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UPOV

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS

Thirty-Second Session
Tsukuba, Japan, September 8 to 12, 2003

REPORT

adopted by the Technical Working Party for Agricultural Crops

Opening of the Session

*1. The Technical Working Party for Agricultural Crops (TWA) held its thirty-second session in Tsukuba, Japan, from September 8 to 12, 2003. The list of participants is reproduced in Annex I to this report.

2. The TWA was welcomed by Mr. Sanji Takemori, Director, Seeds and Seedlings Division (SSD), Ministry of Agriculture, Forestry and Fisheries (MAFF), and Mr. Kiyohumi Kuwana, President, National Center for Seeds and Seedlings (NCSS). Copies of their speeches are reproduced in Annex III to this document.

*3. The session was opened by Mr. Michael Camlin (United Kingdom), acting Chairman of the TWA, who welcomed the participants and, in particular, new participants to the TWA. He also welcomed, as observers, ten experts who were participating in a training course on plant variety protection, organized by the Japan International Cooperation Agency (JICA) from August 13 to October 25, 2003.

* The asterisked paragraphs in this draft report are reproduced from document TWA/32/10 (Report on the Conclusions)

Adoption of the Agenda

*4. The TWA adopted the revised agenda as reproduced in document TWA/32/1 Rev.

Short Reports on Developments in Plant Variety Protection

(a) Reports from members and observers

5. The TWA received oral reports from the participants on developments in plant variety protection in their respective countries and organizations. The expert from Australia reported that a new database including full descriptions and photographs of protected varieties had been developed and was available on the internet. The expert from Brazil reported that 600 applications for plant breeders' rights had been filed, 300 of which were for soybean varieties. The expert from Kenya reported that 200 plant breeders' rights had been granted and that exchanges of DUS test reports had been implemented with the national authorities from France, Germany and the Netherlands. He especially thanked the representatives from those countries for their cooperation. It was also then explained that plant breeders' rights had also been granted on the basis of DUS testing conducted in Kenya. The expert from the Republic of Korea reported that a restructuring of the national office had started. The expert from Zimbabwe reported that Zimbabwe had sent its legislation to the Office of the Union for comment and now needed to provide its implementing regulations. He explained that the assistance of the members of the Union would be important. The expert from the European Union (EU) reported that, from May 2004, the EU would incorporate ten new members, thus increasing its membership to 25. The expert from the Community Plant Variety Office (CPVO) reported the recent establishment of a legal framework for test guidelines that would be the common basis for both plant variety protection and the listing of plant varieties in the Common Catalogue of the European Community. This legal framework provided a reference to the CPVO technical protocols or, where these did not exist, to the UPOV Test Guidelines. He reported on the development of new CPVO technical protocols, and on the modification of the fee structure aimed at decreasing the fees paid by the applicants and the availability of appeals' procedure information on the CPVO website.

(b) Reports on developments within UPOV

*6. The TWA received an oral report from the Office of the Union on the latest developments within UPOV.

Molecular Techniques

(a) Report on developments

7. The Office of the Union introduced documents TC/38/14-CAJ/45/5 and TC/38/14 Add.-CAJ/45/5 Add. explaining the recent developments in UPOV concerning the use of biochemical and molecular techniques for DUS testing. Presentations on the models presented to the *Ad hoc* Subgroup of Technical and Legal Experts on Biochemical and Molecular Techniques (BMT Review Group) were made by experts from France (Option 1(a) – Proposal 1; Option 2 – Proposals 2, 3 and 4)), the United Kingdom (Option 3 – Proposal 6), and the Office of the Union on behalf of the Netherlands (Option 3 – Proposal 5). The TWA noted, in particular, the recommendations made by the BMT Review Group

concerning the possible use of molecular techniques in DUS testing and the opinions of the Technical Committee (TC) and the Administrative and Legal Committee (CAJ). With regard to Option 3 - Proposal 6, the expert from Australia, taking into account the possibility that the molecular markers used expressed differences in the non-coding part of the genome, from which no phenotypical difference could be expected, wondered how it could be possible to select the most similar varieties of common knowledge to be included in the growing trial. The expert from the United Kingdom agreed that it could be possible for two varieties, which were very close from the genetic point of view, to be different in the field and he added that two of the molecular markers used for Proposal 6 were linked to phenotypical characteristics. Experts from France asked the Office of the Union to present the subject in a way which presented the possible advantages and disadvantages in a similar way and would not appear to present only the possible advantages.

(b) Ad hoc Crop Subgroups and the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)

*8. Mr. Luis Salaices (Spain), Chairman of the *Ad hoc* Subgroup on Molecular Techniques for Sugarcane, reported on the outcome of the first session of the Crop Subgroup for Sugarcane, which had met in Rio de Janeiro, Brazil, on September 27, 2002, on the basis of document BMT-TWA/Sugarcane/1/4.

*9. In the absence of Mr. Marcelo Labarta (Argentina), Chairman of the *Ad hoc* Subgroup on Molecular Techniques for Soybean, the expert from Germany made an oral report on the first meeting of the Crop Subgroup for Soybean which had met in Rio de Janeiro, Brazil, on September 27, 2002, on the basis of document BMT-TWA/Soybean/1/4.

10. Mr. Gerhard Deneken (Denmark) provided an oral report on the eighth session of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT), which had taken place in Tsukuba, Japan, from September 3 to 5, 2003. He reported, in particular, that the BMT had concluded that there was an urgent need to harmonize methodologies for the generation of molecular data in order to ensure that the quality of the data produced would be universally acceptable for use in variety characterization and that it would also be useful to provide guidance on the planning of databases for molecular data. On this basis, the BMT had agreed that the Office of the Union, in conjunction with a nominated group of experts, should prepare a guidance document ("BMT Guidelines"). Once agreed, the BMT Guidelines would be circulated to the TC, the Crop Subgroups and the BMT and would be considered further by the BMT at its ninth session. An expert from France noted that there was some possible ambiguity between options 2 and 3, since the management of reference collections required decisions on distinctness. He clarified that option 2 was based on the use of "distances" between varieties in the management of reference collections and, in particular, did not use a characteristic by characteristic approach. He noted that there could be a risk of wrong decision on distinctness when not all varieties of common knowledge were included in the reference collections and that it would be possible to consider more varieties if the relevant information on varieties was available in a database. In that respect, option 2 operated on the basis of a "Distinctness plus" threshold, i.e. a tool was used to define a threshold higher than that required for distinctness, which ensured that there would be a very low risk of a wrong decision. Varieties which did not exceed the Distinctness plus threshold would be included in the growing trial for the examination of distinctness. However, with regard to option 2, the problem was that, for the time being, there was a poor relationship between molecular distance and phenotypic distance which meant that the Distinctness plus threshold had to be very high. He then explained that the option 3 approach involved the use

of molecular characteristics on the same basis as existing Test Guidelines characteristics and noted that this could allow the use of very large numbers of molecular characteristics to erode the level of difference between varieties. For example, using SNPs in lettuce could create 2 million characteristics. He noted that, in response to this concern, some experts had proposed to limit the number of molecular characteristics which could be used, however, he was of the view that it would be difficult to refuse the use of further molecular characteristics if these were requested by breeders. With regard to possible future developments, he anticipated that options 2 and 3 might merge as more molecular markers from expressed regions of the genome became available and the correlation between molecular and morphological distances improved. Such developments would also improve the efficiency of the Distinctness plus under the option 2 approach. An important tool in the development of the option 2 approach could be the PREDIP software being developed to combine molecular and phenotypic data, in a similar way to that used in France for combining isozyme and morphological data using the GAÏA software. He concluded by emphasizing that, above all, it would be necessary to ensure that any future approaches safeguarded the quality of protection offered to breeders. The expert from Germany considered that it was a new approach and supported the need to develop precisely defined tools to deal with the management of variety collections. An expert from the United Kingdom supported the previous interventions and reported that work would be carried out jointly with experts from France in wheat and oilseed rape. He further explained that the development of molecular markers linked to morphological characteristics was possible but it was expensive to do and took time.

*11. The expert from Brazil reported that Brazil and Argentina were cooperating in the development of methodologies and molecular markers in soybean and that they hoped to be able to present results from this work in 2004. He also reported that France had supplied them with the GAÏA software, which Brazil planned to use in its studies.

*12. The expert from Australia reported that Mr. George Piperidis (Australia) had sent DNA samples to various laboratories in other countries to help to develop standardized methods, but this would have to be repeated following problems experienced in the shipment. He also reported that Mr. Piperidis had drafted a standard protocol for the use of molecular markers, but this had been finished too late to be submitted to the BMT. The expert from Australia agreed to send this document to the Office of the Union to help in its drafting of the BMT Guidelines.

Project to Consider the Publication of Variety Descriptions

*13. The TWA considered document TWA/32/2 and received oral reports from Mr. Henk Bonthuis (Netherlands), joint-coordinator for potato with the CPVO, and Mr. Gerhard Deneken (Denmark), coordinator for barley.

Potato

*14. With regard to the model study on potato, the TWA heard that lists of varieties had been received from 6 of the 11 interested parties and that the number of varieties for which

descriptions could be provided were as follows:

Canada	61
Czech Republic	179
Germany	190
Israel	22
Netherlands	298
South Africa	50
Total	800

*15. It was agreed that the deadline for other interested parties (Austria, Chile, Estonia, New Zealand and United Kingdom) to submit their lists would be extended until December 1, 2003. It was proposed that the model study should include the 326 varieties mentioned in more than one list, as summarized below, plus additional varieties provided by other interested parties before the December 1, 2003, deadline.

Varieties from 6 sources	2
Varieties from 5 sources	3
Varieties from 4 sources	24
Varieties from 3 sources	82
Varieties from 2 sources	215
Total number of varieties	326

*16. The TWA then heard that the program plan was as follows:

> Step 2: To approach the interested parties and ask them to provide (if possible in electronic form) for each requested variety: Variety denomination, breeders reference, full description, Test Guidelines used for the description, year of description, place of description, indication if it concerned an official variety description that had been used as a basis for granting right or listing, or if it concerned a description as a part of the description of the reference collection. This request will be transmitted in the form of a table to the participating countries in early October 2003. The variety descriptions would be requested to be submitted to the coordinator by December 1, 2003.
>
> Step 3: The study plan would contain the analysis of the degree of variation (standard deviations) among the variety descriptions, differences among descriptions from similar varieties and among descriptions from different varieties by different grouping criteria. For instance: Variation might be described and analyzed according to regional differences, by a group of characteristics or by a group of varieties etc. Varieties and characteristics might also be classified based on the stability of the description. Similarity indices (considering the variation involved) might be developed to describe the morphological distance among varieties for (relevant) characteristics. This study would be done in the first half of 2004.

Barley

*17. The TWA agreed that the model study for barley should cover all barley and not just spring barley types. It was agreed that, in order to study variation within and between

varieties as far as possible, the Office of the Union would issue a request for descriptions for all varieties for which contributors could make descriptions available. The request would allow countries to indicate where they had already contributed data to the earlier study reported in document TWA/29/19 and where they did not wish to provide further information.

*18. The TWA noted the suggestion of the expert from France that the GAÏA software might be a useful tool for comparing descriptions in the study.

Project for Exchanging Seed of Selected Varieties Between Interested Countries

*19. The TWA considered document TWA/32/4 and received an oral report from Mr. Chukichi Kaneda, Association for International Cooperation of Agriculture and Forestry (AICAF), Japan. In addition, the participants viewed the demonstration trial during the technical visit on September 10, 2003. Mr. Chukichi Kaneda agreed to prepare a document for the thirty-third session of the TWA, comparing the descriptions of the varieties grown in the trial in Tsukuba, Japan, with the descriptions produced in the countries providing the seed. It was agreed that the participating countries would provide their variety descriptions, for the listed characteristics, to Mr. Kaneda as soon as possible. The TWA also agreed that the project should be repeated with interested countries in 2004, with the aim of identifying the minimum number of example varieties which could constitute an “East Asian” set of example varieties.

*20. In the absence of the expert from New Zealand, the Chairman reported that there had been an exchange of seed of White Clover varieties in Autumn 2002, between New Zealand, South Africa and the United Kingdom. The intention had been that these would all be planted in all the participating countries, but he had not been able to confirm if this had occurred. He reported that the varieties had been selected from the characteristics included in the Technical Questionnaire of the Test Guidelines for White Clover.

*21. The expert from Germany reported that there had been an exchange of seed in 2002 to examine flower color in Lupins. A similar exchange of seed between France and Germany in 2003 had been successfully used to clarify the different growth types in Lupin and had revealed that it was necessary to provide a separate explanation of growth type for winter and spring types of Lupin.

Review of UPOV Information Databases

*22. The TWA considered document TWA/32/3.

23. The TWA noted that, in addition to interspecific hybrids, intergeneric hybrids also used the letter “X” as the fifth letter in the genus element of the UPOV code (e.g. Festulolium: UPOV code “FESTX”, Triticale: UPOV code “TRITX”). The expert from Denmark proposed that the relevant UPOV codes should be referred to in the Test Guidelines. Experts from Denmark and France supported the inclusion of the variety denomination class in the database. The TWA agreed that the UPOV Plant Variety Database (UPOV-ROM) should have a field which allowed the variety denomination class for each UPOV code to be indicated.

*24. The TWA concluded that the most effective way of checking the UPOV codes would be to invite individual experts to check certain genera and species in document TC/39/13, Annexes I and II, as follows:

Beets	Mrs. Beate Rücker (Germany)
Brassicas and linseed	Mrs. Françoise Blouet (France)
Cereals	Mrs. Anne Weitz (CPVO)
Forage grasses	Mr. Michael Camlin (United Kingdom)
Forage legumes	Mr. Tanvir Hossain (Australia)
Grain legumes	Mrs. Beate Rücker (Germany)

and to provide their comments to the Office of the Union by December 1, 2003.

TGP Documents

TGP/7 Draft 3: Development of Test Guidelines

*25. The TWA agreed to propose the following amendments to document TGP/7 "Development of Test Guidelines" Draft 3:

2.5.2.1 / 2.5.3.2 / 2.5.4 as proposed by the TWV, it should be made clearer that this is an example of a route and not the typical route for the adoption of Test Guidelines. A second simpler example for each section should be developed.

4.2.1 Reference to Annex 3 to be changed to Annex 4.

4.3.2 Word "categories" to be replaced by "types of expression".

4.4.3.2.2 To read "In cases where there is a discontinuous separation between absence and presence, the characteristic should have the states absent (note 1) and present (note 9).

4.5.2 To be deleted

4.5.4.2.1.2 To be amended as proposed by the TWV

4.5.5.1 To be explained that the condensed range should only be used for the given type of examples, where one end of the scale is fixed.

4.6.2 To be deleted

4.6.3.3 To be amended as proposed by the TWV and wording in the first sentence to be modified accordingly.

4.6.3.4 Reference for mathematical determination of plane shapes to be provided or this part of the sentence to be deleted.

Annex 1: TG Template

Cover page field for UPOV code to be provided.

Cover page field for information on the drafting country to be provided.

Cover page the purpose of the Test Guidelines should be included on the cover page. Words "certain of" on the first line to be deleted and reference TG/1/3 to be added after "General Introduction" as suggested by the TWC.

3.1 title should be changed to "Number of Independent Growing Cycles" as proposed by the TWC and the highlighted text shown as the first sentence to be deleted (see comments on Annex 1, 4.1.2).

3.2 second sentence of 3.2 to read: "If any characteristics of the variety, which are relevant for the examination of DUS, cannot be observed at that place, the variety may, where considered appropriate by the authority, be tested at an additional place."

4.1.2 to be retained, be amended to read: "One means of ensuring that a difference in a characteristic, observed in a growing trial, is sufficiently consistent is to examine the characteristic by at least two independent observations. However, the differences observed between varieties could be so clear that a second growing cycle may not be necessary. In addition, in some circumstances the influence of the environment is not such that a second growing cycle is required to provide assurance that the differences observed between varieties are sufficiently consistent."

TQ 9.2(b) section in brackets to read "(e.g. growth retardant, pesticide)"

TQ 9.3 to be moved from TG Template to Annex 2 as Additional Standard Wording and word "disease" to be replaced by "pathogen".

Annex 2: Additional Standard Wording (ASW) for the TG Template

ASW 7 COYD method not to be included at this time because the probability levels might be different when used for different locations rather than different years. Furthermore, it was not agreed whether, in the second sentence, the word "should" should be replaced by "may".

ASW 8 COYU method not to be included at this time for the same reasons as for COYD (see ASW 7)

ASW 10 supported proposal of TWV to add at the beginning "Where appropriate, or in cases of doubt …".

ASW 15 4.1.1(c) word "totally" to be deleted. Second option to be provided without 4.1.2 "Mutation" section.

ASW 16 supported the retention of the option to include a request for a photograph of the variety to be provided with the Technical Questionnaire.

Annex 3: Guidance Notes for the TG Template

GN 1 "Latin" name to be replaced by "botanical" name, as proposed by TWV.

GN 5 Words "(not in italics)" to be deleted.

GN 7 proposed a review by the TC, of the quantity of plant material to be supplied, in existing Test Guidelines on the basis of crop type to provide some general guidance for drafters of Test Guidelines.

GN 11 proposed that the TWC should include, in TGP/10, some practical guidance for choosing an appropriate uniformity standard, based on uniformity standards used in the existing Test Guidelines.

GN 12 paragraph 3 to read: "Where a grouping characteristic is included in the Table of Characteristics, it should, in general, receive an asterisk in the Table of Characteristics and be included in the Technical Questionnaire. A particular exception to this general rule is for disease resistance characteristics, where particular care should be given before allocating an asterisk."

GN 13 (a)(i) First sentence on page 55 to read "Example varieties are important to adjust the description of the characteristics for the year and location effects, as far as possible."

GN 13 (a)(ii) fifth line on page 56, the word "environmental" to be replaced by "location". Ninth line on page 56, the word "comparable" to be replaced by "the same".

GN 13 (b)(i) the words "or addition" after "alternative".

GN 13 (b)(ii) flow diagram on page 58: dotted line section to be presented as a separate diagram; bottom left-hand box to read only "Example varieties required"; and a separate diamond box to be introduced on the right-hand side, after "Yes e.g. QN (PQ)", asking if the environment is controlled.

GN 13 (h)(i) The TWA agreed that the first paragraph should be rewritten to emphasize the value of regional sets of example varieties for harmonization within regions. It should also indicate that, where appropriate, correlation between sets of regional example varieties could be established, but, that in some cases such correlation was unnecessary (see paragraph 3).

GN 13 (h)(i) The TWA supported an Option 3 approach (UPOV Website) on the basis that it was modified such that:

(a) the relevant TWP would agree the contributors of regional lists of varieties, to ensure cohesion and to ensure quality control of the information supplied;

(b) where known that regional sets of example varieties were being developed, and would be included on the

UPOV Website, this should be stated in the Test Guidelines; and

(c) the lists would be presented in the format suggested in Option 2 of GN 13 (h)(i).

GN 13 (h)(i) It was agreed that the name of the options presented should be changed to avoid confusion with the Options being considered for the possible use of molecular techniques.

GN 25 (c) Section to be reworded to clarify that it would not be necessary to make reference to preceding characteristics in cases where it was obvious that the subsequent characteristics only applied to certain types of variety e.g. in the case of degrees of presence of anthocynanin, following absence / presence.

GN 25 (d) To be moved to GN 14.

GN 26 Brief explanation to be provided, indicating that the wording of the states should be according to how the wording of the variety description should appear e.g. avoid states which include a range such as "10-15%" and, where these are necessary for explaining the state, provide these elements in Chapter 8 explanations.

GN 26 (c)(ii) Reference to be made to the section on color in TGP/14.2 "Botanical Terms".

GN 26 (c)(iii) First sentence to be deleted.

GN 26 (d) To be deleted, because not appropriate in all cases.

GN 30 Second sentence in highlighted paragraph to read "Furthermore, the characteristics contained in the Test Guidelines can be formulated in a different way, if breeders would then be able to describe them more precisely and the information would be useful for performing the test."

GN 31 No consensus was reached on whether the word "should", in the first sentence, should be replaced by "may". It was agreed that more examples should be provided to explain the type of examples which should be given.

Explanation of the "Schematic Overview of TGP/3 Varieties of Common Knowledge, TGP/4 Management of Variety Collections and TGP/9 Examining Distinctness".

*26. The TWA considered document TC/39/6 Add., Annexes I and II. It proposed the following amendments to Annex II:

4.1.2 word "acceptable" to be deleted

4.2.2 title to be amended to clarify that it addresses DUS trials where the age of plants in the trial differs.

9.2.1 number of sections to be reduced

9.2.2.4 title to be “Methodologies for using phenotypic distance” and, within the section, an explanation that a software (GAÏA) is available for applying this methodology.

9.4 to be structured as follows:

9.4.1 Choice of method in the assessment of distinctness

(type of variety (from 9.5.1) / type of characteristic in the choice of visual assessment or measurements)

9.4.2 Visual assessment

(same sections as old 9.4.3)

9.4.3 Measurements

9.4.4 Statistical methods

9.5. to be incorporated into 9.4.1 and to include subsection on hybrids.

9.5.3 words “notion of” to be deleted from 9.5.3.2 and subsections 9.5.3.1 and 9.5.3.2 to be reviewed.

9.6 numbering of subsections to be corrected.

TGP/12.1.2 Draft 1: Characteristics Expressed in Response to External Factors: Chemical Response

27. Mr. Tanvir Hossain (Australia) introduced document TGP/12.1.2 Draft 1. The TWA noted that this document presented a review of the experience gained in Australia. An expert from France recalled section 2.5.3 of the General Introduction (TG/1/3) which contains the following recommendation:

“2.5.3 Factors That May Affect the Expression of the Characteristics of a Variety

The expression of a characteristic or several characteristics of a variety may be affected by factors, such as pests and disease, chemical treatment (e.g. growth retardants or pesticides), effects of tissue culture, different rootstocks, scions taken from different growth phases of a tree, etc. In some cases (e.g. disease resistance), reaction to certain factors is intentionally used (see Chapter 4, section 4.6.1) as a characteristic in the DUS examination. However, where the factor is not intended for DUS examination, it is important that its influence does not distort the DUS examination. Accordingly, depending on the circumstances, the testing authority should ensure either that:

- “(a) the varieties under test are all free of such factors or,

- "(b) that all varieties included in the DUS test, including varieties of common knowledge, are subject to the same factor and that it has an equal effect on all varieties or,

- "(c) in cases where a satisfactory examination could still be undertaken, the affected characteristics are excluded from the DUS examination unless the true expression of the characteristic of the plant genotype can be determined, notwithstanding the presence of the factor."

The Chairman explained that it could be possible to have a polygenic resistance in cross-pollinated varieties, which might result in a normal distribution of the expression, and proposed to expand the document to cover monogenic and polygenic resistance as well as self-pollinated and cross-pollinated varieties. Furthermore he noted that, where relevant, different doses of chemical should be considered. An expert from France added that, for maize, the use of low doses of chemicals resulted in heterogeneity in the expression of the resistance and considered it would be very difficult to assess herbicide resistance in cross-pollinated varieties. In order to have these types of characteristics included in UPOV Test Guidelines, he thought it was necessary to clearly define the methodology of assessment, which might include clear-cut states of expression, e.g. dead or alive. He proposed the inclusion of growth retardant effects in the document. The expert from Germany considered that the document should include guidance on the way these types of characteristics should be developed and experts from the United Kingdom added that their experience in working with genetically modified varieties of oilseed rape demonstrated the need for very well defined protocols of assessment.

*28. The TWA agreed that it would be useful to extend the document to cover growth retardants as well as herbicides and that it would also be useful to present advice on aspects of methodology such as chemical dosage and application. It was also considered important to address additional types of varieties. Mr. Hossain agreed to prepare a revised draft for the next session of the TWA.

TGP/12.1.3 Draft 1: Characteristics Expressed in Response to External Factors: Insect Resistance

29. Mr. Joël Guiard (France) introduced document TGP/12.1.3 Draft 1. He clarified that there was a particular problem with characteristics whose assessment dealt with the interaction of living organisms (e.g. insects, fungi, bacteria). The expert from Germany suggested that fungal resistance could be included. The Technical Director recalled that the TWV planned to discuss a document on disease resistance the following year. The TWA noted that document TGP/12.1.3 Draft 1 presented an example of how insect resistance might be examined where it was introduced by genetic modification, in which case, the same rules as for other characteristics apply. The Chairman wondered how uniformity could be assessed for this type of characteristic. An expert from France clarified that, for genetically modified varieties, uniformity had not yet been a problem, and that Option 1(a) for the possible use of molecular markers could be applied, provided that the detected genetic modification was expressed in an expected manner. However, in cases where varieties contained different genes but had the same expression, they should not be considered different. In reply to a question from the Chairman, concerning disease resistance in non-genetically modified varieties, the expert from Australia replied that, for alfalfa varieties,

standard protocols had been developed and that, furthermore, standard protocols for testing insect resistance had been developed.

30. It was agreed that it would be useful to invite the TWV to propose information on insect resistance which was not introduced by genetic modification.

*31. The TWA concluded that the introduction to TGP/12.1 “Characteristics Expressed in Response to External Factors” should clarify that the rules for uniformity concerning these characteristics should be the same as for all other characteristics and that it would be necessary to conduct the tests for these characteristics in such a way that individual plants could be examined.

TGP/13 Draft 1: General Guidance for New Species

*32. The Chairman introduced document TGP/13 Draft 1. The TWA agreed with the suggestion of the TWF that the document should clarify that it was intended to refer to species and types which were new in terms of applications of varieties for protection, rather than new to nature. It also agreed with an expert from the United Kingdom who suggested that it was very important to involve the breeder in the development of testing for new types and species and that this should be given more emphasis in the document.

*33. The TWA heard that an expert from the CPVO had agreed to draft a restructured document on the basis of discussions amongst the interested experts and that it was anticipated that this would be presented to the TWO and TWF at their forthcoming sessions.

Discussion on Draft Test Guidelines (Subgroups)

Lupins (Revision);

*34. In the absence of the leading expert, the subgroup was chaired by the Office of the Union. The subgroup agreed the following changes to document TG/66/4(proj.3)

Page 1 (cover page)

Alternative names: German: to read “Weiβe Lupine” instead of “Weißlupine”

7. Table of Characteristics

Ch. 1: to have note VG instead of VS. To read “Samen” instead of “Korn” in German, “Semilla” instead of “Grano” in Spanish” and “Semence” instead of “Grain” in French.

Ch. 6: to delete example variety “Minori (Lal)” for state (3).

Ch. 8: the example variety for state narrow (3) to read “Bolivio” instead of “Bolivia”

Ch. 9: German to read “Blüte: Farbe de Flügel

Ch. 13: German translation of state low (2) to read “niedrig” instead of “niedrigg”.

Ch. 18: the example variety for state brown (2) to read “Bolivio” instead of “Bolivia”

Ch. 19: French translation of the wording to read: “Graine: distribution des ornementations”.

Ch. 20: French translation of the wording to read: “A l’exclusion des variétés avec auréole seulement: Graine: densité des ornementations”

German translation of the wording to read: “Außer Sorten mit nur Sichel: Korn: Dichte der Ornamentierung”

Ch. 21: to delete “(harvested seed)”
French translation of the wording to read: “Graine: poids de 100 grains”

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

(a) to delete “unless otherwise indicated”.

8.2 Explanations covering individual characteristics

Ads. 7, 8 to read:
“All observations on the leaf should be made at the time of full flowering.
Indeterminate type: on the central leaflet of the leaf just below the uppermost branch bearing flower
Determinate type: on the central leaflet of the uppermost leaf of the main stem”.

9. Literature

To add the following literature:

B. Juliwe, C. Huyghe, J. Papineau, C. Billot and C. Deroo. Genetic and environmental variation in architecture and yield components in determinate white lupin (*Lupinus albus* L.). Euphytica 81: 171-179, 1995.

M. Dracup and B. Thomposon. Narrow-leafed lupins with restricted branching. Annals of Botany 85: 29-35, 2000.

10. Technical Questionnaire

To add the title to Section 1

6. Line for example to be deleted

*35. The subgroup for discussion of the Test Guidelines for Lupins considered the comments sent by experts from the Russian Federation, included in document TWA/32/9, and concluded as follows:

Comment: "Ch. 2. Time of observation of the characteristic (at vegetative stage) is too undefined. Propose to remain it like in old version of the Test Guidelines TG/66/3: Plant: height three weeks after seedling emergence."

The subgroup noted that it had decided to change the wording from the previous version of the TG for Lupins because "three weeks after emergence" does not refer to the same stage of development in all countries depending on climatic conditions after sowing. It clarified that the characteristic should be assessed at vegetative stage, before bud emergence.

Comment: "Explanation to Ch. 2 should read: To be observed on the whole trial at beginning of bud emergence of the earliest variety."

The subgroup agreed to modify the explanation to characteristic 2 as follows:

"Ad. 2: Plant: height at vegetative stage

To be observed on the whole trial just before bud emergence of the earliest variety."

Comment: "Ch. 3 and 4. Time of observation of the characteristic (prior to bud emergence) is too undefined. Propose to remain it like in old version of the Test Guidelines TG/66/3: at flower bud stage."

The subgroup noted that the expression of the characteristic changed at flower bud stage but it remains constant before bud stage. For that reason it decided to assess the characteristic before bud stage.

Comment: "Ch. 10. Change name of the characteristic and states of expression: Flower: color of tip of carina in comparison with carina – lighter (1), equal (2), darker (3)"

The subgroup noted that the proposal was to describe a different characteristic from characteristic 10 and concluded that further explanations from experts from the Russian Federation at the meeting would have been needed to discuss its inclusion at that time. Nevertheless, the subgroup did not want to delay the submission of the document to the Technical Committee for adoption and agreed that the inclusion of this new characteristic could be considered in future revisions of the Test Guidelines.

Comment: "After Ch. 10. to add a characteristic: Plant: type of branching. The states of expression: predominantly at base (1), along the stem (2), predominantly at upper part (3)." Drawings were provided.

The subgroup noted that this was already included under characteristic 11 of TG/66/4(proj.3).

Comment: "After Ch. 17. to add a characteristic: Grain: main color. The states of expression: white (1), grey (2), other (3)."

The subgroup considered that further explanations from experts from the Russian Federation at the meeting would have been needed to discuss its inclusion at that time. Nevertheless, the subgroup did not want to delay the submission of the document to the

Technical Committee for adoption and agreed that the inclusion of this new characteristic could be considered in future revisions of the Test Guidelines.

Comment: "Ad. 11. To delete explanations for spring time and winter time (due to non-mentioned anywhere). It would be better to provide a drawing to explain determinate and indeterminate type of growth."

The subgroup recalled that the inclusion of drawings had been considered in the past and it was finally agreed to have a text instead. Nevertheless it decided that information about the type of variety (winter type or spring type) should be requested under Section 7 of the Technical Questionnaire. The subgroup also noted that a new bibliography related to this characteristic was included.

*36. The subgroup agreed that, with the incorporation of the above-mentioned changes, the Test Guidelines for Lupins could be presented to the Technical Committee for adoption at its fortieth session in April 2004.

Potato (Revision) (document TG/23/6(proj.2) and document TWA/32/7)

*37. The subgroup, chaired by Mrs. Beate Rücker (Germany), agreed the following changes to document TG/23/6(proj.2).

1. Subject of these Guidelines

To read: "1.1 These Test Guidelines apply to all vegetatively propagated varieties of *Solanum tuberosum* L."

7. Table of Characteristics

Char. No.	Type of expression	Method of Examination	Comment
4			To have the states of expression absent or low (1), medium (2), high (3)
14, 19, 27, 31			To delete "proportion of" and to have the states: absent or very weak (1); weak (3); medium (5); strong (7); very strong (9)
31		~~(b)~~	To delete (b)
34			To have the states of expression absent or low (1); medium (2); high (3)
35			To read: Flower corolla: extent of anthocyanin coloration on inner side
37	QN		

Example varieties: The subgroup noted that experts from Germany, the Netherlands and United Kingdom would cross-check example varieties and would send an agreed list of example varieties to the Office of the Union within the following 6 weeks. The subgroup

further agreed that it was not necessary to have example varieties for characteristics 7, 12, 16 and 17.

8. Explanations on the Table of Characteristics

8.1 Explanations covering several characteristics

Explanation (a): to move the drawing to Section 8.2 as Ad. to characteristics 1 to 11.

Last sentence of the second paragraph to read: "A good expression of characteristics is obtained with lightsprouts growing in a cabinet at room temperature under exclusion of day light and under continuous light of small incandescent bulbs (6V AC / 0.05 A) giving an intensity of 5 to 10 lux (approximately 8 bulbs per square meter, 25-40 cm above the tubers).

To have a new explanation (b) for characteristics 15, 16, 17 and 20 as follows:

(b) Leaf: All observations should be made on fully developed leaves from the center of the plant. One leaf from each of 20 plants should be picked from a main stem midway between the top and the bottom of the plant.

To have a new explanation (c) for characteristics 18, 19, 21, 22, 23, 24, 25 and 26 as follows:

(c) Leaf: All observations on the leaf should be made on fully developed leaves from the center of the plant.

Explanation (b) becomes (d) and reads:

(d) Flower: All observations of flower color should be made on the inner side of freshly opened flowers.

8.2 Explanations for individual characteristics

Ad. 3: if the intensity of the anthocyanin coloration is "absent", the lightsprout appears green.

Ad. 7: to delete "is reached" at the end of the explanation.

Ads. 14, 19, 27, 31, 34: to refer to ch. 35 instead of ch. 34 and to read

"Ads. 14, 19, 27, 31, 35: Anthocyanin coloration

The extent of anthocyanin coloration should be observed in relation to the total area. Distribution and intensity should not be considered.

The extent of anthocyanin coloration of flower buds should be observed on fully developed buds before the corolla is visible."

Ads. 15 to 25: to delete the two paragraphs (these explanations are included in section 8.1)

Ad.22: to delete the sentence at the bottom of the explanation.

Ads. 30-35 to read: "Inflorescence and flower characteristics"

Ad. 33: if the intensity of the anthocyanin coloration on the inner side is "absent", the flower corolla appears white

Ad 37: the text to read as follows: "The predominant shape should be observed on the harvested material from each plot."

9. Literature

To add the following literature:

Houwing, A., R. Suk and B. Ros, 1986. Generation of lightsprouts suitable for potato variety identification by means of artificial light. Acta Hort 182: 359-363.

10. Technical Questionnaire

4.1: to add lines for the applicant to include the requested information.
4.2: to be deleted (the Test Guidelines apply to vegetatively propagated varieties only.)
5.7: to read "reddish brown" instead of "reddish blue".
6: to delete the line for the example.

ANNEX Characteristics derived by using electrophoresis

After considering the report of the ring test of electrophoresis included in document TWA/32/7, the subgroup agreed that further information was necessary to confirm the repeatability and consistency of the results before the method could be recommended in the Test Guidelines. It agreed the ring test should be continued to obtain further information for the inclusion of the method in a future revision of the document.

*38. The subgroup agreed that, with the incorporation of the above mentioned changes and subject to the list of example varieties being submitted to the Office of the Union within six weeks after the TWA meeting, the Test Guidelines for Potato could be presented to the Technical Committee for adoption at its fortieth session in April 2004.

Rice

*39. The subgroup, chaired by Mr. Michael Camlin (United Kingdom) in conjunction with Mr. Luis Salaices (Spain), considered documents TWA/32/5 and TWA/32/6 in relation to its discussion on document TG/16/8(proj.2).

*40. The subgroup welcomed the comments made by Mr. Edwin Javier (International Rice Research Institute (IRRI)), as contained in document TWA/32/5, and noted that this summarized the high degree of harmonization which had been achieved between the UPOV Test Guidelines and the IRRI Descriptors for Rice (DR). With regard to the characteristics presented in Table 4 of document TWA/32/5, the subgroup noted that, in most cases, the Test Guidelines provided at least the same number of states of expression as the IRRI DR since the presence of, for example, notes 3, 5 and 7 in the Test Guidelines indicated that all 9 states in the 1-9 scale could be used if appropriate. In the case of decorticated grain aroma, the Test Guidelines were amended to three states as for the IRRI DR (see changes to characteristic 66 below). With regard to Table 5, the subgroup confirmed that the existence of extra states in the Test Guidelines indicated that the extra states were useful for discriminating varieties. The subgroup considered the presentation of color characteristics on the basis of Table 6 and made some amendments to the Test Guidelines (see comments on characteristics 33, 38 and 46 below). With regard to the differences between the Test Guidelines and IRRI DR for the two characteristics shown in

Table 7, the subgroup considered that the current presentation in the Test Guidelines was the most appropriate for the Test Guidelines.

*41. The subgroup considered the presentation of example varieties in the Test Guidelines on the basis of document TWA/32/6. It noted that regional sets of example varieties were not available at this time and that the development of a set of example varieties for East Asia was likely to take between two and three years to develop. The subgroups agreed, therefore, that the Test Guidelines should be submitted to the Technical Committee for adoption on the basis of a minimal set of example varieties which had been verified by the leading expert and on the basis that regional sets of example varieties would be incorporated as these became available.

*42. The subgroup then agreed the following amendments to document TG/16/8(proj.2):

3.3.2 bracket after VS to be deleted

4.2 To read as follows:
"4.2.1 Self-pollinated varieties

(a) Plots: For the assessment of uniformity of characteristics on the plot as a whole (visual assessment by a single observation of a group of plants or parts of plants), a population standard of 0.1 % with an acceptance probability of at least 95% should be applied. In the case of a sample size of 1,500 plants, the maximum number of off-types allowed would be 4.

(b) Single panicle-rows: For the assessment of uniformity of characteristics on single panicle-rows, plants or parts of plants (visual assessment by observations of a number of individual panicle-rows, plants or parts of plants), a population standard of 1% with an acceptance probability of at least 95% should be applied. In the case of a sample size of 50 panicle rows, the maximum number of aberrant panicle-rows should not exceed 2.
4.2.2 Hybrid varieties

For the assessment of uniformity of single hybrids, a population standard of 1% with an acceptance probability of at least 95% should be applied. In the case of a sample size of 1,500 plants, the maximum number of off-types allowed would be 39."

4.3.2 Words "or plant" to be deleted from second line.

5.3 (a) to refer to characteristic 9
(c) spelling of "prostrate" to be corrected
(f) to be deleted

To be updated in accordance with the changes to the Table of Characteristics.

6.5 Legend to be presented in correct order.

7 Table of Characteristics

Leading expert to check the Spanish translation of the characteristics.

Char. No.	Type of expression	Method of Examination	Comment
1	QN		To read: "Coleoptile: anthocyanin coloration" with states: absent or very weak (1); weak (2); strong (3).
2	PQ		
3	QN		Example varieties to be deleted.
4	QL		Example varieties to be deleted.
5	PQ		
6	QL		
7	QN		State 9 to be deleted
8	QN		Example varieties to be deleted. State 9 to be deleted
9	QL		Example varieties to be deleted.
10	QL		
11	PQ		
12	PQ		
13	QN		Example varieties to be deleted.
14	QN		
15	QN		Example varieties "Galatxo" (state 3) and "Veta" (state 5) to be added.
16	QN		Example varieties "Fonsa" (state 3) and "Puebla" (state 5) to be added.
17	QL		To be moved after characteristic 18. Spelling of "prostrate" to be amended.
18	PQ		To read: "Culm: habit"
19	QN		Example variety "Gulfmont" to be deleted. State 9 to be deleted.
20	PQ	60 VS/ MS	To have the states 1, 2, 3.
21	QN		Example varieties to be deleted. State 9 to be deleted.
22	QN		Example varieties to be deleted. State 9 to be deleted.
23	QN		
24	PQ		Example varieties "Lido" and "Thaibonnet" to be deleted.
25	QN		Example varieties to be deleted.
26	QN		To read: "Non prostrate varieties only: Stem length (excluding panicle)". Example variety "Arborio" to be deleted.
27	QL		Example varieties to be deleted.
28	QN		Example varieties to be deleted.
29	QL		Example varieties to be deleted.
30	QN		States 1 and 9 to be deleted.
31	QN	MS	
32	QL	VS	

33	PQ		State 1 to read “light gold”; state 2 to read “gold”.
34	PQ	VS	
35	QN	VS	Example varieties to be deleted.
36	QN		To read: “Spikelet: pubescence of lemma”.
37	PQ	VS	Example varieties to be deleted.
38	PQ		State 1 to read “light gold”; state 2 to read “gold”. Example varieties to be deleted.
39	PQ		
40	QL	VS	
41	PQ	VS	To have the states: Type 1 (1); Type 2 (2); Type 3 (3).
42	QN	VS	To have the states: erect (1); semi-erect (3); spreading (5). Office of the Union to check the term “spreading” is correct.
43	QN		Order of states to be: enclosed (1); partly exserted (3); just exserted (5); moderately well exserted (7); well exserted (9). Example varieties to be deleted.
44	QN		Example varieties to be deleted.
45	QN		
46			To be replaced by two characteristics as follows
new 1	PQ	VS	To read “Lemma: color”, with the states: Light gold (1); gold (2); brown (3); reddish to light purple (4); purple (5); black (6).
new 2	PQ	VS	To read: “Lemma: ornamentation”, with the states: absent (1); gold furrows (2); brown furrows (3); purple spots (4); purple furrows (5).
47	QN		State 9 to be deleted.
48	QN		
49	QN		(*) to be deleted.
50	QN		(*) to be deleted.
51	PQ		(*) to be deleted.
52	QN		(+) to be added. States 1 and 9 to be deleted. Example varieties to be deleted.
53	QN		States 1 and 9 to be deleted. Example varieties to be deleted.
54	QN		States 1 and 9 to be deleted. Example varieties to be deleted.
55	QL	VG	
56	QN		
57	QN		States 1 and 9 to be deleted.
58	QN		Example varieties to be deleted.
59	PQ	VS	Example varieties to be: “Bahia” (2); “Lido” (3); “Ariete” (4); “Thaibonnet” (5).
60	PQ	VS	Example varieties to be: “Bahia”, “Senia” (1); “Venere” (4).
61	PQ	VS	Example varieties to be deleted.
62	PQ	MG	To have the states: State 1 (1); State 2 (2); State 3 (3); State 4 (4); State 5 (5); State 6 (6); State 7 (7);

63 and 64	PQ	VG	Expert from Republic of Korea to provide Leading Expert and Office of the Union with an explanation, by October 3, 2003, on: (a) the way in which to differentiate clearly between white core and white belly; (b) how to assess the size and intensity of the white core / white belly; (c) how to take into account the proportion of grains which have white core / white belly; and (d) how to assess uniformity for the characteristic. The Office of the Union will circulate this information to the members of the TWA and, if the TWA is content, the characteristic will be included in the Test Guidelines with this explanation and with the following changes: To read: Char. 63 "Intermediate and non-glutinous varieties only: Polished grain: white core in endosperm" Char. 64 "Intermediate and non-glutinous varieties only: Decorticated grain: white belly in endosperm" both Chars. 63 and 64 with the states: State 1 (1); State 2 (2); State 3 (3); State 4 (4); State 5 (5); Example varieties to be deleted.
65	QN	MG	
66	QN	MG	To have the states: absent or very weak (1); weak (2); strong (3). Example varieties to be "Bahia, Thaibonnet" (1); "Arome, Gange" (3).

8. Explanations on the Table of Characteristics

To be updated in accordance with the changes to the Table of Characteristics and:

Ad. 1 Explanation:

"Non-dormant grains are placed on moistened filter paper and covered with a petri-dish lid during germination. After the coleoptiles have reached a length of about 5mm in darkness they are placed in artificial light (daylight equivalent) at 750-1250 lux continuously for 3 to 4 days, at a temperature of 25 to 30 degrees Centigrade. The color of the coleoptiles is observed when they are fully developed at stage 09 –11 (about 6 to 7 days).

Ad. 17 Explanation:

"After falling flat due to receding water flow, the stems of varieties with kneeing ability start to grow upright with 3 to 4 nodes and bear panicles. This is one of the most important characteristics for deep water / floating types of rice."

Ad. 18 Illustration provided by Mr. Chukichi Kaneda.
Ad. 20 States of expression to be added. State 1 to read "0-25%"
Ad. 21, 22, 23 and 47, 48, 49 To be amended to show the sterile lemma and to cover characteristics 50 and 51
Ads. 30 and 39 Length of main axis to be indicated on state 7 as well as state 1.
Ad. 31 To be deleted.
Ad. 42 To add the explanation: "To be observed on a flat, horizontal surface".
Ad. 43 To use the illustration provided by the leading expert.
Ad. 52 Explanation: "To be calculated at 14% moisture".
Ad. 61 Minor editorial amendments to be made.
Ad. 62 Highlighted section to be deleted and following explanation added:

State 1	<5%
State 2	5-10%
State 3	11-15%
State 4	16-20%
State 5	21-25%
State 6	25-30%
State 7	>30%

Ads. 63 and 64 Explanation as explained for characteristics 63 and 64 plus:

State 1	<5%
State 2	5-10%
State 3	11-20%
State 4	21-40%
State 5	>40%

Ad. 65 To add the explanation provided by Mr. Chukichi Kaneda at the Fourth Asian Regional Technical Meeting.

9. Literature

Highlighted section to be deleted.

10. Technical Questionnaire

Section 5 to be updated in line with the changes to the Table of Characteristics.

Section 5.6, state 9 to read "dark purple / black".
Section 6 example to be "Decorticated grain length: short / medium.

Lucerne (Revision)

*43. The subgroup, chaired by Mr. Joël Guiard (France), agreed the following changes to document TG/6/5(proj.1):

Cover page / 1 To be checked if *Medicago* x *varia* covers interspecific hybrids between *Medicago sativa* and *Medicago falcata* L.

3.5.1 to read “Unless otherwise indicated, all observations on single plants should be made on 60 plants, or parts taken from each of 60 plants, in the spaced plant trial.”

3.5.2 to read “Unless otherwise indicated, all measurements should be made on a total of 18 plants or parts of plants, 6 taken from each of the replicates in the row plot trial.” It was noted, in relation to the comments provided by the Russian Federation, that the rows were long enough to ensure that separate plants would be selected.

5.3 The TWA considered the inclusion of characteristic 4 as a grouping characteristic, but concluded that this was not appropriate because it is a quantitative characteristic.

7. Table of Characteristics

It was agreed that example varieties would not be considered at the meeting and that comments would be sent to the leading expert before the next session of the TWA.

Chars. 1, 3, 4 Each characteristic to be separated into two separate characteristics according to the method of examination, i.e. spaced plants or row plots.
Chars. 1, 2, 3, 13, 14 Explanation (a), provided by the expert from Australia, to be introduced
Char. 1 to read “Plant: natural height 2 weeks after the first autumn equinox.”
Char. 2 to read “Plant: natural height 6 weeks after the first autumn equinox.”
New char. (after 3) Characteristic 3 from TG/6/4 to be introduced (VS, QN). Hungary to provide example varieties.
Char. 4 (+) with explanation to be provided by expert from France.
Chars. 5, 6, 7 “(a)” to be replaced by “(b)”
Chars. 9 to 12 Alternative example varieties to be provided if possible.
Chars. 9, 10, 11 To be checked if these should be separated into two separate characteristics according to the method of examination i.e. spaced plants or row plots.
Chars. 10, 11, 12 (+) to be added, explaining that the plants should be cut after the preceding characteristic has been measured.
Char. 13 to read “Plant: natural height 2 weeks after the second autumn equinox following sowing (cut 2 weeks before equinox).”
Char. 14 to read “Plant: natural height 6 weeks after the second autumn equinox following sowing (cut 2 weeks after equinox).”
Char. 15 Words “(fall dormancy)” to be deleted. States to be renamed “State 1”, “State 2” … “State 11”.
Chars. 16, 17 Explanations to be reviewed.
Char. 17 Text “2 three foliated leaves” to be moved to explanations.

Possible New Chars. The expert from Australia to provide detailed protocols and example varieties for additional disease and insect resistance characteristics, as follows:

- Blue Alfalfa Aphid Resistance
- Spotted Alfalfa Aphid Resistance
- Phytophthora Root Rot, Seedling Resistance
- Anthracnose Resistance

Possible characteristics for leaf and stipule were not considered to exhibit sufficient variation between varieties to be able to establish distinctness.

8. Explanations on the Table of Characteristics

To be updated in accordance with the changes to the Table of Characteristics and:

Ad. 15 To explain that "fall dormancy" is the opposite of characteristic 15. Comments on document circulated by the leading expert to be provided to the leading expert. Chars. 2 and 14 to refer to "2 weeks" and not "3 weeks".
Ad. 16 Concentration of KNOP solution to be specified.
Ad. 17 To be revised.

9. Literature

To be updated

10. Technical Questionnaire

1. Title line to be added and "*Sativa*" to be changed to "*sativa*" in 1.1.1.
5.5 To be updated in line with changes to the Table of Characteristics.

Coffee (document TG/COFFEE(proj.1))

*44. The subgroup, chaired by Mr. Leontino Rezende Taveira (Brazil), agreed the following changes to document TG/COFFEE(proj.1)

3.*3 Conditions for Conducting the Examination*: To add the following sentence at the end of the paragraph: "Observations should be made after the third year of planting on a representative harvest cycle.

3.4 Test Design: to review the consistency among the quantity of plant material requested under section 2, the number of plants to be obtained in the field test under section 3.4.1 and the number of plants to be examined under section 3.5.
4.2.3: to check whether 10% of population standard is also applicable to vegetatively propagated varieties and the last sentence of the paragraph to read "In the case of a sample size of 30 plants, 6 off-types are allowed".

4.2.4: to include the population standard and acceptance probability for interespecific hybrids.

5.3: to include a set of grouping characteristics.

7. Table of Characteristics

Char. No.	Type of expression	Method of Examination	Comment
1	PG		To add explanation or to delete (+).
2	QN		To add explanation or to delete (+).
3	QN		

4	QN	(a)	To add example varieties and notes 3-5-7.
5	QN		
6	QN		
7	QN		
8	QN	(a)	To add explanation and to have notes 1-3-5-7
9	QN		
10	QN		
11	PQ		
12	PQ		To have states green (1), green and bronze (2), bronze (3) and purple (4)
13	PQ		To check the possible existence of state “green”.
14	QL		To check if it is a clear cut absence-presence.
15	QN		
16	QN		
17			To verify the term “domatia” and to add explanation.
18	QL		To verify the term “domatia” and to add explanation.
19	QN		
20	QL		To read “Flower: pollen fertility” and to add explanation
21			To add explanation with the methodilogy.
22	QN		
23	PQ		State of expression 1 to read “round (1)” instead of “roundish”.
24	PQ		To delete “(harvest maturity)”. It is included in 8.1. (d)
25	QL		States of expression to read “dehiscent (1)” and “non-dehiscent (2)”
26	QN		To add explanation of the method of assessment
27	QN		To add drawing and example varieties if possible.
28	QN		
29	QN		
30	QL		To have example varieties.
31			To add explanation, to check the existence of a state “medium” and to include example varieties.
32	QN		To add explanation and example varieties if possible.
33	QN		
34	QN		
35	QN		To add explanation of the method.
36	QN		To add description of the method.
37	QN		

The subgroup agreed that experts from Mexico will send to the expert of Brazil possible new characteristics to be checked.

8. Explanations on the Table of Characteristics

8.2 Explanations for individual characteristics

Ad. 5 to refer to characteristic 6 instead of 5.
Ad. 8 to refer to characteristic 11 instead of 8.
Ad. 21 to refer to characteristic 23 instead of 21.
Ad. 38 to refer to characteristic 37 instead of 38.

9. Literature

To add relevant literature.

10. Technical Questionnaire

Section 5: to add characteristics to be indicated by the applicant.
Section 6: to add examples (the leading expert proposed to add more than one example).

*45. The subgroup agreed that experts from Mexico and Kenya will send further information to the leading expert by November 2003. It further agreed that the leading expert, in connection with the Office of the Union if necessary, will prepare and circulate among the interested experts an amended version of the document by January 2004. A final draft should be prepared for the next session of the TWA for possible submission to the Technical Committee on 2005.

Grain Amaranth (document TG/AMARAN(proj.1)

*46. Upon the request of the expert from Mexico, discussions were moderated by an expert from the Office of the Union. The subgroup agreed the following changes to document TG/AMARAN(proj.1):

1. Subject of these Guidelines

To read: "1.1 These Test Guidelines apply to all varieties of *Amaranthus* spp. excluding ornamental types."

5. Grouping of Varieties and Organization of the Growing Trial

5.3: to add grouping varieties.

7. Table of Characteristics

Char. No.	Type of expression	Method of Examination	Comment
1	QL		
2	QL		
3	QL		To add explanation.
4			To reword and restructure in consistence with characteristics 15, 16, 17, 18 and 19.
5	QN		To add explanation and to be moved after characteristic 3.
6	QN		To add explanation and to have notes 1-3-5-7.
7	QL		To add explanation
8			To be split (see 8.a and 8.b) and to delete state 4.
8.a	QL		"Leaf incisions of margin" with states of expression "absen (1)" and "present (9)"

8.b		Leaf: type of incisions of margin" with states of expression "crenated (1)" and "ondulate (2)". To check if there is a clear cut between states 1 and 2.
9	PQ	To read "obovate (4)" and to delete state 8. The subgroup considered that state s "cuneate (3)" and "obovate (4)" were too similar and requested to check the drawings or if it is really necessary to have so many states.

*47. *Project to exchange seeds*: The subgroup agreed to form a group for exchanging seeds of selected varieties. It agreed that experts from Brazil, Hungary, Japan and Mexico would exchange seeds and would report about the results for the following TWA meeting and that the expert from Mexico would be the coordinator of the group.

Medicago (excl. sativa) (document TG/MEDICS(proj.1)

*48. The subgroup, chaired by Mr. Tanvir Hossain, agreed the following changes to document TG/MEDICS(proj.1):

General: "Burr" to be replaced by "pod" throughout document.

Cover page to read "*Medicago* L. (excluding …to correspond to TG/6/5)

Cover page French, German and Spanish common names to be sought.

3.3.1 "VS" to be added.

3.3.2 to be added with A (spaced plants) and B (row plots)

3.4.1 Each test should be designed to result in a total of at least 60 spaced plants and 10 meters of row plot, which should be divided between three replicates. Second sentence to use standard wording taken from previous Test Guidelines.

7. Table of Characteristics

Order of characteristics to be checked with regard to plant characteristics coming before leaflet characteristics.

Chars. 1 to 6 Method of examination to be "VS / A".
Char. 2 to be amended to "PQ".
Char. 4 to have the new states "yellow" introduced after "white" and "pink" after "red".
Char. 5 to read "<u>Varieties with marks only</u>: Leaflet: number of marks on <u>upper side</u>", with (+) and explanation that "marks" means flecks and spots to be added.
Char. 8 (+) and explanation to be provided.
Char. 9 (+) and illustration to be provided with explanation of stage at which to observe
New 1 (after 9) "Plant: length" to be introduced. (see TWA/32/9)
New 2 (after 9) "Internode: length" to be introduced. (see TWA/32/9)
Char. 10 (+) and explanation to be provided.

Char. 14 (+) and illustration to be provided. States and type of expression to be reviewed with illustration.
Char. 17 (+) and illustration to be provided.
New 1 (after 18) "Leaflet: pubescence of lower side" to be considered by leading expert (see TWA/32/9)
New 2 (after 18) "Leaflet: pubescence type" to be considered by leading expert (see TWA/32/9)
Char. 22 (+) and illustration to be provided.
New (after 22) "Flower: main color of petal" to be added (see TWA/32/9)
Char. 24 to be amended to PQ. To check if there are more color types.
Char. 25 "ripening" to be replaced by "maturity".
Char. 27 to add the state "sickle-shaped" and check for further states.
Char. 29 to replace "coiling" with "whorls".

Possible new characteristics: To consider the addition of pod and seed characteristics.

8. Explanations on the Table of Characteristics

To be updated in accordance with the changes to the Table of Characteristics.

Sesame

*49. A subgroup of experts from Japan and the Republic of Korea discussed document TG/SESAME(proj.1) and agreed to send written comments to the leading expert.

Common Millet

*50. The subgroup, chaired by the Chairman, agreed the following changes to document TG/COM-MIL(proj.1):

Numbering of headings to be corrected.

3.4.2 Text from "First growing cycle …" to the end of section 3.4.2 to be deleted.

3.5 Table to be deleted.

4.2.2 to be deleted.

7. Table of Characteristics

Chronological order of characteristics to be checked

Maximum of two example varieties to be provided for each characteristic.

"M" in method of examination to be amended to "MS" or "MG".

Char. 1 to read "Panicle: time of heading". (+) with explanation to be provided.
Char. 6 to read "Flag leaf: width".
Char. 8 wording to be checked.
Char. 12 to read "Glume:…"
Char. 13 to read "Glume:…"

Char. 14, 18, 20, 21 translation of twigs (branches?) to be checked.
Char. 14 translation of heading and state 2 to be checked. State 4 to read "up to 2/3 of panicle".
Char. 15 to be reviewed
Char. 19 (+) and illustration to be provided.
Char. 20 state 1 to read "absent or very weak".
Char. 21 (+) and illustration to be provided.
Char. 24 to have the states light (3); medium (5); dark (7).
Char. 25 to read "Grain: glume color"
Char. 26 spelling of "spotty" to be corrected.
Char. 27 to check if state 1 should read "smooth".
Char. 28 spelling of "caryopsis" to be amended. Translation of states to be checked and figures in brackets to be moved to the explanations.
Char. 29 figures in brackets to be moved to the explanations.
Char. 30 To check if kernels means de-husked grains. figures in brackets to be moved to the explanations.

8. Explanations on the Table of Characteristics

Ad. 28 to consider if illustration might be more useful than formula.
Ad. 29 to consider if illustration might be more useful than formula.
Decimal code: spelling of caryopsis in stage 07 to be corrected.

Ginseng

*51. The subgroup, chaired by Mr. Keun Jin Choi (Republic of Korea), agreed the following changes to document TG/GINSEN(proj.2):

3.4 To be amended to 60 plants

3.5 To read "Unless otherwise indicated, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants and any other observations made on all plants in the test."

4.2.2 To be updated for 60 plants. Acceptance probability to be checked.

6.4 To introduce two-letter-species codes to be placed in brackets after the example varieties.

7. Table of Characteristics

Char. 3 Percentages in brackets to be moved to explanations in 8.2. Even states to be deleted.
Char. 5 "(Varieties with anthocyanin coloration only)" to be deleted. To have the states: On lower part only (1); On upper part only (2); On lower and upper part (3); along the whole stem (4).
Char. 6 to read "Petiole: length"
Char. 7 to read "Petiole: attitude in relation to main axis". To have the states: Erect (1); semi erect (3); spreading (5).
Char. 8 Numbers in brackets to be moved to explanations in 8.2.
Chars. 9 to 13 to be moved after characteristic 16.

Char. 9 to read “Leaflet: length of blade”. New (b) to be added
Char. 10 to read “Leaflet: width of blade at widest part”
Char. 11 to read “Leaflet: shape”. To be amended to PQ. Example varieties to be provided for states 1 and 3.
Char. 12 to read “Leaflet: shape in cross section”.
Char. 13 to read “Leaflet: serration of margin”. Example varieties to be provided.
Char. 14 to have the states: absent or very few (1); few (3); medium (5); many (7). Percentages in brackets to be moved to explanations in 8.2.
Char. 15 to read “Leaf: blistering of surface”.
Char. 17 to read “Leaf: color at maturity”. To be amended to PQ.
Char. 18 example varieties for states 3 and 7 to be provided.
Char. 20 to have the states: type 1 (1); type 2 (2); type 3 (3). Example varieties to be provided for states 2 and 3.
Char. 21 “angle” to be replaced by “attitude”. State 7 to read “semi-recurved”.
Char. 22 to read “Berry: maturity”, with (+) and explanation provided. Example varieties to be provided for states 5 and 7.
Char. 23 to be amended to PQ.
Char. 24 (+) and illustration to be provided.
Char. 27 to be amended to PQ.
Char. 28 to read “Rhizome: presence of stolons”. (+) with illustration and explanation to be provided. Reliability of characteristic to be checked.
Char. 29 to read “Root: ethanol extract”. (+) and method to be provided.
Char. 30 to read “Root: presence of ginsenoside Rg1”, with the states: absent (1); present (9). (+) and method to be provided.
Char. 31 (+) and method to be provided.

8. Explanations on the Table of Characteristics

To be updated in accordance with the changes to the Table of Characteristics and:

8.1 To have new (b) added to read “All observations on the leaflet should be made on the central leaflet”. Old (b) to be changed to (c) in 8.1 and the Table of Characteristics.

Ad. 7 to be improved using separate illustration
Ad. 12 illustration to show orientation of the leaflet
Ad. 19 to be improved using separate illustration

Recommendations on Draft Test Guidelines (Plenary)

*52. The TWA agreed that the draft Test Guidelines below would be sent to the TC for adoption at its fortieth session, to be held in Geneva from March 29 to 31, 2004, on the basis of the following documents with the amendments presented in paragraphs 32 to 40 of this document:

Lupins	TG/66/4(proj.3)
Potato	TG/23/6(proj.2)
Rice	TC/16/8(proj.2)

*53. The TWA decided to discuss further the following draft Test Guidelines at its next session:

Coffee
Common Millet
Ginseng
Grain Amaranth
Lotus
Lucerne (Revision)
Medics (Medicago spp. other than sativa)
Pearl Millet
Sesame

*54. At the proposal of the Mr. Keun Jin Choi (Republic of Korea, leading expert for Ginseng) and in recognition of the greater number of experts with an interest in Ginseng in the TWA compared to the TWV, the TWA agreed to propose to the TC that the TWA becomes the TWP responsible for the Test Guidelines for Ginseng.

55. The TWA discussed document TWA/32/8 which included a special request from ISF to consider the possible implications of the definition of "Festulolium" being extended to any plant variety derived from sexual hybridization between species of *Lolium* and *Festuca*. The expert from Germany reported that, in Germany, they had some experience with Festulolium varieties obtained from crossing *Lolium spp*. and *Festuca pratensis* Huds, and that the Test Guidelines for *Lolium spp*. had been used. Experts from France explained that, within the European Union, Festulolium referred to hybrids between *Lolium multiflorum* Lam. and *Festuca pratensis* Huds., and that whilst there was always some degree of introgression to *Festuca* spp., the resulting varieties looked like *Lolium* varieties. He further considered that a definition was needed. The Chairman explained that breeders back-cross to *Lolium* spp. and agreed with the French experts that Festulolium varieties were to difficult to differentiate from Lolium. varieties. He therefore proposed that Festulolium varieties be covered in the revised version of the Lolium Test Guidelines. The expert from Australia added that, in Australia, Festulolium varieties were tested using the Lolium Test Guidelines. In relation to Festulolium varieties obtained from crossing *Lolium* spp. and *Festuca arundinacea* Schreb (tall fescue), an expert from France reported that two applications had been filed and the varieties were under test.

56. The TWA agreed that the revision of the Test Guidelines for Ryegrass should include a change to their coverage to include Festulolium. It was noted that it would be necessary to consider, in particular, if the uniformity standards for Festulolium would be different from that of ryegrass.

*57. The TWA agreed to prepare the following draft Test Guidelines for discussion at its next session:

Hop
Ryegrass (Revision)
Sheeps and Red Fescue (Revision)
Tea

*58. The TWA noted that the TWV planned to discuss the following Test Guidelines:

French Bean
Pea

and agreed that the Office of the Union should notify the leading experts of the interested experts, identified in Annex II, and should consider the draft Test Guidelines produced by the TWV at its thirty-third session.

*59. The leading experts, interested experts and timetables for the development of the Test Guidelines, as set out in paragraphs 50 to 55, are set out in Annex II.

Future Program, Date and Place of the Next Session

*60. At the invitation of Poland, the TWA agreed to hold its thirty-third session in Slupia Wielka, Poland, from June 28 to July 2, 2004.

*61. The TWA noted that it had received expressions of interest from South Africa and New Zealand to host the TWA in 2005 and 2006 and heard that Hungary had made an official offer to host the thirty-sixth session of the TWA in 2007. China, Kenya and the Republic of Korea expressed their wish to host a future session of the TWA.

*62. 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. Project to consider the publication of variety descriptions
6. Project for exchanging seed of selected varieties between interested countries
7. Review of UPOV Information Databases
8. TGP documents
9. Discussion on draft Test Guidelines (Subgroups):
10. Recommendations on draft Test Guidelines (plenary)
11. Date and place of the next session
12. Future program
13. Report on the conclusions of the session (if time permits)
14. Closing of the session

Visits

63. On Wednesday, September 9, 2003, the TWA visited the headquarters of the National Center for Seeds and Seedlings (NCSS), the Society for Techno-innovation of Agriculture, Forestry and Fisheries (STAFF), the genebank of the National Institute of Agrobiological Sciences (NIAS), the National Agricultural Research Organization (NARO) and its field trials for rice and sesame at Yawara and the National Institute for Health Sciences (NIHS).

64. This report has been adopted by correspondence.

[Annex I follows]

ANNEX I

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[Annex II follows]

ANNEX II

LIST OF LEADING EXPERTS

DRAFT TEST GUIDELINES TO BE SUBMITTED TO THE TECHNICAL COMMITTEE IN 2004

Test Guidelines	Document	Leading experts	Interested experts (countries) (for name of experts see List of Participants, Annex I)
Lupins	TG/66/4 (proj.3).	Joan Sadie – ZA	DE, FR
Potato	TG/23/6 (proj.2).	Beate Rücker – DE	AR, AU, BR, CA, ES, FR, GB, IL, NL, NZ, RU, SE, UY, ZA, CPVO
Rice	TG/16/8 (proj.2).	Luis Salaices – ES	BR, CN, FR, HU, IT, JP, KR, UY

All requested information to be submitted to the Office of the Union no later than October 24, 2003.

POSSIBLE "FINAL" DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWA/33

Test Guidelines	Document	Leading experts	Interested experts (countries) (for name of experts see List of Participants, Annex I)
Coffee	TG/COFFEE(proj.1)	Leontino Rezende – BR	KE, MX
Lotus	TWA/31/3	Carlos Gómez – UY	DE, FR, NZ, UK
Lucerne	TG/06/5(proj.1)	Joël Guiard – FR	AR, AU, CZ, DE, EE, ES, HU, ZA, CPVO

New draft to be submitted to the Office of the Union no later than May 14, 2004.

LIST OF LEADING EXPERTS

DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWA/33

Test Guidelines	Document	Leading experts	Interested experts (countries) (for name of experts see List of Participants, Annex I)
Common Millet	TG/COM-MIL(proj.1)	Maksym Melnychuk - UA	FR
French Bean	TG/12/3	TWV (François Boulineau (FR))	BR, ES, KE
Ginseng	TG/GINSEN(proj.2)	Keun-Jin Choi – KR	CN, JP
Grain Amaranth	TG/AMARAN(proj.1)	Aquiles Carballo Carballo - MX	BR, HU, ZA
Hops		Beate Rücker - DE	CPVO
Medics (Medicago spp. other than sativa)	TG/MEDICS(proj.1)	Joan Sadie – ZA	AR, AU, ZA
Pea	TG/7/9	TWV (Niall Green (GB))	DE, DK, ES, FI, FR, GB, HU, CPVO
Pearl Millet		Leontino Rezende Taveira (BR)	FR
Ryegrass (Revision)	TG/04/7	Michael Camlin – UK	AR, CPVO, CZ, DE, DK, FR, HU, NL, NZ, ZA
Sesame	TG/SESAME(proj.1)	Baruch Bar-Tel – IL	BR, CN, JP, KR
Sheep's Fescue (including Hard Fescue) and Red Fescue (Revision)	TG/67/4	Henk Bonthuis - NL	DE, DK, FI, FR, GB, CPVO
Tea		Lin Xiangming – CN/ Evans O. Sikinyi – KE (joint leading experts)	BR, JP, KR

New draft to be submitted to the Office of the Union no later than May 28, 2004.

[Annex III follows]

ANNEX III

Address by Mr. Sanji Takemori, Director of Seeds and Seedlings Division (MAFF)

My name is Sanji Takemori, Director of the Seeds and Seedlings Division of MAFF. It is my honor to make the opening address of TWA in front of experts from all over the world.

First of all, let me say a phrase to express my feeling: Welcome to Japan! I am really happy to see you here although Japan is a far away country for most of you.

I believe that it is a very important matter to protect a newly bred variety among all the countries. From this point of view, Japan supports several activities run by UPOV to harmonize world PBR protection systems.

Thus, we have decided to assist holding TWP's in Japan, because Test Guidelines are one of the essential issues for the harmonization. Two years ago, we assisted TWO in Nagano, last year TWV in Tsukuba, and for this year, BMT last week and this meeting in Tsukuba. I am sure that discussions within this session are fruitful, and I hope that you enjoy your stay in this city.

Let me explain some figures that explain the present situation of the Japanese plant variety protection system.

The number of applications has been increasing year by year since Japan ratified the UPOV Act in 1982. There were more than one thousand applications just for the year 2002, and it is the third highest in number among all the UPOV members and CPVO. Within the applications of 2002, a vast part, 85%, are ornamentals, and the second largest category, vegetables, are 4% of them. One of the features is that almost 90% of the applications are from the private sector. The public sector, around 10% in number, covers mainly food and fodder crops. I think it is worth noting that the applications of foreign bred varieties are also expanding and they accounted for almost 35% among all the applications last year.

I believe such an active registration and internationalization is a consequence of being a UPOV member country.

In order to cope with such applications, an efficient managing system is required. In Japan, there are two organizations involving plant variety protection. Legal issues are run by my division, the Seeds and Seedlings Division. Growing test issues are handled by the National Center for Seeds and Seedlings.

I have 43 staff in my division. This number includes 20 examiners and several supporting officials. It seems a great number for you, I understand. Nevertheless, our staff covers enforcement of PBR and seed controls besides registration, so it is indispensable to have such man power.

Besides, we are using three DUS test methods for the best use of resources. They are growing tests done by the National Centre for Seeds and Seedlings. On-site inspection by our examiners, and documentary examination. These methods are selected by examiners based on features of the crops and capacity of applicants. Fruit

trees are tested by on-site inspection mainly but both growing tests and on-site inspection are used for ornamentals and vegetables, for example.

I should note on this point that the National Center for Seeds and Seedlings plays an important role in the growing test. To tell the truth, we cannot manage the system without close cooperation with it. You will have a chance to visit this institute on Wednesday, please look forward to it.

To conclude, let me state my expectation: I am looking forward to the fruit of the session, not only for a good advancement of TG related discussion, but also the chance to exchange views with experts from member countries.

Thank you for your attention.

Opening words by Mr. Kiyohumi Kuwana,
President of the National Center for Seeds and Seedlings (MAFF)

Good morning everyone, distinguished delegates of UPOV member countries.

My name is Kiyohumi Kuwana, President of the National Center for Seeds and Seedlings, the Incorporated Administrative Agency.

It is my great pleasure to have you in Tsukuba, at the headquarters of our center.

I am really delighted to have a chance to meet all of you, experts from all over the world. And I am sure that having a chance to exchange views with such honorable members has a great meaning to develop our Plant Breeder's Right protection.

The NCSS was established in 1986 as the administrative body to execute seed related tasks, namely, DUS testing, seed testing and research on seeds technology. Especially for the DUS testing, NCSS is the only organization to carry this out in Japan.

As our center deals with living materials, we have 14 stations all over Japan from Hokkaido to Okinawa, the north-end to the south-end, to cover all the climatic variations. I have heard that you will visit our station on September 10. We are looking forward to welcoming you at NCSS, and please let us explain our tasks in detail at that time.

In conclusion, I would like to express the hope that this meeting will achieve a great success.

Thank you for your attention.

[End of Annex III and of document]