agricultor	Producción	CR	4 kilos
Coffea arabica	19	Internacional	Investigación	Francia	
Coffea spp	22	Agricultor	Investigación	CR	100 grs dif. Peso
Allium sepa	19	Agricultor	Producción	Costa Rica	Diferentes pesos
Coffea spp	1				10 grs
Theobroma bicolor	1	Agricultor	Producción	CR	
Cajanus cajan	1	Regional	Producción	CR	200 gr c/u
Crotalaria					
Cucurbita spp	89	Inst. Internacional	Conservación	Taiwan	100 semillas C/u
Pachyrhizus erosus	1	Agricultor	Producción	CR	
Cannavalia ensiformis	1	Agricultor	Producción	CR	3 K
Capsicum spp	46			España	50 semillas de c/u
Lycopersicum spp	24	Compañía	Investigación		
Pachyrhizus spp	16	Internacional	Conservación	Perú	100 gr c/u
Theobroma cacao	12	Agricultor	Producción	CR	23 plantas c/u
Theobroma cacao	12	Agricultor	Producción	CR	4 plantas
Amaranthus	1				21 grs
Vigna unguiculata	3	Agricultor	Producción	CR	1 kilo y 50 grs. respectivamente
Theobroma cacao	2	Universidad	Investigación	CR	20 y 13 frutos respectivamente
Coffea arabica	3	Universidad	Investigación	CR	4.5 kilos de cada una

### Introducción de germoplasma de cacao en el 2010

Fecha introducción	Fuente	Número de introducciones	genotipos
Julio, 30	University of Reading, U.K.  Dr. Andrew Daymond	11  <u>**23 recibidos bajo MTA</u>	<p><i>CRINKLE LEAF, GU 263-V, LCT EEN-341/S2, LCT EEN-412, N-38 [T38], SC-9, U-45, U-70, UPA-134.</i></p> <p><u>**B 9/10-25, B 12/1, CL 10/5, CL 10/27, CRUZ 7/14, GU 243-H, ICS-63, IMC-31,</u></p> <p><u>IMC-50, JA-5/5, LV-20, LX-43, MO-4, MO-109, MOQ-6/19, NA-26, NA-33, NA-399, NA-670, PA-124 [PER], PA-156 [PER], POUND-15/A, SC-20</u></p>

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*APPENDIX 3*

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**Summary Data from the Mutant Varieties and Genetic Stocks Database and Repository (MGVS) of the Plant Breeding and Genetics Laboratory of AGE in relation to the use of the SMTA in the framework of the IT PGRFA.**

The FAO/IAEA Joint Programme of Nuclear Techniques in Food and Agriculture's (AGE) Database of Mutant Varieties and Genetic Stocks (**MVGS**) is an information portal of commercially or officially released mutant varieties, mutant genetic stocks, and mutation research publications. It consists of the following five sub-databases:

[Mutant Variety Database \(MVD\)](#),

[Mutant Genetic Stock Database \(MGS\)](#),

[Laboratory Protocols \(MLP\)](#),

[FAO/IAEA Publication Database \(MRP\)](#),

[Plant Mutation Reports \(PMR\)](#).

[Mutant Variety Database \(MVGS\)](#): Information about commercially or officially released mutant varieties.

[Mutant Genetic Stock Database \(MGS\)](#): Information, registration, and request for mutant genetic stocks, including individual mutant lines, TILLING populations, and other mutant derived populations for gene mapping and cloning.

[Laboratory Protocols](#) - Information, forms and protocols for genotyping and mutagenesis services and positive control kits for mutation discovery. Protocols were optimized for our laboratory.

[FAO/IAEA Publication Database \(MRP\)](#): A repository for searching and downloading all publications produced by the Joint FAO/IAEA Programme in the field of plant breeding and genetics.

[Plant Mutation Reports \(PMR\)](#): Joint FAO/IAEA Publication which publishes (mini) reviews, short communications and complete research papers in all areas of plant mutation research which focuses on mutagenesis, mutation induction, mutant characterization, and mutant applications. It also publishes description papers on mutant germplasm and mutant varieties.

It also provides a platform for posting news related to mutation breeding and research from Member States.

**MVGS** is intended as a public service for plant breeders and geneticists. Whilst every effort has been made to search all relevant publications no assurance can be given that all officially released mutant varieties and genetic stocks are included.

**October 15, 2010****Publications:**

- Tadele Z.; Mba C.; Till B.J. TILLING for mutations in model plants and crops. In *Molecular Techniques in Crop Improvement, 2<sup>nd</sup> edition*; Springer, Netherlands. **2010**; pp 307-332
- Till, B.J. Mutation detection in plants by enzymatic mismatch cleavage. In *The Handbook of Plant Mutagenesis and Mutant Screening (Mining of Natural and Induced Alleles)*; Wiley-Blackwell-VHC, Germany. **2010**; pp 131-148
- Till, B.J.; Jankowicz-Cieslak, J.; Sagi, L.; Huynh, OA; Utsushi, H; Sweenen, R.; Terauchi, R; and Mba, C. Discovery of nucleotide polymorphisms in the *Musa* gene pool by Ecotilling. *Theoretical and Applied Genetics*, **2010**, Jun 30 (Epub ahead of print)
- Lokko, Y.; Mba, C.; Spencer, M.; Till, B.J.; and Lagoda, P. Nanotechnology and Synthetic Biology: Potential in Crop Improvement. *International Journal of Food, Agriculture and Environment*, **In Press**
- Jain, S.H; Till, B.J.; Suprasanna, P, and Roux, N. Mutations and Cultivar Development in Banana. In *Banana breeding: constraints and progress*; CRC Press. **In Press**
- Cooper, J.L.; Henikoff, S.; Comai, L.; and Till B.J. TILLING and Ecotilling for Rice. In *Methods in Molecular Biology: Rice Protocols*, Humana Press. **Submitted**

**Conferences (Published abstracts) 2010:****Bradley J. Till, Joanna Jankowicz-Cieslak, Owen Huynh, Souleymane Bado, and Mirta Matijevic**

Reverse-genetic strategies for vegetatively propagated food security crops. BBSRC China-UK workshop on TILLING and associated technologies. The Botany Institute, Chinese Academy of Sciences. (Oral Presentation) Beijing, China, April 2010.

**Bradley J. Till, Souleymane Bado, Owen A. Huynh, Mirta Matijevic, and Joanna Jankowicz-Cieslak**



Reverse genetic strategies for vegetatively propagated crops. Primer Congreso Peruano DeMejoramiento Genetico de plantas Y Biotecnologia Agricola, La Molina, Peru, May 2010

Maghuly F., **Jankowicz-Cielak J., Till B.**, Calari A., Ramkat R. and Laimer M. Biotechnological approaches to the production of elite plant material of *Jatropha curcas*. In: IAPB, Sustainability through agricultural biotechnology: Food, biomaterials, energy, and environment. [Poster] IAPB Congress, St. Louis Missouri, USA, June, 2010

**Bradley J. Till, Joanna Jankowicz-Cieslak, Owen Huynh, Souleymane Bado, and Mirta Matijevic**

Induction, maintenance and recovery of mutations in vegetatively propagated plants. Plant Biodiversity and Food Diversification Symposium. (Oral Presentation) Cluj-Napoca, Romania, September, 2010

**Mutant Stocks in PBGL**

- *Oryza sativa*, genotype 3729, 4600 M2 plants in the greenhouse
- *Oryza sativa*, genotype Nerica and genotype 3737, M2 seeds: 7626
- Cassava, 3000 M1V4 putative mutants of Boma genotype;
- Banana, 1000 M1V10 putative mutants, genotype Grande Naine;
- Cassava Starch mutants: 4 lines
- Banana mutants, genotype Grande Naine ( Glass house): 30
- Appeal mutant ( Field) : Golden Heidegg
- Rice IAEA lines: IAEA 1-4 and STDV

**Mutant Stocks Produced in PBGL and shipped to counterparts under SMTA**

- Barley; Kenya, Poland
- Cassava (*Manihot esculenta*); DR Congo
- Castor bean (*ricinis comunis*);
- Coco yam; St, Vincent and Grenadines
- Cowpea (*Vigna spp.*); Zambia
- Durum wheat; Jordan
- Groundnut; Senegal
- *Jatropha Curcas*; Spain, Senegal
- *Lathyrus* ( *Euphorbia lathyris*); Spain
- *Nicotiana tabacum*; Switzerland
- Olive; Tunisia
- *Phyllanthus*; DR Congo
- *Primula vulgaris*; United Kingdom
- Rice ( *Oryza spp*); Madagascar, Tanzania, IRRI
- Sesame; Turkey

- Sorghum; Eritrea
- Sunsatia; Germany
- Zantedeschia aethiopica; Spain

### **Non-mutant Genetic Stocks in PBGL**

- **Cassava**

DR Congo	2 accessions
Burkina Faso	3 accessions
IIITA (Nigeria)	10 accessions
CIAT (Colombia)	7 accessions
- **Banana**

(under SMTA with ITC)	84 accessions in <i>in vitro</i>
Glass house Clone	17 clones
- **Ginger** (Jamaica) 3 accessions
- **Appeal** (Field) 1 Variety
- **Rice** (under SMTA with IRRI) 10 varieties
- **Orchids** 3 accessions

### **Training activities (projected through close 2010), including education on SMTA**

- Fellows: 24 (*including expected 6 fellows from Myanmar from 15 different countries*)
- Scientific visitors: 6 (*including expected visitor from Eritrea from 4 different countries*)
- Interns: 2 *from 2 different countries*
- Group training course: Interregional Training Course on Mutation Induction and Breeding for Cereal (Wheat and Barley) Rust Resistance and Climate Hardening/Harsh Environment Adaptation Part I.; June 7th to June 18th: 24 *participants from 19 different countries*
- SMTA, and information for its use, are distributed on the PBG website (<http://mvgs.iaea.org/LaboratoryProtocols.aspx>)