



TWA/35/12

ORIGINAL: English

DATE: July 7, 2006

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

**TECHNICAL WORKING PARTY
FOR
AGRICULTURAL CROPS**

**Thirty-Fifth Session
Beijing, July 3 to 7, 2006**

REPORT

adopted by the Technical Working Party for Agricultural Crops

1. The Technical Working Party for Agricultural Crops (TWA) held its thirty-fifth session in Beijing, People's Republic of China, from July 3 to 7, 2006. The list of participants is reproduced in Annex I to this report.
2. The TWA was welcomed by Mr. Yang Xiongnian, Deputy Director General, Department of Science, Technology and Education, Ministry of Agriculture, and by Mr. Liu Ping, Deputy Director General, Development Center for Science and Technology, Ministry of Agriculture. Mr. Wei Chaoan, Deputy Minister of Agriculture addressed a letter of welcome to the TWA participants. A copy of that welcome letter and of the welcoming address by Mr. Yang Xiongnian is included in Annex II to this document.
3. The session was opened by Mrs. Beate Rücker (Germany), Chairperson of the TWA, who welcomed the participants and, in particular, new participants to the TWA.

Adoption of the Agenda

4. The TWA adopted the agenda as reproduced in document TWA/35/1 Rev., with the addition of an item on the development of regional sets of example varieties for the Test Guidelines for Rice.

Short Reports on Developments in Plant Variety Protection*(a) Reports from members and observers*

5. The expert from Brazil reported that Brazil had been a UPOV member since 1998 and was bound by the 1978 Act of the UPOV Convention. Since 1998, the Brazilian authority, the National Service for Plant Variety Protection, had received over 1,100 applications, and had granted almost 900 plant breeders' rights, of which 644 were for varieties of agricultural crops, 50% being soybean varieties. He added that it was possible to protect plant varieties of 67 plant species and that national test guidelines had been developed for barley, coffee, cotton, French bean, oats, maize, pearl millet, potato, rice, sorghum, soybean, sugarcane, triticale and wheat. He reported that Brazil was in the process of revising its legislation on plant variety protection in order to extend the scope of the breeder's right to the harvested material, to restrict the farmer's privilege, to provide protection to varieties of all plant genera and species and to strengthen the enforcement of the breeder's right.

6. The expert from Denmark reported that there would be a change in organization of the Department of Variety Testing from the current Danish Institute of Agricultural Sciences (DIAS) to the Plant Directorate from January 1, 2007. He also reported on work with image analysis to observe petal characteristics in Oilseed Rape.

7. The expert from Finland reported changes in the administration involving the merging of the National Food Agency, the National Veterinary Agency and the Plant Production Inspection Center to form the Finish Food Safety Authority (Evira).

8. An expert from France reported on the enactment, on March 2, 2006, of Law No. 2006-245, which authorized the ratification of the 1991 Act of the UPOV Convention

9. The Chairperson reported on a project in Germany to develop application forms to be completed and submitted via the internet. The breeder could either submit the completed and duly signed form to the Bundessortenamt by surface mail, in which all information would be presented in the form of a two-dimension barcode, or could submit the completed form and, if appropriate, further information electronically via the internet using a high quality digital signature. It was anticipated that the scheme would be implemented by January 2007.

10. An expert from Japan reported that, in 2005, protection had been extended to some products directly derived from the harvested material: bean jam made from small beans; boiled rice; mat made from Japanese rush; and processed tea. He also reported on the extension of the period of protection from 25 years to 30 years for woody plants and from 20 to 25 years for other species, changes in the custom legislation providing for the protection of plant breeder's right and the ongoing work for the development of a regional set of example varieties of rice in conjunction with China and the Republic of Korea. The TWA noted that Japan planned to host a workshop on the enforcement of plant breeders' rights from November 15 to 17, 2006, in cooperation with UPOV.

11. The expert from Mexico explained that Mexico was bound by the 1978 Act of the UPOV Convention and provided protection to varieties of all plant genera and species. The DUS examination was based on information provided by the breeder. He added that several Mexican experts from different institutions had attended UPOV Technical Working Parties (TWPs) and some were the leading experts for a number of UPOV Test Guidelines. He further reported that national test guidelines for native Mexican crops, such as agave, were under development and

that the DUS criteria were also used for national listing and seed certification, in particular for species such as *Agave tequilana* var. Azul, cactus pear, marigold, Mexican lily and tigridia. The following information in respect to the origin of the application for plant breeders' rights in Mexico was provided: United States of America, 242 (37%); Mexico, 235 (36%); France, 65 (10%); the Netherlands, 68 (10%); Germany, 18 (3%) and others, 31 (4%). In respect of crops the following information was provided: agricultural crops: 278 protected varieties (42%); ornamental plants: 184 (28%); fruit: 142 (21%); vegetables 52 (8%); and others 3 (1%).

12. The TWA was informed that in the Netherlands, on January 1, 2006, the responsibility for the DUS testing of arable and ornamental crops was transferred from the Centre for Genetic Resources (CGN) to Naktuinbouw (the Dutch Inspection Service for Horticulture), which was already responsible for DUS testing of vegetable crops. As of that date, all varieties of agricultural, vegetable and ornamental species were tested by Naktuinbouw for National Plant Breeders' Rights (PBR) and Community PBR purposes. The results of the DUS tests were reported to the Board for Plant Varieties, the decision body of the Ministry of Agriculture for the grant of PBRs and National Listing. On February 1, 2006, the 1966 Dutch Plant and Seed Act was superseded by the 2005 Dutch Plant and Seed Act. Simultaneously, the Board for Plant Varieties was installed, supported by the Dutch Plant Varieties Office.

13. The expert from Poland reported that the new Polish seed law entered into force on July 2, 2006, and explained that the plant variety protection law was being amended, in particular with respect to the article concerning farm-saved seed.

14. An expert from the Republic of Korea reported that a meeting was held in the Republic of Korea in March 2006 with PVP experts from Japan with a view to establishing a regional cooperation system between North-East Asian countries. During that meeting, harmonization of Test Guidelines and the organization of ring tests for Chinese cabbage, rice and rose were discussed. The experts of the Republic of Korea informed the TWA that the 10th session of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT) would be held in Seoul from November 21 to 23, 2006. It was planned to hold a national seminar on November 20, 2006, where case studies on the use of molecular markers for DUS testing in several invited countries would be presented. It was planned to hold, on November 24, 2006, an international symposium on the "Application of molecular technologies for plant breeding and DUS testing" in cooperation with the National Seed Management Office (NSMO), KOSID and UPOV. All BMT participants would be welcome at that symposium.

15. An expert from Spain reported that the first meeting of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) was held in Madrid from June 12 to 16, 2006, hosted by the Government of Spain. A key outcome of that meeting had been the approval of the standard Material Transfer Agreement (sMTA), which would allow the Treaty to come into practical effect.

16. An expert from the United Kingdom reported on a European Community / Community Plant Variety Office project on the use of molecular markers in DUS testing in Winter Oilseed Rape involving Denmark, France and Germany and being coordinated by NIAB.

17. The experts from the Community Plant Variety Office (CPVO) of the European Community reported that, as of mid-July 2006, the CPVO had received 25,353 applications relating to more than 1,200 botanical taxa, 22.2% of which were agricultural crops, and that more than 12,000 breeders' rights granted by the CPVO were still in force. He added that, in the

preceding 12 month period, 2,848 applications had been filed, representing an increase of 4.8% in respect to the same period one year earlier, and that during the same period, 2,252 plant breeders' rights had been granted. The CPVO had organized seminars on the enforcement of plant breeders' rights in Brussels in October 2005, and in Warsaw in May 2006. A further seminar was planned for January 2007 in Madrid. The CPVO had initiated a strategic debate on the modalities of DUS for the future with the aim of analyzing possible ways to modify the present system at the CPVO for the benefit of the users of the system and as well as for the CPVO office. Discussion was planned to continue in autumn 2006. The experts reported the reduction in the annual fee from 300 Euros to 200 Euros, the ongoing development of a centralized database for variety denominations, which contained more than 400,000 entries and was available online on the CPVO website, and the change in the e-mail addresses for the CPVO staff.

18. The expert from Kenya reported that Kenya hosted the twenty-fourth session of the Technical Working Party on Automation and Computer Programs in Nairobi from June 19 to 22, 2006. He also reported on the establishment of a new seed policy with the intention to modify the legislation on plant breeders' rights in order to bring it onto conformity with the 1991 Act of the UPOV Convention.

(b) Reports on developments within UPOV

19. The TWA received an oral report from the Office of the Union on the latest developments within UPOV, including a presentation on the UPOV Report on the Impact of Plant Variety Protection.

Molecular Techniques

20. The TWA considered document TWA/35/2.

21. The TWA agreed that it would not be necessary to appoint a Chairperson for the Crop Subgroup for Vegetatively Propagated Crops because the meetings were intended to be held in conjunction with the sessions of the BMT and could be chaired by the BMT Chairperson. It also agreed that there should be clarification on whether Mr. Robert Cooke (United Kingdom) would continue as Chairman of the Crop Subgroup for Wheat and Barley.

22. Mr. Henk Bonthuis, Chairman of the BMT, noted that there had been very few meetings of the *Ad hoc* Crop Subgroups on Molecular Techniques (Crop Subgroups) and wondered if Crop Subgroups were still the most appropriate fora for consideration of molecular techniques. An expert from the United Kingdom considered that the Crop Subgroups continued to be important and noted that sufficient time was needed to generate the data for consideration by the Crop Subgroups. However, he wondered whether the work of the self-pollinated crops and cross-pollinated crops might be combined in a similar way to that agreed for vegetatively propagated crops. Mrs. Françoise Blouet (France), Chairperson of the Crop Subgroup for Oilseed Rape, explained that work was continuing in France in relation to maize and oilseed rape and confirmed that more time was needed to generate the data to be considered by the Crop Subgroups, particularly because data was now being obtained from very large numbers of varieties in contrast to the relatively small numbers used for earlier work presented at the Crop Subgroups. She emphasized the importance of the Crop Subgroups in ensuring that DUS experts reviewed work on molecular techniques in relation to DUS testing. The Chairperson expressed her support for the role of the Crop Subgroups. She also wondered

whether the Crop Subgroups should be invited to develop proposals concerning the possible use of molecular tools for variety identification in relation to the enforcement of plant breeders' rights, technical verification and the consideration of essential derivation. Mr. Bonthuis welcomed the discussion and noted that this had been a useful reminder of the importance of the Crop Subgroups for combining DUS and molecular experts.

23. The TWA reaffirmed its support for the work of Crop Subgroups. In addition, it noted that there could be some benefits in organizing sessions at the BMT for vegetatively propagated, self-pollinated and cross-pollinated crops, in order to facilitate discussions on horizontal matters.

24. The TWA agreed to propose to the Technical Committee that consideration be given to inviting the Crop Subgroups to develop proposals concerning the possible use of molecular tools for variety identification in relation to the enforcement of plant breeders' rights, technical verification and the consideration of essential derivation.

TGP Documents

25. The Office of the Union considered the TGP documents below on the basis of documents TWA/35/3 and TWA/35/3 Add.

(a) *TGP documents to which the Technical Committee has given highest priority:*

TGP/4/1 Constitution and Management of Variety Collections

26. The TWA agreed to propose the following with respect to document TGP/4/1 Draft 7:

2.1.1.2	to consider clarifying that variety collections include candidate varieties
2.1.2	the TWA noted that the current draft of TGP/4 did not include DNA material as a form of plant material for inclusion in variety collections. However, it considered that it would not be appropriate to include that possibility for the time-being
3	it was agreed that the title of Section 3 should be changed to avoid confusion with the use of the term " <i>management of reference collections</i> " as used in relation to Option 2 for molecular techniques (see documents TC/38/14 -CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add.). It was suggested to consider " <i>Maintenance of Variety Collections</i> " as a possible title.
3.1.2.2.2	an expert from the European Community suggested that the case of parent lines should not be restricted only to those parent lines submitted as a part of an examination of a candidate hybrid variety. The Office noted that the text had been worded specifically for the case of parent lines submitted as a part of an examination of a candidate hybrid variety in recognition of the fact that all varieties were potentially parent lines and also because parent lines submitted as a part of an examination of a candidate hybrid variety had a different status to varieties submitted for examination in their own right.

3.1.2.2.2	<p>the TWA noted the comments of the TWV and agreed that care should be taken not to give the impression that informing the breeder would safeguard their legitimate interests. The representative of the International Seed Federation (ISF) explained the ISF view that the breeder's consent should always be obtained before making available parent lines to other variety collectors. The TWA agreed that examples of measures which could help to safeguard the legitimate interests of the breeder should be provided including, in particular, consulting and informing the breeder, establishing a contract between the authority and the breeder and establishing a contract between authorities and other variety collectors.</p> <p>The TWA proposed that UPOV might develop a model contract / agreement between authorities and breeders for inclusion in document TGP/5 "Experience and Cooperation in DUS Testing" as a part of the revision of that document.</p>
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TGP/9/1 Examining Distinctness (document TGP/9/1 Draft 7)

27. The TWA discussed documents TGP/9/1 Draft 7 and TWA/35/9 and agreed to propose the following with regard to document TGP/9/1 Draft 7:

2.3.3.2	to have the wording "as a general rule, qualitative characteristics are not influenced by the environment", but to add a sentence explaining that there are exceptions to that rule and that an assumption should not be made. It was also proposed that the same explanation should be included in the relevant sections in TGP/8.
2.3.3.3	the TWA noted that the TWC had proposed that further guidance might be provided on the use of quantitative and pseudo-qualitative characteristics for grouping, but observed that it would be very difficult to go beyond the existing generalized text because the matter needed to be considered on a case-by-case basis
2.3.5.1	it was agreed that a reference should be made to the need for differences to be consistent
2.6	<p>the TWA proposed that the following changes should be made to Section 2.6 and, in addition, that the amended section should be moved after Section 2.3:</p> <p>(a) title of Section 2.6.1 to be changed to a title, such as "Combining and Weighting [Differences in] Characteristics", which made no reference to phenotypic distance;</p> <p>(b) the existing text in Section 2.6.1 to be deleted and replaced by a brief explanation that information on characteristics could be combined and weightings given to differences in characteristics in order to determine if varieties were "distinct plus" for the purpose of selecting varieties for the growing trial (and for organizing the growing trial in relation to Section 3). To further explain that, in such an approach, the characteristics would be considered on a characteristic-by-characteristic basis and that weightings would only be given to differences for a characteristic where those differences were, on the basis of experience,</p>

	<p>clear and consistent differences. It agreed that the explanation should, in particular, ensure that it was clear that it would not be appropriate to use a combination of many small differences in order to arrive at a “distinct plus” threshold;</p> <p>(c) Section 2.6.2.1 to be retained with the phrase “because they have a ‘distinctness plus’ GAIA distance with respect to” being replaced by “because they are ‘distinct plus’ from” in Section 2.6.2.1.1 and the deletion of “for the combined phenotypic distance” in the first sentence of 2.6.2.1.2.1; and</p> <p>(d) Section 2.6.2.2 to be deleted</p>
3.2	to be updated according to changes to Section 2.6
4.2.3 (a)	the extract from 5.4.1 of the General Introduction to be deleted and that explanation to be moved to Section 4.2.3 (b), where it would be explained in relation to qualitative, quantitative and pseudo-qualitative characteristics
4.3	it was noted that there was particular confusion over the indication of “VG” where individual plants or parts of plants were to be observed in order to record a single value for a plot. It was proposed that the explanation of the rationale for the indication of “G” and “S” should be clarified. In that respect, it was agreed that it would be helpful to reword the first sentence of Section 4.3.2.4 to read “In most cases, “G” provides a single record per variety and it is not possible or necessary to apply statistical methods in a plant-by-plant analysis for the assessment of distinctness.” and to include Section 4.3.2.4 in the explanation of the rationale for “G” and “S”.
4.4	the TWA agreed with the TWV proposal to include flavor, taste and smell in “V”
5.2.1.1 (b)	to read “Assessment by Notes / single variety records (“Notes”): the assessment of distinctness is based on the recorded state of expression of the characteristics of the variety”
5.2.3.14	<p>in addition to the possibility of a side-by-side comparison, to add the possibility to use statistical analysis to establish distinctness where a pair of varieties is not distinct on the basis of Notes and to provide Case 2 of Section 5.4.2.1 as an example. In the Case 2 example, to specify that any use of statistical analysis to establish distinctness should be in accordance with the requirements set out in TGP/8.</p> <p>Final sentence of Section 5.2.3.14 to read “However, in general, varieties with the same Note in the UPOV Test Guidelines would not normally be considered to be clearly distinguishable.”.</p>
5.2.4.13	the TWA agreed with the TWC proposal to delete “for cross-pollinated varieties”
5.2.4.21	to read “There are a range of other statistical methods that can be used in the examination of distinctness. Those include ANOVA and multiple range tests, providing the underlying assumptions are met.”
5.3 Table	to explain why the order of “Notes”, Side-by-side” and “Statistics” changes within the table
5.4.1	to delete “variety collections which contain”

5.4.2	to be deleted (see comments on Sections 2.6 and 5.2.3.14)
6.5	to delete “[panels of]”

TGP/10/1 Examining Uniformity

28. The TWA agreed to propose the following with respect to document TGP/10/1 Draft 4:

1.2	to add “It is therefore a matter for the authority to decide, in addition to those characteristics included in the UPOV Test Guidelines or national guidelines, which other characteristics it may include in its consideration of uniformity”
2.1	first two sentences to read “The variation in the expression of relevant characteristics within varieties is the basis for the assessment of uniformity. This variation has both genetic components and environmental components (e.g. temperature, light, soil etc.)”
2.3.1(a)	to consider providing an example for vegetatively propagated varieties
2.3.1(c)	to read “in cross-pollinated varieties (including synthetic varieties), variation in the expression of characteristics within varieties results from both genetic and environmental components. The overall level of variation is, therefore, generally higher in cross-pollinated and synthetic varieties. In relation to self-pollinated, vegetatively propagated and mainly self-pollinated varieties a higher genetic variation is accepted;”
2.3.1(d)	last sentence to read “The tolerance limits for uniformity of hybrid varieties are set ...”
2.4.2	to add “This can be determined by using a standard statistical procedure such as the χ^2 test.”
3.3	<p>last sentence to read “Thus, the uniformity of a variety may be determined exclusively by off-types, exclusively by standard deviations, or by off-types and by standard deviations.”</p> <p>The TWA heard that there were several crops where varieties were examined using a combination of off-types and standard deviations. It also noted that the table in Section 2.5 indicated that a combination of off-types and standard deviations would probably be needed in cross-pollinated varieties which were examined using quantitative and qualitative and/or pseudo-qualitative characteristics. Therefore, it was agreed that a new Section 6 “Combination of Off-types and Standard Deviations” should be created to provide guidance on the examination of uniformity where a combination of off-types and standard deviations was used. In particular, it was noted that it would be helpful to explain that standards would need to be set for both off-types and standard deviations and that a variety would need to meet both standards. It was also considered important to provide guidance on whether off-type plants should be disregarded from the calculation of standard deviations for some or all characteristics.</p>
4.2.3	it was agreed that atypical plants which were not off-types should be disregarded from the assessment of uniformity in all cases and not just in those cases where the assessment of uniformity was by off-types. Therefore, it proposed that the section be combined with Section 4.2.4.3 and moved into a

	general section. It also proposed that the section should explain that it may be necessary to undertake further investigations to determine whether atypical plants were off-types.
4.2.4.2	to read “An off-type plant may be clearly distinguishable for a single characteristic or may be clearly distinguishable for more than one characteristic on a characteristic-by-characteristic basis. However, there can be cases where the expression for individual plant characteristics do not make the plant clearly distinguishable, but, when put together, the differences indicate a plant that is atypical. The definition of an off-type implies that any atypical expression of a characteristic, even if that characteristic is not present in the Test Guidelines, could make a plant an off-type. However, the definition clarifies that any off-type plant must be “clearly distinguishable” in accordance with the principles in TGP/9 “Examining Distinctness”.”
4.2.5.1	the TWA supported version 2 on the basis that this would promote a more harmonized approach within UPOV, whilst still allowing some flexibility for exceptional cases.
4.3	it was noted that counting was an example of a form of measurement which could be used to identify off-types. It was also noted that it might be possible for “off-types” to be determined by statistical analysis of measurements (e.g. leaf length). However, for such cases, concern was expressed at how the link between the determination of off-types and the standard for distinctness could be achieved.
4.4.1.2	it was noted that the extract from the General Introduction addressed both mainly self-pollinated varieties and inbred lines of hybrid varieties, which could cause confusion. Therefore, the TWA proposed that further elaboration should be provided to explain that: <ul style="list-style-type: none"> (i) where appropriate, it was possible for the same tolerance to be used for truly self-pollinated and mainly self-pollinated varieties; and (ii) that an additional tolerance could be accepted for clear cases of out-crossed plants in inbred lines as well as plants obviously resulting from the selfing of a parent line in single-cross hybrids.
4.4.1.3	to read “The Test Guidelines recommend for a particular type(s) of variety a population standard and acceptance probability and provide the maximum acceptable number of off-types for a given sample size.”
4.4.1.4	to replace “acceptable number of off-types” with “maximum acceptable number of off-types”
4.4.1.5	to replace “maximum numbers of off-types” with “maximum acceptable numbers of off-types”
4.5	to make a cross-reference to TGP/13 “Guidance for New Types and Species”
5.2.1.4	text in brackets to read “(1.26 × standard deviations, 1.6 × variance and long-term LSD)”
5.3	to make a cross-reference to TGP/13 “Guidance for New Types and Species”

(b) *Other TGP documents:*

TGP/8 Use of Statistical Procedures in DUS Testing

29. The TWA considered documents TGP/8/1 Draft 4 and agreed to propose the following:

PART I	
Table of contents	The TWA agreed with the proposed structure and table of contents.
2.2.1.1	To refer to “independent growing cycles” in the first sentence.
2.2.3.1.3	To amend to explain that the COYD criterion has not been tested for combining data from different locations.
2.6	The TWA noted that some aspects of the section were not only relevant when statistical analysis would be used and supported a restructuring of the document to reflect that.
3	The TWA considered that it was important to include a section on the validation and calibration of data within and between observers. It noted that this would be relevant in relation to quality assurance. It was agreed that experts from France and the Netherlands should help to draft this new section.
	To provide references for standard statistical methods (e.g. ANOVA, X^2).
PART II	
General	To provide guidance in non-parametric methods. Australia will provide information in X^2 .
1	To redraft to avoid terms such as wrong and incorrect decisions, e.g. to speak about “risks”
	To restructure the section to reflect the actual practice and the importance of selecting an appropriate sample size.
new section	To give guidance for the $1.26 \times$ standard deviation/ $1.6 \times$ variance method
2	Australia will provide information and examples of using the LSD method, the multiple range test and the t test.
5	To update GAIA according to the changes proposed in TGP/9.
6	6.3.2 and 6.3.3 provides general useful information, to move them at the beginning of section 6.

TGP/12 Section 1 Development of Characteristics based on a Response to an External Factor

30. The TWA agreed to propose the following with respect to document TGP/12 Section 1 Draft 3:

2.2.1	to remove repetition of the introduction
2.2.3	to restructure the paragraphs to follow the order of the basic requirements ((a) to (f)) in the introduction
2.2.5	to replace the reference to an annex with a reference to the ISF website
2.2.10	paragraph to be reviewed to reflect the fact that quantitative characteristics are accepted as shown in paragraph 2.4.2
2.3.2	to clarify that the definitions are intended for UPOV purposes only. To explain that the term sensitivity is the opposite of tolerance.
2.4.2	to make reference to the general requirement for two notes difference in quantitative characteristics for the establishment of distinctness, as set out in TGP/9, i.e. to clarify that only pairs of varieties which were susceptible (Note 1) and highly resistant (Note 3) could be considered distinct on the basis of Notes
3.	to replace “resistant” with “tolerant” and “susceptible” with “sensitive” in relation to herbicide effects
3.2.2.2, 3.2.2.3	to remove the attribution of Notes to herbicide effects, except in relation to plant death, and to clarify that effects other than plant death are not being used as DUS characteristics
4	to be moved before Section 3 in recognition of the fact that Sections 2 and 3 concern resistance, whereas Section 4 concerns tolerance
4.1.5	to delete “In this first draft document”
4.2	<p>To delete reference to “GM” in the title and provide a brief explanation of the development of corn borer resistance through genetic modification in the introduction.</p> <p>The paragraphs up to 4.2.3 to be deleted and replaced by reference to the situation in UPOV concerning the use of molecular techniques as set out in documents TC/38/14 -CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add., explaining in particular that only a bioassay approach had been developed and that an Option 1(a) approach would require that a reliable linkage between the presence of the transgene and the expression of corn borer resistance be established</p>

TGP/13: Guidance for New Types and Species

31. The TWA agreed to propose the following with respect to document TGP/13/1 Draft 6:

2.1.3	to read “[...] In some instances, however, particular vigilance is required where this has a bearing on the consideration of distinctness – e.g. Festulolium: it may be that the introduction of characteristics from Festuca into Lolium does not necessarily render the candidate variety to be a Festulolium. For further guidance on the subject, please refer to Section 3.3 below.”
2.3	in relation to the proposal from the TWV for a section to be drafted on the process for developing descriptions where the variety is the first of the species to be examined for DUS by any member of the Union., the TWA suggested that any text should be developed in conjunction with Section 2.7
2.3.4	final sentence to be deleted
2.4.2	to be deleted or to be revised to avoid any general indications or assumptions with regard to the non-existence of varieties of common knowledge
2.4.4	numbering to be corrected
2.5.3	the sentences after 2.5.3 (c) to be moved to the beginning of Section 2.5 and the final sentence of Section 4.5.5 to be added to the text. To replace the guidance in 2.5 with a reference to the relevant sections in TGP/10 (currently Sections 4.5 and 5.3.)
3.3	to explain the importance of developing national guidelines as a first step before considering whether it would be appropriate to develop UPOV Test Guidelines
General	it was agreed that it would be helpful to review the report of the breeding panel, published by the Plant Breeders’ Rights Office in Australia, when preparing the next draft

32. The TWA noted that the Technical Committee and the CAJ Advisory Group would be invited to consider the situation of “multi-line varieties” and, in particular, whether they might be eligible for plant variety protection.

TGP/14 Section 2: Glossary of Technical, Botanical and Statistical Terms Used in UPOV Documents: Botanical Terms: Plant shapes (including hair types)

33. The TWA received a brief overview of document TGP/14.2.1(&.2) Draft 5 from the Office, but concluded that it would be more appropriate to await discussions in the TWF, TWO and TWV before considering the document in detail.

Program for the development of TGP documents

34. The TWA agreed with the program for the development of TGP documents as set out in document TC/42/5 Annex II with the exception that it proposed that document TGP/10 should be considered again by the Technical Working Parties in 2007.

Discussion on Draft Test Guidelines (Subgroups)

Coffee

35. The subgroup discussed document TG/COFFEE(proj.4), presented by Mr. Luís Gustavo Asp Pacheco (Brazil), and agreed the following:

3.5	to delete “Varieties resulting from crossing:”
4.2.4	to check the types of hybrids and method of propagation of the parents before proposing an approach for uniformity
5.3	to consider if further characteristics should be included
Table of characteristics (Char.)	
Char. 9	to provide photographs of the full range of variation in shape and to review the number of states accordingly
Char. 11	to read “Leaf: undulation of margin” and state 1 to read “absent or weak”
Char. 12	(+) to be added with illustration, or example varieties to be provided
Char. 13	(+) to be added with illustration. To check if it is a qualitative characteristic.
Char. 14	to read “Leaf: hairiness of domatia”
Char. 15	to have the states: few (3); medium (5); many (7)
Char. 16	to have the states: fully self-compatible (1); partially compatible (2); fully self-incompatible (3). To provide the percentage range of compatibility for each state and to check if it is a qualitative characteristic.
Char. 18	to provide improved illustrations and to have the states: narrow elliptic (1); medium elliptic (2); round (3)
Char. 22	example varieties to be provided
Char. 25	to check if a qualitative characteristic and, if not, to provide at least 3 states
Char. 26	example varieties to be provided
Char. 30	to check if characteristic is needed
Chapter 8.2	missing explanations and illustrations to be provided
Ad. 21	to provide explanation (not illustration)
Ad. 25	photographs (not illustrations) to be provided
9.	literature to be provided
TQ 4.2	to be provided
TQ 5	to be provided
TQ 6	to have the example Fruit: color / yellow / orange red
TQ 7.3	to check whether to delete

Common Millet

36. The subgroup discussed document TG/COM-MIL(proj.4), presented by Mr. Oleksandr Gonchar and Mr. Oleh Slyvchenko (Ukraine), and agreed the following:

2	General: to review the order of the paragraphs.
2.3.2	to read as follows (additions are underlined, deletions are strikethrough): “2.3.2 Panicles: if requested by the competent authority, at least 100 panicles should also be submitted. The panicles should be well developed and not obviously affected by any pest or disease. They should contain a sufficient number of viable seeds to establish a satisfactory row of plants for observation.”
3.3.4	to be deleted
3.4.3	to delete the information for first and second growing cycle and the tables for type of plots and plot parameters
3.5	to read as follows (additions are underlined, deletions are strikethrough): “3.5 <i>Number of Plants / Parts of Plants to be Examined</i> Unless otherwise indicated, all observations <u>for the assessment of distinctness and stability on individual plants</u> should be made on 20 plants or parts taken from each of 20 plants.” to delete the table for number of plants.
4.2.2	to read as follows (additions are underlined, deletions are strikethrough): “4.2.2 <u>Row plots</u> : For the assessment of uniformity, a population standard of 0.1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 1000 plants, 3 off-types are allowed. <u>In the case of a sample size of 100 plants, a population standard of 1% and an acceptance probability of at least 95 % should be applied.</u> ”
4.2.3	to read as follows (additions are underlined, deletions are strikethrough): “4.2.3 <u>Single panicle rows</u> : For the assessment of uniformity, a population standard of 95% <u>1%</u> and an acceptance probability of at least 4-95% should be applied. In the case of a sample size of 100 panicle rows, 3 off-type rows are allowed.”
Table of characteristics (Char.)	
Char. 3	to add (*)
Char. 6	to delete (+)
Char. 8	to read: “Stem: thickness of internode”
Char. 9	to be MG instead of VG
Char. 12	State 3 to read “moderately drooping” instead of “inclined”

Char. 13	to add (+)
Char. 14 and Char. 15	to be assessed at stage of development 65-69
Char. 16	to read: “Panicle: degree of curvature of lateral branches”
Char. 17	to be assessed at stage of development 65-69 to be indicated as QN and to add (+)
Char. 18	to be assessed at stage of development 65-69
Char. 19	to add (*)
Char. 24	Ukraine to provide missing example varieties for state “narrow elliptic (1)”
Char. 25	Ukraine to provide missing example varieties for state “light red (7)” and to add state “black (12)” and China to provide example varieties for it
Char. 26	QL, Ukraine to provide missing example varieties for state “absent (1)”
Char. 27	Ukraine to provide missing example varieties for states “small (3)” and “medium (5)”
Char. 29	to add (*) and (a)
Char. 30	to add (a)
New Char.	to add a new characteristic as follows: (+), 92, VG, (a), QL, Kernel: type, states of expression “waxy (1)” and “non waxy (2)”
8.1	to add: (a) To be observed on dehusked grain without polishing
Ad. 6	to be deleted
Ad. 7	to have one drawing without reference to the states of expression and without figures
Ad. 8	to read as follows (additions are underlined, deletions are strikethrough): <u>Ad. 8: Stem: thickness of internode</u> To be observed on the one middle third of the plant node, which is <u>conditionally divided into 3 parts (to be clarified)</u>
Ad. 10	to have one drawing without reference to the states of expression and without figures
Ad. 13	to be combined with Ad. 14
Ad. 14	to add the following explanation: “To be observed on 20 harvested panicles on a table”
Ad. 15	to improve the drawings and all same size
Ad. 16	Illustration to be clarified
Ad. 17	Notes of states 1 to 9
Ad. 18	Explanation to read as follows (additions are underlined, deletions are strikethrough): “To be observed in this <u>the middle third part</u> of the panicle”

Ad. 23	to read as follows (additions are underlined, deletions are strikethrough): “ <u>Ad. 23: Grain: size</u> The grain size <u>should be measured in millimeters</u> . is its geometrical quantity (GQC), which is determined by a formula: ” and the remainder of the explanation to be deleted
Ad. 24	to leave the drawings and the reference to the states of expression and to delete the rest
Ad. 31.1–31.6:	Wording to be improved and Ukraine to provide information on the type of medium and conditions for inoculation
9	to add: Zadoks, J.C., T.T. Chang and C.F. Konzak, 1974. A decimal code for the growth stages of cereals. Weed Research 14: 415 – 421
10.4.2	to add method of propagation
10.5	to add characteristics 9 and 10 and to delete characteristics 16 and 26

Festuca/Lolium hybrids (Festulolium)

37. The subgroup discussed document TG/FESTL(proj.2), presented by Mr. Michael Camlin (United Kingdom), and agreed the following

1. Subject	to read: “Hybrids resulting from the crossing of a species of the genus <i>Festuca</i> with a species of the genus <i>Lolium</i> (<i>x Festulolium</i>)
2.3	check possible reduction in the quantity of plant material to be submitted
Table of characteristics (Char.)	to consider the inclusion of characteristic for the degree of branching to delete states of expression 1 and 9 in any characteristic where there is no example variety for these states
Char. 1	to add example variety “Matrix” for state diploid (2); to add state of expression “hexaploid (6)” with example varieties “Felina” and “Hykor”
Char. 2	to delete states of expression 1 and 9 to delete example variety Emrys and the figures from all the states of expression
Char. 3 and Char. 4	to delete states of expression 1 and 9. New Zealand to provide example varieties
Char. 5	to delete the characteristic
Char. 6	ESA to check the stability of the characteristic and to delete states 1 and 9 and the figures (values) from the remaining states
Char. 7	to replace note (c) by (a), to delete example variety Emrys and the figures from all the states of expression

Char. 8	to delete states of expression 1 and 9, and the figures (values) from the remaining states of expression
Char. 9	to delete the characteristic
Char. 10 and Chr. 11	to add (+) and to delete states of expression 1 and 9, and the figures (values) from the remaining states of expression
Char. 12	to delete the characteristic
Char. 13 and Char. 14	to add (+) and to delete states of expression 1 and 9, and the figures (values) from the remaining states of expression
Char. 15	to delete the characteristic
Char. 16	to delete states of expression 1 and 9, and the figures (values) from the remaining states of expression
Char. 17	to delete states of expression 1 and 9. New Zealand to provide example varieties
Char. 18 and Char. 19	to delete states of expression 1 and 9, and the figures (values) from the remaining states of expression
Char. 20	to delete states of expression 1 and 9, example variety Emrys and the figures from all the remaining states of expression
Char. 21 and Char. 22	to delete states of expression 1 and 9, and the figures (values) from the remaining states of expression. The TWA considered these characteristics too labour intensive. It wonder whether they were really necessary and whether they provided additional useful distinctness information not provided by other characteristic. New Zealand to provide information in that respect.
8.1 (b)	to become <u>Ad. 2</u>
Ad 1	to read as follows (additions are underlined, deletions are strikethrough): The ploidy of the plant can be determined by standard cytological methods or by observing the occurrence of 5-band genotypes (which are present only in tetraploid varieties) in <u>phosphoglucose isomerase (PGI) isoenzyme electrophoresis</u>
9	to add the following: Meier, U., 1997. Growth stages of mono- and dicotyledonous plants: BBCH-Monograph Blackwell Science, Berlin, Vienna, a.o., pp 622
10.1	to update according to changes in section 1
10.5	to update according to changes in the Table of characteristics

10.7.4	<p>to read as follows (additions are underlined, deletions are strikethrough):</p> <p>7.4 Type - to include a characteristic to indicate whether a Lolium or a Festuca type variety.</p> <p style="text-align: center;">Festuca - type [] Lolium - type []</p> <p><u>Please describe inflorescence type and/or indicate other identifying characteristic/s :-</u></p>
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Grain Amaranth (document TG/AMARAN(proj.5))

38. The subgroup discussed document TG/AMARAN(proj.5), presented by Mr. Aquiles Carballo (Mexico), and agreed the following:

1	to provide method to differentiate ornamental and grain types or to cover all types and include some states of expression in the corresponding characteristics
3.3.3 and 3.3.4	to delete these sections
3.5	<p>to read as follows (additions are underlined, deletions are strikethrough):</p> <p>Unless otherwise indicated, all observations determined by measuring on individual plants for the assessment of distinctness (accepted if std. wording can be changed) should be made on 20 plants or parts taken from each of 20 plants.</p>
5.3	to include TQ characteristics as grouping characteristics and to complete the example varieties
6.5	to delete plot types
Table of characteristics (Char.)	General: to delete the notes for type of plot for observation
Char. 2 and Char. 3	to replace VS by VG
Char. 4 and Char. 5	to add example varieties
Char. 6, 7, 8 and 9	to replace VS by VG
Char. 10	to replace VS by VG and to have states of expression “entire (1)”; “serrate (2)” and “sinuate (3)”. Keep the same example varieties.
Char. 11	to delete the characteristic
New Char.	(), VG, QN; Leaf: ratio width/length; with states of expression “small (3)”; “medium (5)” and “large (7)”

New Char.	(+), VG, QN; Leaf: position of widest point; with states of expression “towards the base (3)”; “in the middle (5)” and “towards the apex (7)”
Char. 12	to replace VS by VG
Char. 13	to delete the characteristic
Char. 14	to replace VG by MG
Char. 15	to replace VS by VG
Char. 16	VG, QL, (e), to read: Stem: color of stripes:, with states of expression: “red (1)” and “purple (2)”
Char. 17 and 18	to replace VS by VG
Char. 19	to replace VS by VG and to read: “Petiole: intensity of anthocyanin coloration”
Char. 20 and 21	to replace VS by VG and to provide explanation
Char. 22	to replace VS by VG
Char. 23	to replace VS by VG, to provide illustration and to add example variety for state “V shaped(2)”
Char. 24	to replace VS by VG and to add example varieties to all states of expression
Char. 25	to replace VS by VG
Char. 26	to replace VS by VG, to read: “Inflorescence: compacity” and to add explanation
Char. 27 and 29	to replace VS by VG and to add explanation
Char. 31 and 32	to replace VS by VG
Char. 33 and 34	to replace MS by MG
Char. 35	to replace VS by VG
Char. 36	to replace VS by VG and to read: “Stem: form of cross section (at maturity)”, with states of expression: “circular (1)” and “undulate (2)” and keep the example varieties
Char. 37	to add example varieties
Char. 39	to replace VS by VG
Char. 40	to replace MS by MG
Char. 41	to add example varieties or to delete the characteristic
8.2	
Ad 4 to 9	to delete
9	to delete the last three references

39. The subgroup proposed that the revised Test Guidelines be presented to the Technical Committee for adoption subject to the agreement by correspondence to the new proposed example varieties as requested above.

Maize

40. The subgroup discussed documents TG/2/7(proj.1) and TWA/35/11, presented by Mrs. Françoise Blouet (France), and agreed the following:


General	it was agreed to try, in the first instance, to include all maize types in the Test Guidelines and to delete the text in brackets in Chapter 1. The subgroup noted that the revision of the electrophoresis characteristics would not be completed before 2007.
3.1	to correct the spelling of “growing”
3.3.1	to delete the second paragraph
3.4	final sentence to read “The test for each should be divided between at least 2 replicates.”
4.1.1	with regard to the TWV proposal that, for sweetcorn F1 hybrid varieties, the DUS examination should be undertaken on the hybrid and not on the parent lines using the hybrid formula approach, it was noted that this was already possible because the text read that “a pre-screening system ... <i>may</i> be established”
4.2	<p>to read</p> <p>“It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:</p> <p>For the assessment of uniformity of inbred lines and single hybrids, a population standard of 3% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 40 plants, 3 off-types are allowed. In addition, the same population standard and acceptance probability should apply to clear cases of out-crossed plants in inbred lines as well as plants obviously resulting from the selfing of a parent line in single-cross hybrids (clear difference in plant height, size of ear or earliness as well as proof through electrophoresis of enzymes).</p> <p>For three-way cross hybrids, double cross hybrids and open-pollinated varieties, the variability within the variety should not exceed the variability of comparable varieties already known.</p> <p>The assessment of uniformity for open pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.”</p>
Table of characteristics (Char.)	
Char. 4	to be indicated as QN
Char. 5	to be retained in Test Guidelines

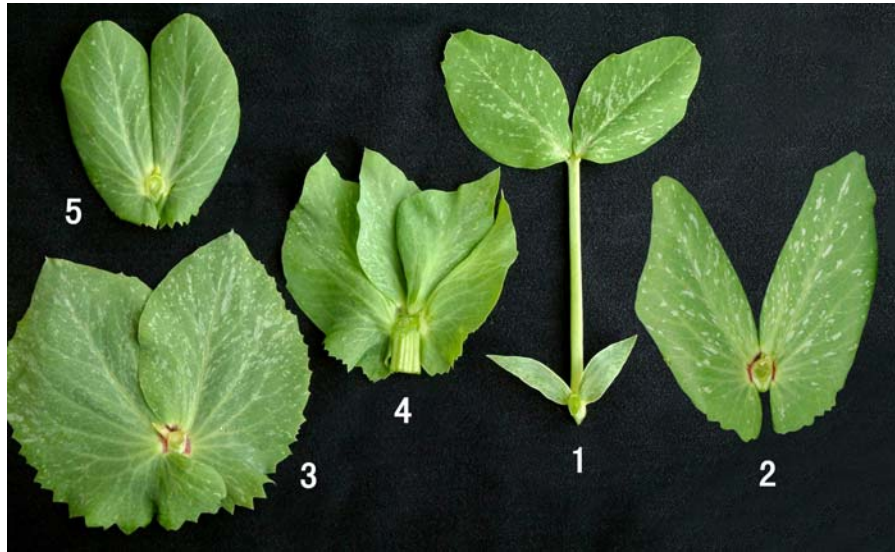
Chars. 6-13, 21, 24	information in brackets to be moved to Chapter 8
Chars. 7, 8, 12, 19, 20	to replace “main branch” and “main branch axis” with “main axis”
Char. 12	to add note “9” for very large
Char. 13	to be indicated as QN
Char. 17	experts from China to provide leading expert with color photographs of colors not included in the characteristic. Example varieties to be reviewed.
Chars. 19, 20, 21,	to replace “side branch” with “lateral branch”
Char. 20	to replace “ <u>upper</u> ” with “ <u>highest</u> ” and (+) to be added with illustration
Chars. 22.1, 22.2	to review whether to combine Chars. 22.1 and 22.2 and whether to extend the scale to more than 9 notes
Char. 23	to be indicated as QN
Char. 24(a)	to be deleted
Char. 24(b)	to be deleted
Char. 25	to read “Peduncle: length” and to delete growth stage “sweetcorn 75”
Char. 26	(+) to be added with an illustration for the characteristic
Char. 28	(+) to be added and example varieties to be checked. The expert from Mexico to provide an illustration and to provide data in support of the reliability of the characteristic.
Char. 28(a)	to be indicated as VG and growth stage 75. (+) to be added with an explanation of the conditions needed for examination of characteristic, highlighting the need for the ears to be well-developed for all varieties
Char. 29(a)	to be indicated as QL and to read “ <u>Sweetcorn and waxy varieties only</u> : Ear: number of colors of grains”. Characteristic to be checked.
Chars. 29(b), (c), (d), (e)	to replace “kernel” with “grain” (or vice-versa according to which is the most widely used term)
Char. 29(b)	to be checked in relation to Chars. 31 and 32
Chars. 29(c), (d), (e)	protocol and data for characteristics to be provided by Hungary
Char. 30	all experts to provide the leading expert with their explanations (and, if possible grain samples) for the grain types (states) which they propose for inclusion in the Test Guidelines as a basis for the leading expert to formulate the characteristic and an explanation. (+) to be added. To check if QL indication is correct.
Char. 31	to read “ <u>Excluding sweetcorn varieties</u> : Ear: main color of top of grain” and to add a new state “purple” after state “dark red”. To consider adding a new characteristic for secondary color. Example varieties to be provided. Growth stage “sweetcorn 75” to be deleted.

Char. 32	to be indicated as PQ and to read “ <u>Excluding sweetcorn varieties</u> : Ear: color of dorsal side of grain”. (+) to be added with an explanation of the dorsal side of the grain. Example varieties to be provided. To consider adding (*).
Char. 34	example varieties to be checked
Char. 34(a)	(+) to be added with an explanation to be provided by the experts from Hungary on how to observe the characteristic. To check if the characteristic is QL.
Chapter 8	photographs to be provided for as many characteristics as possible to help in the consideration of the next draft of the Test Guidelines
Chapters 8 to 10	The TWA noted that further revisions were planned for Chapters 8 to 10 and the Annex and did not consider Chapters 8 to 10 in detail

Pea (Revision) (documents TG/7/10(proj.3) and document TWA/35/11)

41. The subgroup discussed documents TG/7/10(proj.3) and TWA/35/11 and agreed the following:

Cover page	TWA agreed TWV proposal to add <i>Pisum arvense</i> L. as an alternative botanical name
Table of characteristics (Char.)	TWA agreed TWV proposal for translations to be reviewed
Char. 2	(*) to be deleted. Char. to be reconsidered after an explanation is provided on how to grow the plants and how to make the observation.
Char. 3	TWA agreed TWV proposal for (*) to be deleted
Char. 4	TWA agreed TWV proposal for (*) to be added, but TWA propose to be indicated as MS only
Char. 5	to read “Stem: number of nodes” with the explanation that the number means up to and including first fertile node to be provided in Chapter 8.
Char. 10	to introduce new characteristic for “Leaflet: type” covering the first three types shown below, as provided by experts from China:
	

Char. 11	TWA agreed TWV proposal for characteristic to be deleted
Char. 12	TWA agreed TWV proposal for “average” to be deleted, but proposed that explanation be provided. Growth stage for observation to be checked.
Char. 13	(+) to be added. To delete the section in brackets in French and German and to provide that as an explanation in Chapter 8
Char. 16	TWA agreed TWV proposal for (+) to be added with an explanation that distance refers to the absolute distance
Char. 18	to revise the characteristic to consider the types below provided by the experts from China:
	
	In the photo, 1 for Pin type, 2 for Long rabbit ear type, 3 for Broad type, 4 for multiple type, and 5 for None rabbit ear type
Char. 21	TWA agreed TWV proposal to add “(surface area)”
Char. 23	TWA agreed TWV proposal for characteristic to be deleted
Char. 24	TWA agreed TWV proposal to read “Stipule: lobe below axil” and to add state 1: absent or very short. To be indicated as MS/VG
Chars. 25, 26	TWA agreed TWV proposal for “(on the whole plant)” to be deleted
Char. 34	TWA agreed TWV proposal for state 1 to be deleted and for example variety “Picar” to be deleted from state 2
Char. 35	example varieties to be checked
Char. 37	spelling of “acuminate” to be corrected. (+) to be added with an illustration based on TGP/14.2.1(&.2) Draft 5, II, Section 2.4.3 (page 19)
Char. 41	TWA agreed TWV proposal: to be indicated as MS and to have the states: absent or few (1); medium (2); many (3). (+) to be added with an explanation of how the characteristic is calculated on the basis of averages across plants
Char. 45	TWA agreed TWV proposal: to read “Only varieties without entire parchment: Pod: thickened wall“
Char. 47	TWA agreed TWV proposal for characteristic to be deleted
Char. 49	TWA agreed TWV proposal for characteristic to be deleted

Char. 50	TWA agreed TWV proposal: to be replaced by a characteristic for type of curvature, similar to that used for bean.
Char. 54	TWA agreed TWV proposal for characteristic to be deleted
Char. 55	TWA agreed TWV proposal for characteristic to be deleted
Char. 56	TWA agreed TWV proposal: to be indicated as growth stage 226. (+) to be added with an explanation that the characteristic concerns the number of ovules and not the number of seeds.
Char. 58	illustrations to be provided and number of states to be checked. To find 3-dimensional term for “triangular”
Char. 60	to check if characteristic is necessary in addition to Char. 59 and, if so, explanation to provide illustrations of different types of dimples and wrinkles
Char. 61	TWA agreed TWV proposal: to delete underlined section. To check example varieties “Adagio” and “Zorba”
Char. 63 and Char. 67	to check if more color states needed . China to provide Leading Expert with photographs of seeds with and without testa for varieties with different colors of seed and colors of testa
Char. 66	TWA agreed TWV proposal to have the states: not colored (1); colored (2)
8.2	to delete all comments concerning the influence of the environment on the characteristics and to replace those comments with recommendations on how to observe the characteristic in a way which produces a reliable observation. (see example of rewording of Ad. 4.
Ad. 3	TWA agreed TWV proposal to read “The expression of fasciation is more clearly expressed in longer daylengths.” and to provide an illustration
Ad. 4	to read “The observations should be made on harvested plants when seed is green and fully developed. The measurement should include the first two nodes with scale leaves. Only the main stem should be recorded.”
Annexes	any information necessary for the observation of characteristics to be included in Chapter 8. The Annexes to be deleted and the relevant information to be collated in a paper, a reference for which should be made in Chapter 9 “Literature”.
General	the TWA did not have sufficient time to check the Test Guidelines in detail beyond the Table of Characteristics

Pearl Millet

42. The subgroup discussed document PRL_MIL(proj.3), presented by Mr. Luís Gustavo Asp Pacheco (Brazil), and agreed the following:

Char. 1	to read “Seedling: anthocyanin coloration of base of leaf sheath”
Char. 3	state 7 to read “moderately drooping”. Example varieties to be provided.
Char. 4	to have the states: transparent (1); white (2); greenish (3); brown (4)
Char. 5	to be indicated as DS3
Char. 10	to be deleted
Char. 11	to be indicated as VG. To add “absent or very weak” as state 1
Char. 13	to be indicated as VG
Char. 14	to be indicated as VG. (+) to be deleted.
Char. 15	to be indicated as MG. More example varieties to be provided.
Char. 17	to be indicated as VG. More example varieties to be provided.
Char. 19	to be indicated as QN
Char. 20	states to be re-ordered to: 1, 2, 5, 7, 3, 6, 8, 9, 4. More example varieties to be provided.
Char. 21	more example varieties to be provided
Char. 23	to have the states: absent or very weak (1); weak (3); moderate (5); strong (7)
Char. 24	to be indicated as QN and to read “Panicle: anthocyanin coloration of glume”. State 5 to read “medium”
Char. 25	to be deleted
Char. 26	to add state 1 “absent or very weak”. Example varieties to be provided
Char. 27	to be deleted
Char. 28	state 1 to read “absent or short”
Char. 29	to be indicated as QN
Char. 30	to be indicated as QL
Char. 34	to be deleted
Char. 35	to read “Scur: anthocyanin coloration at tip” and to add state 1 “absent or very weak”. Example varieties to be provided.
Char. 39	to be indicated as QN and to read “Culm: anthocyanin coloration of node” with the states: absent or weak (1); medium (3); strong (5)
Char. 40	to be indicated as QN and to read “Culm: anthocyanin coloration of internode” with the states: absent or weak (1); medium (3); strong (5). To check if it is necessary to introduce a separate characteristic for green and white internodes. More example varieties to be provided.

Char. 41	to add (*) and to be indicated as VG
Char. 42	“(Brix)” to be deleted
Char. 45	More example varieties to be provided
Char. 48	to review the states in relation to the variety collection
Char. 49	to check if the characteristic is QL
Char. 50	to change the notes to 1 to 5
General	to check whether all the characteristics are necessary and, if not, to select those which are easiest and cheapest to observe
Ad. 14	to be deleted
Ad. 42	to delete the absolute Brix values and provide example varieties
8.2	column “Approximate days after emergence” to be deleted
TQ 4	to check whether the section for hybrid schemes is necessary

Sesame

43. The subgroup discussed document TG/SESAME(proj.2), presented by the Office of the Union in the absence of the leading expert, and agreed the following:

2.3	to increase the quantity of seed to 50 gr.
3.3.4	to indicate the type of plot or to delete 3.3.4
3.4.1	to read as follows (additions are underlined, deletions are strikethrough): “3.4.1 Each test should be designed to result in a total of at least 50 plants, which should be divided between <u>at least</u> two replicates.” To indicate the type of plot.
Table of characteristics (Char.)	
Char. 1 and Char. 2	to be indicated as QL
Char. 3	States of expression to read: “basal only (1)”; “basal and upper half (2)”; “upper half only (3)”
Char. 5	to check whether is density or not, and provide explanation and whether it is QL absence/presence
Char. 6	to be indicated as MS
Char. 7	to be indicated as VG
Char. 10	Need example varieties (it is an (*) characteristic)
Char. 11	to provide a precise method of assessment and example varieties or to delete the characteristics

Char. 12	to read as follows (additions are underlined, deletions are strikethrough): “Leaf blade: <u>intensity of green color</u> ” with the same states of expression.”
Char. 14	Leaf blade: <u>venations</u> on lower side
Char. 17	to be indicated as QL
Char. 18	to provide explanation
Char. 19	to read as follows (additions are underlined, deletions are strikethrough): “Flower: <u>intensity of pink color</u> at outer side of corolla.”
Char. 20	to read as follows (additions are underlined, deletions are strikethrough): “Flower: <u>intensity of pink color</u> at inner side of lower lip” and to add explanation.
Char.21	to check whether is density or not, and provide explanation
new Char.	to be indicated as MS, to read “Plant: number of capsules” with states of expression “few(3)”, medium(5)” and “many(7)”. Rep. of Korea to provide example varieties and explanation
Char. 22	to be indicated as VG and QL
Char. 23	to add example varieties
Char. 24	to read: “Capsule: with”, to add explanation and example varieties
Char. 25	to check whether is density or not, and provide explanation, to check QL and absence/presence and to add example varieties
Char. 26	to be indicated as QL
Char. 27	to add explanations
new	to be indicated as PQ, VG, to read as follows: “Capsule: color at ripening”, with states of expression “yellowish green (1)”; “green (2)”; .”dark green (3)” and “purple (4)”
Char. 28	to be indicated as PQ, to add state “green (4)” and to provide example variety
Char. 29	to read as follows (additions are underlined, deletions are strikethrough): “ <u>Excluding varieties with white or black seed coat</u> : Seed coat: intensity of color”
Char. 30	to check whether is QL
Char. 31	Need example varieties (it is an (*) characteristic) and explanation
Char. 32	to add explanation
new	PQ, VG; to read as follows: “Stem: color at ripening”, with states of expression: “light green (1)”; “medium green (2)” and “purple (3)”
new	to check “Weight of 100 grains”
10.6	to insert examples

Sweet Potato

44. The subgroup discussed document TG/SWEETPOT(proj.1), presented by Mr. Keun-Jin Choi (Republic of Korea), and agreed the following:

General	to invite the Technical Working Party for Ornamental Plants and Forest Trees to consider the Test Guidelines coverage of ornamental varieties
Alternative names	to add “Patate dulce” (French) and “Camote” (Spanish)
1.	to delete “vegetatively propagated”
2.3	to delete “for each year of testing” and to check the number of plants to be supplied for ornamental varieties
3.1	to read “The minimum duration of tests should normally be a single growing cycle.”
3.4.1	to amend to 50 plants and to check the number in relation to ornamental varieties
3.5	to check the number in relation to ornamental varieties
4.2	to check the population standard in relation to similar crops
5.3	to check whether the characteristics are also appropriate for ornamental varieties
Table of characteristics (Char.)	
Chars. 1, 2	to add note (b)
Chars. 3, 4	to change state 5 to “medium” and to check if 9 states are too many
Char. 5	to check whether this should be Vine: anthocyanin coloration (absent or weak (1); medium (2); strong (3))
Char. 6	(+) to be added with an explanation of what is meant by the tip and to check whether it should be Vine: anthocyanin coloration of tip (absent or weak (1); medium (2); strong (3)) with a separate characteristic for intensity of green color
Char. 7	to check whether this should be Vine: anthocyanin coloration of node (absent or weak (1); medium (2); strong (3)). Example varieties needed for missing states.
Char. 8	to read “Vine: pubescence of tip” and (*) to be added. To check if the states should be sparse / dense. Example varieties needed for missing states.
Char. 9	state 5 to read “hastiform” and states 6 and 7 to be deleted. Example varieties needed for missing states.
Char. 10	to read “Leaf: lobing” or “Leaf: depth of sinus”
Char. 12	to check whether it should be Leaf color (upper side): anthocyanin coloration (absent or weak (1); medium (2); strong (3)) with a separate characteristic to describe the green color (yellow green (1); green (2); grey green (3))

Char. 13	to check whether it should be: QN, VG ,Leaf: distribution of anthocyanin on abaxial leaf vein, absent or very weak (1), weak (3), medium (5), strong (7), very strong (9); and to explain where to observe
Char. 14	to add illustration
Char. 15	to be indicated as VG/MS, to indicate where to observe, state 5 to read “medium”
Char. 16	to consider the splitting into the (or some of the) following characteristics: Ratio width/length, with states of expression: small (1); medium (2); large (3) Position of broadest part; with states of expression: at base (1); in middle (2); at top (3) Lateral outline; with states of expression: rounded (1); oblong (2); irregular (3)
Char. 17	(+) to be added with explanation of where and how to observe, and state (5) to read “medium”
Char. 18	to read: Storage root: main color of skin; to explain main color is largest surface area, to consider the addition of state “brown (9)”, “light purple (10)” and “medium purple (11)”; and to provide example varieties
new	to consider a new characteristic: Storage root: secondary color of skin. Australia to arrange for example varieties.
Char. 19	to read: Storage root: main color of flesh; to explain main color is largest area and to provide example varieties and to provide more example varieties. To delete the stage “dark cream”. Furthermore to have states “light yellow (4)” instead of “pale yellow (4)”; “medium yellow (5)” instead of “yellow (5)”; “light orange (6)” instead of “pale orange (6)” and “medium orange (7)” instead of “orange (7)”. to consider splitting the characteristics into Storage root: main color of flesh; with states “white (1)”; “yellow (2)”; “orange (3)” and “purple (4)” and then another characteristic: “ <u>Excluding white varieties</u> : Intensity of color”, with sates of expression “light (1)”; “medium (2)” and “dark (3)”.
new	to consider a new characteristic: Storage root: secondary color of flesh. Australia to arrange for example varieties.
Char. 20	(+) to be added with explanation of how to observe
General	Australia to arrange for information to be provided concerning flowering characteristics if these are necessary for distinguishing varieties
8.1(b) and (c)	to read as follows: “(b) characteristics which should be observed...(to provide a phenological stage) (c) Root storage characteristics which should be observed after harvest”
Ad. 9	State 5 to read “hastiform” and to delete states 6 and 7
10.4.2	to provide method of propagation of the variety

10.5	there are a lot of TQ characteristics (seem to be all * characteristics) which are not used for grouping
10.5.5	Vine: tip pubescence; (*) to be added to Table of Characteristics if retained as TQ characteristic
10.5.9	to add “(14)”
10.6	to use standard wording in the header of the second column

Tea

45. The subgroup discussed document TG/TEA(proj.2), presented by Mr. Liang Chen (China), and agreed the following:

Cover page	to correct botanical name to “ <i>Camellia sinensis</i> (L.) O. Kuntze”
Cover page	to check whether changing the coverage of the Test Guidelines to <i>Camellia</i> Section <i>Thea</i> would be acceptable for all interested experts
3.1	to read “The minimum duration of tests should normally be a single growing cycle.”
5.3	to be reviewed in conjunction with Technical Questionnaire characteristics
Table of characteristics (Char.)	Japan to provide additional example varieties
Char. 1	(+) to be added with explanation that “The vigor of the plant should be considered as the overall abundance of vegetative growth.”
Char. 2	to be indicated as QN with the states: shrub (1); semi-arbor (3); arbor (5) and example varieties to be provided
Char. 3	example varieties to be provided
Char. 4	to read “Plant: density of branches”
Chars. 6 to 11	to have note (b) added (Ad. 6 to 11 to become note (b) in Chapter 8.1 and existing notes (b) and (c) to become notes (c) and (d) – existing note (d) to be deleted (see comments to Char. 36))
Char. 7	(*) to be deleted (or example varieties to be provided)
Char. 10	to read “Young shoot: anthocyanin coloration at base of the petiole”
Char. 12	to have notes 1, 3, 5
Char. 15	to have the states: very narrow elliptic (1); narrow elliptic (2); medium elliptic (3); broad elliptic (4) and the illustration to be changed to the new order of states
Char. 16	(*) to be deleted (or example varieties to be provided). To be indicated as QN and state 1 to read “very light green”
Char. 18	to have the states: smooth or weakly rugose (1); moderately rugose (2); strongly rugose (3)

Char. 19	to be indicated as QN and to read “Leaf blade: length of acuminate tip” with the states: absent or short (1); medium (2); long (3)
Char. 20	state 1 to read “absent or weak”
Char. 22 (first)	to read “Char. 21”, to be indicated as QN and to have the states: weak (3); intermediate (5); strong (7)
Char. 22 (second)	to have the states: attenuate (1); acute (2); rounded (3)
Char. 23	(c) to be deleted and (+) to be added with an explanation of how to determine the time of full flowering
Chars. 24 to 34	to have note (e) added (Ad. 23-34 to be moved to Chapter 8.1 to become note (e))
Char. 26	to be indicated as QL
Char. 32	to be deleted
Char. 33	(*) to be deleted (or example varieties to be provided)
Char. 34	(*) to be deleted (or example varieties to be provided)
Char. 35	to be indicated as QN and (a) to be deleted
Char. 36	note (d) to be deleted (explanation in note (d) to be moved to Ad. 36) and to have the states: absent or very low (1); low (2); medium (3); high (4); very high (5)
Ad. 3	to be amended to correspond to the types in Char. 2
Ad. 6-11	to become new note (b) in Chapter 8.1. Separate illustrations needed for one and a bud, two and a bud etc.
Ad. 23-34	to become new note (e) in Chapter 8.1
Ad. 37	to read “Ad. 33”
TQ 5.2	to be deleted or example varieties to be provided
TQ 5.4	to be deleted or example varieties to be provided
TQ 6	new example to be provided

UPOV Information Databases

46. The TWA considered document TWA/35/4 and agreed to provide comments on the UPOV codes in Annex II by the middle of September 2006. The TWA was informed that the spreadsheets on the UPOV website containing the UPOV codes would be updated on a regular basis, probably around every two months. It was noted that the UPOV variety denomination classes could be revised in future as and when required.

Variety Denominations

47. The TWA noted the information provided in document TWA/35/5.

Project to Consider the Publication of Variety Descriptions

48. The TWA considered document TWA/35/6.

49. It was suggested that the cost of any project on the publication of variety descriptions should be added to the list of criteria. An expert from France noted that, for most agricultural crops, there were not very many grouping characteristics and that the value of a database would be limited for the purposes of the management of reference collections since the best way to ensure the quality of the management of the reference collection was to obtain plant material and to produce variety descriptions for the location in which the DUS test was conducted. She also raised particular concern with regard to publishing information concerning parent lines. The Chairperson expressed concern that the incorrect use of data in the database could lead to incorrect decisions and emphasized the need for clear guidance to minimize that risk if descriptions were published. The representative of ESA and ISF suggested that the development of databases of variety descriptions could help to raise the quality of reference collections and, therefore, of DUS testing. The expert from Australia noted that the publication of variety descriptions would lead to greater transparency which could improve the quality of DUS testing and suggested that it would be possible to be clear that the purpose was to improve the management of reference collections. He noted that the value of variety descriptions would vary according to the circumstances in each crop. An expert from the European Community wondered if it might be possible for authorities to publish variety descriptions of the grouping characteristics on a unilateral basis in order to ensure transparency.

50. In conclusion, the TWA noted that there were some potential benefits in the publication of variety descriptions, but noted that there were some risks and recognized that the work would have a significant cost. It also noted that there were no proposals for work within the TWA crops.

Development of Regional Sets of Example Varieties for the Test Guidelines for Rice

51. The TWA received a report on the development of regional sets of example varieties for the Test Guidelines for Rice from the Republic of Korea, a copy of which is provided as document TWA/35/6Add.

Drafters' Kit for Test Guidelines (document TWA/35/7)

52. The TWA noted document TWA/35/7 and agreed that the electronic template should not include the text of the additional standard wording.

“SELECT”: A Method for Identification of Varieties to be Excluded from the Growing Trial

53. The TWA considered document TWA/35/9 as a part of its discussion of document TGP/9/1 Draft 7. It was noted that the clarifications proposed for Section 2.6 of TGP/9/1 Draft 7 (see paragraph 26) demonstrated that a characteristic-by-characteristic approach was applied for both GAIA and SELECT. In particular, it was clarified that weightings would only be given to differences for a characteristic where those differences were clear and consistent. The use of a lower weighting for some characteristics is exclusively subject to a lower reliability of a characteristic due to environmental effects. Subject to modifications proposed for Section 5 of TGP/8/1 Draft 4 (see paragraph 28), it was concluded that SELECT

was covered by the GAIA methodology. Basic principles of GAIA are found in SELECT (weighting of differences and combining the characteristics). The options chosen in the particular example on barley (weightings, limitation of the number of characteristics considered, etc.) are possible options of GAIA and can be implemented in GAIA. The French experts expressed their opinion that SELECT is similar to GAIA.

Information on COY and Off-type Standards

54. The TWA noted documents TWA/35/10 and TWC/23/10 and agreed to suggest that the TWC investigate the variation within and between varieties for selected crops in order to determine whether harmonized standards would be appropriate.

Additional Characteristics

55. The TWA noted the information provided in document TWA/35/8.

Recommendations on draft Test Guidelines

(a) Test Guidelines to be put forward for adoption by the Technical Committee

56. The TWA agreed that the following draft Test Guidelines should be sent to the TC for adoption at its forty-third session, to be held in Geneva in March 2007, on the basis of the following documents and the comments in this report:

Common Millet	TG/COM_MIL (proj.4)
Grain Amaranth	TG/AMARAN (proj.5)

57. It was noted that the leading experts would need to provide the information necessary for the completion of the Test Guidelines above by the date indicated in Annex III. The Office would prepare the draft for consideration by the Technical Committee on the basis of the comments in this report and the information to be provided by the leading experts. Where indicated in the comments in this report, the draft would be circulated by the Office to the TWA for approval correspondence before submission to the TC.

(b) Test Guidelines to be discussed at the next session

58. The TWA agreed to re-discuss the following draft Test Guidelines at its thirty-sixth session in 2007:

Coffee*	(document TG/COFFEE (proj.4))
Festulolium*	(Festuca / Lolium hybrids) (document TG/FESTL (proj.2))
Lotus (Revision)*	(document TG/193/1(proj.3))
Maize (Revision)*	(document TG/2/7(proj.1))
Pea (Revision)*	(document TG/7/10(proj.2))

* indicates possible final Test Guidelines

Pearl Millet* (document TG/PRL_MIL (proj.3))

Sesame* (document TG/SESAME (proj.2))

Sweet potato (*Ipomoea batatas* (L.) Lam.) (document TG/SWEETPOT (proj.1))

Tea* (document TG/TEA(proj.2))

59. It was agreed that it would be useful to hold a joint meeting of the TWA and TWV subgroups to discuss the draft Test Guidelines for Maize and for Pea. The TWA agreed with the TWV suggestion that the TWA meeting in 2007 would be the most appropriate occasion for those meetings. The TWA proposed that the TWV be invited to consider the Test Guidelines for Sweet Potato.

60. The TWA agreed that it should start to establish or revise Test Guidelines for the following in 2007:

Buckwheat (*Fagopyrum esculentum* Moench) (new)

Flax, Linseed (Revision) (*Linum usitatissimum* L.) (document TG/57/6)

Foxtail millet (*Setaria italica* (L.) P. Beauv.) (new)

Urochloa (*Brachiaria*)(*U. brizantha*, *U. decumbens*, *U. humidicola*, *U. ruziziensis*) (new)

Agave spp.

and for the following in 2008:

Durum wheat (Revision) (*Triticum durum* Desf.) (document TG/120/3) to start in 2008

Hemp (*Cannabis sativa* L.) (new)

Pennisetum purpureum Schumach. (new)

61. The leading experts, interested experts and timetables for the development of the Test Guidelines are set out in Annex III.

Date and Place of the Next Session

62. At the invitation of Hungary, the TWA agreed to hold its thirty-sixth session in Budapest, from May 28 to June 1, 2007.

Future Program

63. The TWA proposed to discuss the following items at its next session:

1. Opening of the Session
2. Adoption of the agenda
3. Short reports on developments in plant variety protection

- (a) Reports from members and observers (oral reports by the participants)
 - (b) Reports on developments within UPOV (oral report by the Office of the Union)
4. Molecular Techniques
 5. TGP documents
 6. UPOV information databases
 7. Variety denominations
 8. Project to consider the publication of variety descriptions
 9. Project for exchanging seed of selected varieties between interested countries
 10. Development of regional sets of example varieties for the Test Guidelines for Rice
 11. Discussion on draft Test Guidelines (Subgroups)
 12. Recommendations on draft Test Guidelines
 13. Date and place of the next session
 14. Future program
 15. Report on the session (if time permits)
 16. Closing of the session

Visit

64. On the afternoon of July 5, 2006, the TWA visited the DUS Testing Center of the Ministry of Agriculture where it received a report on DUS testing for plant variety protection in China from Mr. Yang Kun and Mr. Tang Hao, Agronomist, Division of DUS Testing, Development Center for Science and Technology. The TWA also visited the Storage Center of Propagating Material in the Chinese Academy of Agricultural Science, and received a report from Mr. Lu Xinxiong and Mrs. Chen Xiaoling. Copies of the presentations made by Mr. Tang and by Mr. Lu are provided in Annex II to this report.

65. The TWA adopted this report at the close of the session on the basis that paragraph 53 would be amended and agreed by correspondence¹.

[Annexes follow]

¹ Paragraph 53 was agreed by correspondence (see Circular E_378).

ANNEX I

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II. ORGANIZATIONS

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III. OFFICER

Beate Rucker (Mrs.), Chairman

IV. OFFICE OF UPOV

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Raimundo LAVIGNOLLE, Senior Counsellor, International Union for the Protection of New Varieties of Plants (UPOV), 34, chemin des Colombettes, 1211 Geneva, Switzerland (tel.: +41 22 338 9565 fax: +41 22 733 0336 e-mail: raimundo.lavignolle@upov.int)

[Annex II follows]

TWA/35/12

ANNEX II

WELCOME LETTER

Mr. Wei Chaoan

Deputy Minister

Minister of Agriculture of P.R. China

Dear Distinguished Guests, Ladies and Gentlemen,

Today, we are pleased that the thirty-fifth session of the Technical Working Party for Agricultural Crops of UPOV is convening in Beijing. On behalf of the Ministry of Agriculture, I am honored to extend my warmest welcome to the foreign and domestic participants to attend this meeting.

Since we started to implement Plant Variety Protection Regulations in April 1999 and become party of the UPOV Convention, China has received great support from the UPOV Office and other UPOV member States. The plant variety protection system in China has shown significant achievements. I would like to take this opportunity to thank sincerely the UPOV Office and foreign experts for your great support in the field of plant variety protection in China.

China is developing and implementing a National Strategy on Intellectual Property Rights. The Chinese government will continue to strengthen its cooperation with the UPOV Office and other member states to improve the ability of creation, management, protection and exploitation of intellectual property rights, and jointly to facilitate the development of its plant variety protection system in the future.

WELCOME ADDRESS

Mr. Yang Xiongnian

Deputy Director General

Department of Science, Technology and Education and
Deputy Commissioner Plant Variety Protection Office,
Ministry of Agriculture

Thank you Chairperson, good morning, Ladies and Gentlemen,

The thirty-fifth session of the Technical Working Party for Agricultural Crops of UPOV is opening here in Beijing. On behalf of the Plant Variety Protection Office of the Ministry of Agriculture (MOA), I am honored to congratulate the opening of the conference and extend my warmest welcome to all participants attending this meeting.

The Chinese Government has paid more attention to the work of intellectual property rights, including the protection of Plant Breeders' Rights. Since the beginning of the Reform and Opening Up, especially in recent years, a large amount of human and other resources have been invested in the field of intellectual property protection. As a result, remarkable progress has been made in this area. The enforcement of laws and regulations concerning intellectual property rights has been intensified and the capability for examination and approval has been enhanced.

Since we started to implement Plant Variety Protection Regulations in April of 1999 and became a party to the UPOV Convention, China has received great support from the UPOV Office and other member States. We have drafted a set of regulations and established a technical support system as well as a law enforcement system. Great achievements have been shown in the field of plant variety protection.

Firstly, the MOA has established the PVP Office, Re-Examination Board for New Variety of Plants, the Plant Propagating Materials Storage Center, a DUS Testing Center and 14 DUS Testing Stations across the country. The examining and testing system for plant variety protection has been formed initially.

Secondly, the MOA has published six batches of protection lists for agricultural crops, and the total number of protected species or genera has reached to 62.

Thirdly, the MOA has developed national DUS test guidelines for 80 species or genera, including maize and rice. In addition, research on procedures for maize and rice variety identification using DNA-profiling techniques has been conducted.

By these efforts, the PVP system in China is being widely recognized and supported by plant breeders.

By the end of 2005, 3,374 applications had been received in China. Among them, 378 applications were filed with the State Forestry Administration and 2,996 to the MOA. The applications are growing at an annual rate of more than 40%. The sources of applications have expanded to almost all provinces. 109 applications from foreign breeders have been received by the MOA, of which, 77 cases were submitted in 2005, the number is larger than the total of the previous 6 years.

However, because of a short period of implementing PVP system in China, there is still a gap between China and some advanced countries in the area of the PVP management, in particular in the fields of examination and testing techniques. Therefore, we need to carry out further cooperation, learning from the experiences of the advanced countries to promote the development of plant variety protection in China.

By hosting the 35th session of the TWA, it provides an opportunity for our experts engaged in plant variety protection to participate in the session and exchange views with foreign colleagues. I am sure it will be beneficial to all participants.

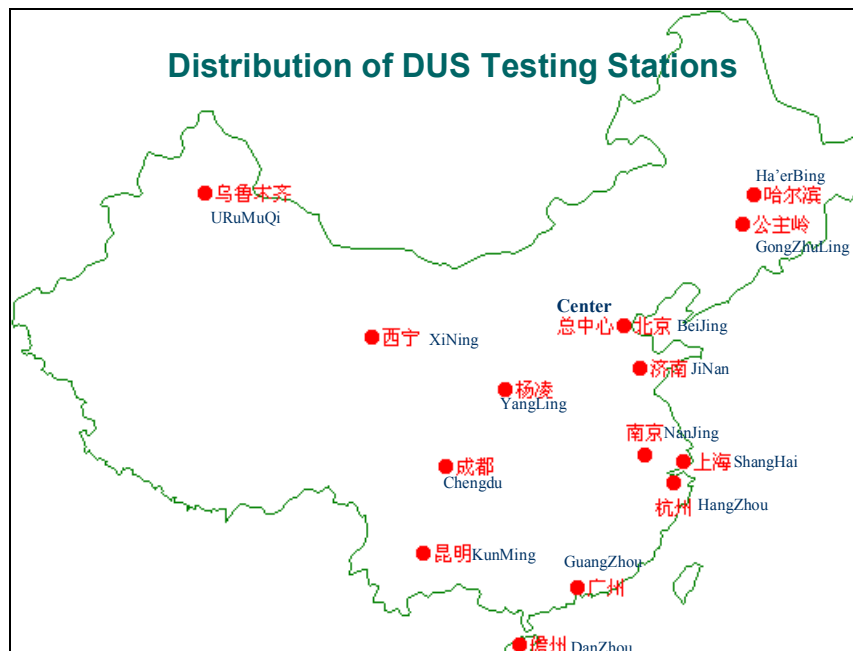
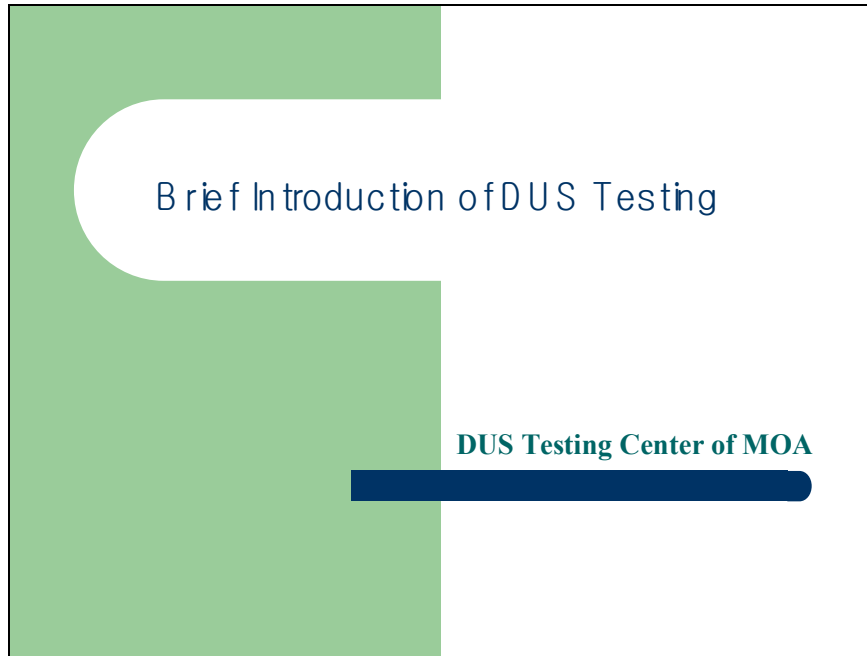
China is willing to strengthen cooperation with the international community and learn from each other to continuously promote the work of intellectual property rights protection. On behalf of the PVP Office of the MOA, I would like to take this opportunity to sincerely thank the UPOV Office and experts for their long-standing support and friendly cooperation with us in the area of plant variety protection. I also hope that the UPOV Office and experts will continue to pay attention to, and support China in the protection of, plant breeders' rights and other intellectual property rights in the future.

I wish the 35th session of the TWA a great success.

Thank you!

Presentation made by

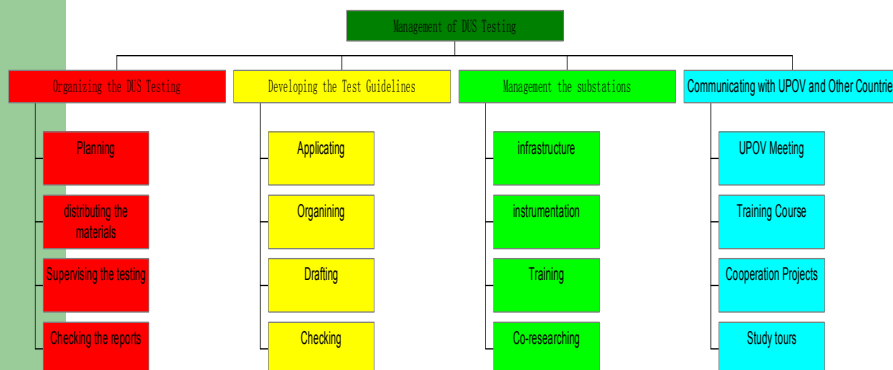
Mr. Tang Hao, Agronomist,
DUS Testing Center of Beijing
Division of DUS Testing, Development Center for Science and Technology

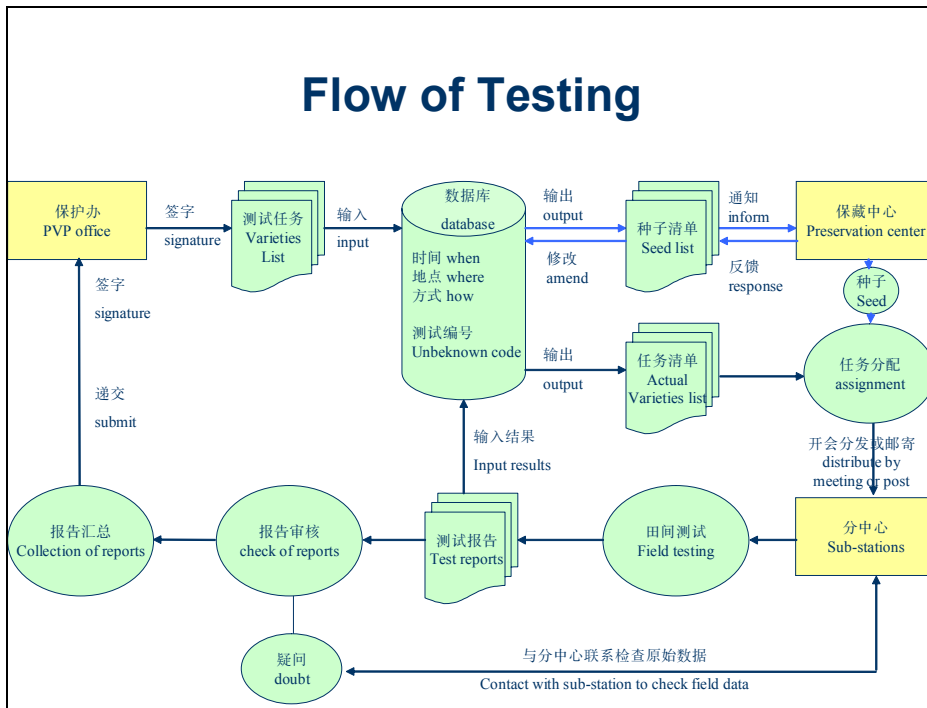
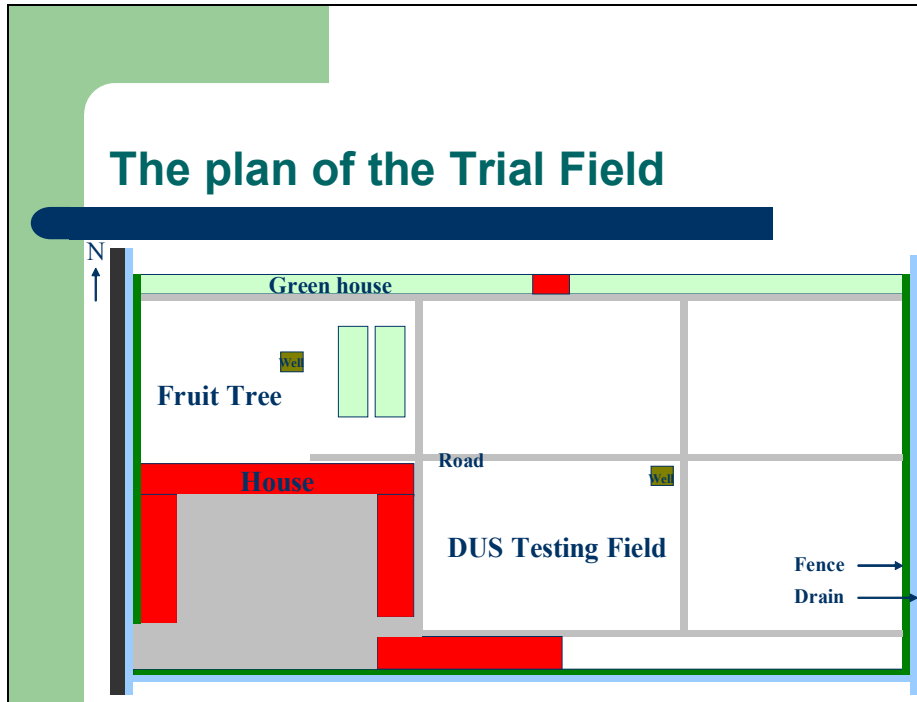


Details

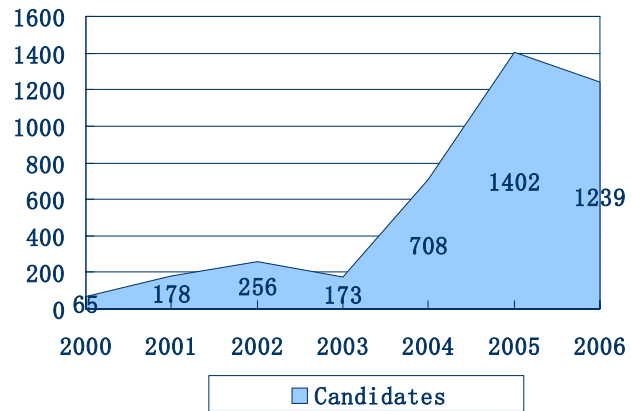
Name	Persons	Area(ha.)	Test Kinds
Testing Center	6	2	Crops
Beijing sub.	14	3.3	Vegetables and Ornaments
Gongzhuling sub.	9	6	North-east Plain Plants
Ha'erbining sub.	5	3	Special for Frigid Plants
Nanjing sub.	5	3.5	Changjiang River Plants
Jinan sub.	5	3	Huanghe River Plants
Shanghai sub.	5	3.3	Special for Vegetables and Ornaments
Hangzhou sub.	6	2	Special for Rice
Guangzhou sub.	4	3	Special for semi-tropical Plants
Chengdu sub.	10	4	South-west Plants
Yangling sub.	10	2	North-east Plants
Wulumuqi sub.	5	2.7	North-east Plants
Xining sub.	3	4	Special for High Altitude Plants
Kunming sub.	10	2	Special for Ornaments
Danzhou sub.	6	2	Special for Tropical Plants
Total	103	45.8	
Average	7	3	

DUS Testing Center

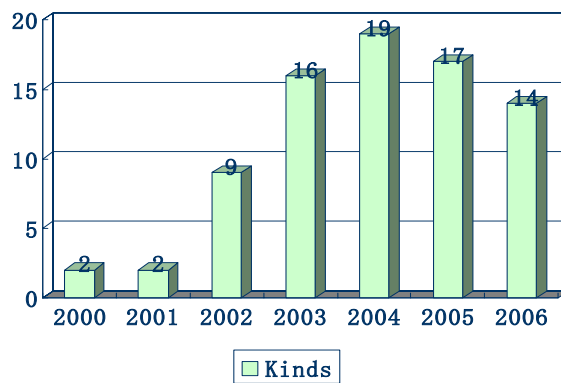




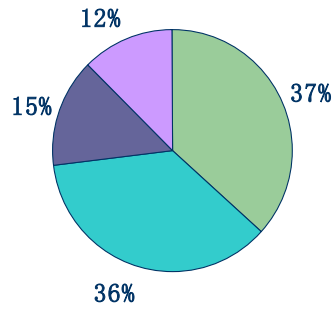
Number of Candidate Varieties in Testing



Number of Kinds in Testing



Statistic in 2005



■ Maize ■ Rice ■ Wheat ■ Others

Rice	526
Maize	526
Wheat	189
Rape	53
Soybean	41
Chinese Cabbage	18
Water Melon	10
Peanut	8
Tomato	7
Barley	6
Cucumber	6
Capsicum	4
Sweet Potato	3
Sorgum	3
Raddish	2
Cabbage	2
Potato	1

Thank you!

Presentation made by

Mr. Lu Xinxiong

Storage Center of Propagating Material
Chinese Academy of Agricultural Science

A Brief Introduction to
the Storage Center of the
Propagating Material

History

- It was established in 1999 and belongs to the Office for the Protection of New Varieties of Plants of MOA, P.R.China.

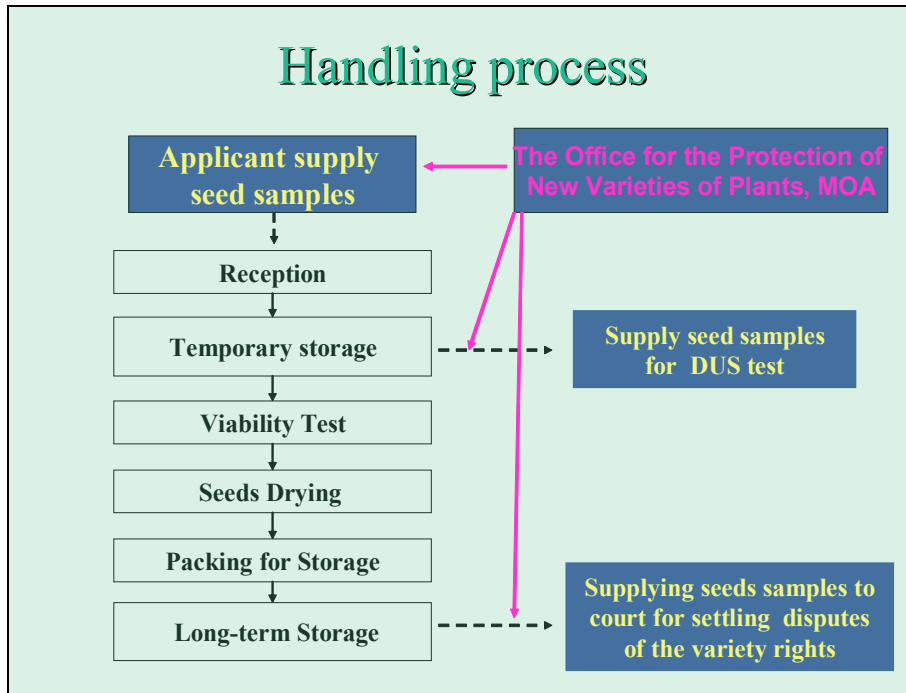


Mandates

- Storing the propagating material of protected varieties and their standard varieties (for 25years)
- Supplying seed samples for DUS testing
- Supplying seeds samples to court for settling disputes of the variety rights

Storage Facilities

Room designation	Capabilities	Area	Temperature	Humidity
Storage Facilities		m ²	°C	%RH
Long-term	100,000 samples	40*2	-18 ± 1	≤50
Temporary	5,000 samples	20	4 ± 1	
Seed Drying Room	5-8% seed moisture content	15	20 ± 3	10 ± 5
Packing Room	Reducing infiltration of moisture	20	20 ± 3	30 ± 5
Laboratories & Others	Seed viability testing, machinery & database, management	500	Airconditioned	Ambient conditions



Seed cleaning



Viability test



Drying & Packing



Storage



The varieties applied for plant variety protection rights stored in the Storage Center.

Crop	2000	2001	2002	2003	2004	2005	2006	Total
Maize	67	163	178	148	237	290	214	1297
Rice	9	63	86	129	310	313	168	1078
Chinese cabbage	4	1	6	3	4	7	3	28
Soybean		13	7	4	10	27	20	81
Barley					4	3	2	7
Tomato		1	2	3	4	4	5	19
Sorghum						7	1	7
Peanut		1	6		2	3		12
Pepper		6	3	6		6	3	24
Radish			1	1		1	1	4
Watermelon			5	5	2	4	3	19
Wheat		6	21	19	111	81	8	246
Rapes		6	6	9	31	16		68
Cabbage				2				2
Cotton						6	76	6
Other				1	5	1	11	18
Total	80	260	321	330	720	769	515	2916

Up to now, there are 2,916 varieties applied for plant variety protection rights stored in the Storage Center.

The numbers for supplying to court for settling disputes of the variety rights, crops including: maize, soybean, Chinese cabbage, peanut, pepper

2000	2001	2002	2003	2004	2005	Total
1	1	3	1	5	12	23

National Crop Genebank of China



5.1 Introduction

- China is one of the world's 8 mega diversity centers, it is very rich in biodiversity of the agricultural plant.
- National Crop Genebank was established in 1986.

5.1 Introduction

■ Mission


- To take charge of long-term conservation of crop genetic resources (in the form of seeds) in China.
- To take charge of medium-term storage and distribution of cereal crop genetic resources (in the form of seeds) in China.
- To develop methods to preserve plant propagules of species and accessions not currently in the base collection.
- To develop and improve technologies for evaluating viability, vigor, genetic integrity, and potential longevity of preserved germ plasm.

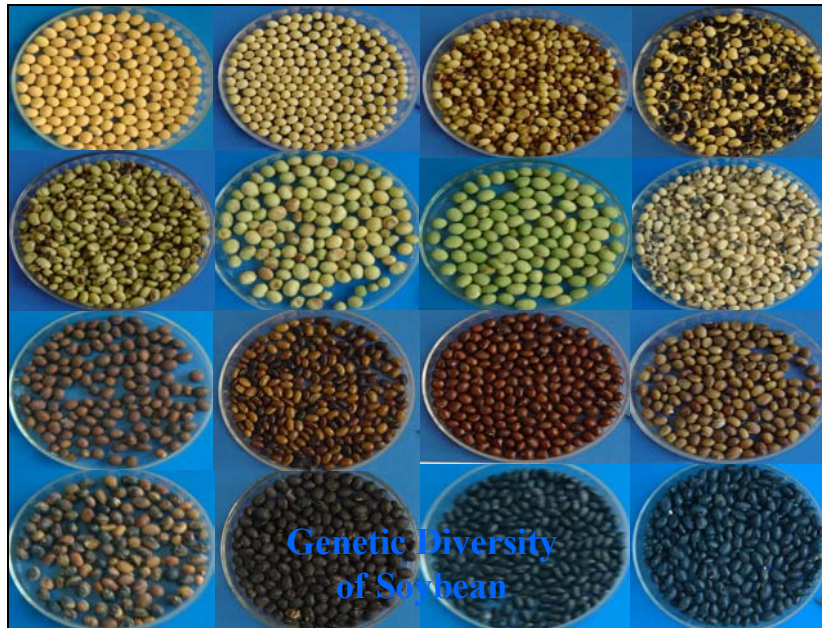
5.1 Introduction

■ Seed storage facilities

- Long-term seed storage: -18°C , RH $\leq 50\%$;
 - Capacities: 400,000 accessions for old facility,
 - 200,000 accessions for new facility
- Medium-term seed storage: -4°C , RH $\leq 50\%$;
 - Capacities: 500,000 accessions for new facility

5.2 Preserved accessions

 **345,000 Accessions ; 160 Crops ; 725 Species**



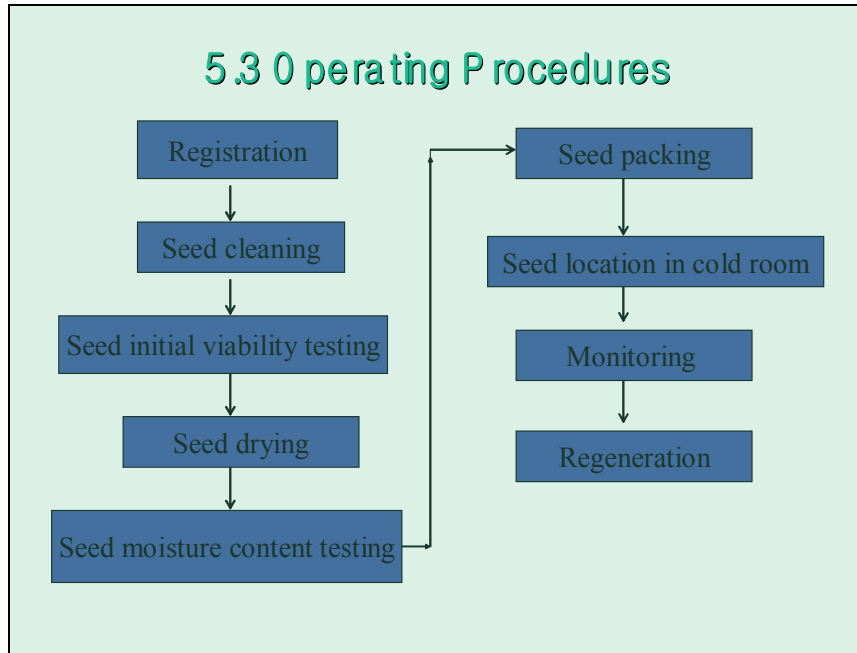


Crop germplasm resources stored in the National Genebank,ICGR-CAAS,Beijing

Crops	Number of Accessions	Number of Species	Crops	Number of Accessions	Number of Species
Rice	68800	21	Rape	6150	13
Wheat and relative plants	42050	134	Sesame	4660	1
Barley	18400	1	Castor	2010	1
Oat	3200	3	Peanut	6400	16
Buck wheat	2580	3	Safflower	2600	2
Maize	18200	1	Perillaseed	480	1
Sorghum	17500	1	Sunflower	2600	2
Millet	26500	8	Tobacco	3400	22
Proso millet	7960	1	Cotton	7091	19
Soybean	30100	4	Watermelon	1020	1
Food legume	27500	16	Muskmelon	980	1
Fibre Crop	4720	7	Green manure	663	71
Herbage	3700	387	Beet	1320	1
Vegetable	30100	132	Others	4686	8
Total	345,370	725*			

* Note: The total number of species excluding the repeated number of different crops

5.3 Operating Procedures



5.4 Genebank Standards

■ **Quantity standards for initial storage**

→ **for cross-pollinated species and collections involving a mixture of genotypes, 3,000-5000 viable seeds are requested for each accession.**

→ **for pure line and the parental of bred lines, over 3,000 viable seeds are requested for each accession.**

5.4 Genebank Standards

■ Quality standards for initial storage

- seeds should not be treated with chemicals.
- the initial germination rate $\geq 90\%$ (depending on the species)

5.4 Genebank Standards

■ Drying conditions

- drying temperature: 25-35°C, RH < 30% (depending on the species) for general crops; Natural desiccating in room temperature (RH < 50%) for oil crop seeds.
- 5-7% moisture content for general crops and 8% for soybean

5.4 Genebank Standards

■ Viability monitoring

- **monitoring interval** : the first monitoring can be done when seeds has been stored for more than 15 years.
- **monitoring pattern**: Seed viability monitoring should be done one by one of seed lots.



5.4 Genebank Standards

■ Regeneration standard

- when seed viability is below 65%, for cross-pollinated species is 75%.
- when seed quantities fall below 500 viable seeds.

5.4 Genebank Standards

■ Passport and supplemental information

— Genus and species; variety name or other identification; pedigree; reproductive biology (percent self pollination under normal growing conditions); improvement status (landrace, wild relative, cultivar, parental inbred, etc); collection information (longitude, latitude, elevation, location name, etc.); name and address of the donor; total seed number, average weight per 1000 seeds, etc.

5.5 Research activities

To develop protocols of seed viability monitoring and of non-destructive methods of viability testing. Characteristics and warning indexes of seeds viability losing and details of seed deterioration are being worked out. To develop cost effective or low input technology for *ex-situ* conservation of seed, studies on optimal moisture contents of seeds for storage are being conducted.

To undertake long-term conservation of vegetatives and recalcitrant seed *in-vitro* genebank, *in-vitro* cultures and cryopreservation techniques are being studied.

Studies were conducted to develop seed germination procedures for wild relatives of crops.

**Partial results of Cryopreservation
(Lily and horseradish)**



[Annex III follows]

TWA/35/12

ANNEX III

LIST OF LEADING EXPERTS

DRAFT TEST GUIDELINES TO BE SUBMITTED
TO THE TECHNICAL COMMITTEE IN 2007

All requested information to be submitted to the Office of the Union

before August 18, 2006

Test Guidelines	Document	Leading expert(s)
Common Millet	TG/COM_MIL (proj.4)	Mr. Oleksandr M. Gonchar, Mr. Oleh Slyvchenko (UA)
Grain Amaranth	TG/AMARAN (proj.5)	Mr. Aquiles Carballo Carballo (MX)

DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWA/36
(* indicates possible final draft Test Guidelines)

New draft to be submitted to the Office of the Union

before April 13, 2007

**(Guideline date for Subgroup draft to be circulated by Leading Expert: February 9, 2007
Guideline date for comments to Leading Expert by Subgroup: March 9, 2007)**

Species	Basic Document	Leading expert(s)	Interested experts (countries) ¹
<i>Agave</i> spp.	new	Mr. Aquiles Carballo (MX)	BR
Buckwheat (<i>Fagopyrum esculentum</i> Moench)	new	Mr. Mitsuo Yuasa, Mr. Masashi Noto, Mr. Ryusaku Kashiwagi (JP)	(AT), (CZ), DE, FR, (HU), KR, PL, QZ, (RU), (UA)
Coffee*	TG/COFFEE (proj.4)	Mr. Luís Gustavo Asp Pacheco (BR)	KE, MX
Festulolium * (<i>Festuca</i> / <i>Lolium</i> hybrids)	TG/FESTL (proj.2)	Mr. Michael Camlin (GB)	AR, CZ, DE, DK, FR, HU, NL, NZ, QZ, ZA

¹ for name of experts, see List of Participants or List of Participants of Technical Committee

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Annex III, page 2

Species	Basic Document	Leading expert(s)	Interested experts (countries) ²
Flax, Linseed (Revision) (<i>Linum usitatissimum</i> L.)	TG/57/6	Ms. Francoise Blouet (FR)	(AT), BG, BE, CA, (CN), (CZ), DE, GB, (HU), JP, NL, (NZ), PL, QZ, (RO), (RU), (UA)
Foxtail millet (<i>Setaria italica</i> (L.) P. Beauv.)	new	(Mr. Xianmin Diao) (CN)	(HU)
Lotus (Revision)*	TG/193/1(proj.3)	Mr. Carlos Gómez (UY)	AT, DE, FR, GB, NZ
Maize (Revision)*	TG/2/7(proj.1)	Mr. Joel Guiard (FR) / Mr. Tamás Harangozó (HU ³)	AR, AT, BG, BR ³ , CA, CN, CZ, DE ³ , ES, KE, KR, MX, NL, PL, QZ, SK, UA, ZA ³
Pea (Revision)*	TG/7/10(proj.2)	Mr. Niall Green (GB) TWV	CA, DE, DK, ES, FI, FR, GB, HU, NL, NZ, PL, QZ, ZA
Pearl Millet*	TG/PRL_MIL (proj.3)	Mr. Luís Gustavo Asp Pacheco (BR)	AT, ES, FR, KE, MX, UA, RU.
Sesame*	TG/SESAME (proj.2)	Mr. Baruch Bar-Tel (IL)	BG, BR, CN, JP, KR
Sweet potato (<i>Ipomoea batatas</i> (L.) Lam.)	TG/SWEETPOT (proj.1)	Mr. Keun-Jin Choi (KR)	CA, CN, NZ, JP, KE, ZA
Tea*	TG/TEA(proj.2)	Mr. Lin Xiangming (CN)/ Mr. Evans O. Sikinyi (KE) (joint leading experts)	BR, JP, KR
<i>Urochloa</i> (<i>Brachiaria</i>) <i>U. brizantha</i> , <i>U. decumbens</i> , <i>U. humidicola</i> , <i>U. ruziziensis</i>	new	Mr. Luís Gustavo Asp Pacheco (BR)	AU, MX

² for name of experts, see List of Participants or List of Participants of Technical Committee

³ Includes interest in sweetcorn

DRAFT TEST GUIDELINES TO BE PRESENTED
AT THE THIRTY-SEVENTH SESSION OF THE TWA IN 2008

Species	Basic Document	Leading expert(s)	Interested experts (countries) ⁴
Durum wheat (Revision) (<i>Triticum durum</i> Desf.)	TG/120/3	Mr. Tanvir Hossain (AU)	AR, (AT), (AZ), BG, CA, ES, FR, (HR), (HU), (IL), MX, (NZ), (PT), QZ, (RO), (RU), (SK), (UA), ZA
<i>Pennisetum purpureum</i> Schumach.	new	Mr. Luís Gustavo Asp Pacheco (BR)	AR, AU
Hemp (<i>Cannabis sativa</i> L.)	new	Mr. Henk Bonthuis (NL)	AU, CA, FR, GB, (HU), PL, QZ, (RU), UA, ZA

[End of Annex III and of document]

⁴ for name of experts, see List of Participants or List of Participants of Technical Committee