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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
Geneva

TECHNICAL COMMITTEE

Forty-Eighth Session
Geneva, March 26 to 28, 2012

REPORT[1]

adopted by the Technical Committee

Opening of the session

*1. The Technical Committee (TC) held its forty-eighth session in Geneva from March 26 to 28, 2012. The list of participants is reproduced in Annex I to this report.

*2. The session was opened by Mr. Joël Guiard (France), Chairman of the TC, who welcomed the participants.

*3. The Chairman reported that the former Yugoslav Republic of Macedonia had deposited its instrument of accession to the UPOV Convention on April 4, 2011, and had become the sixty-ninth member of the Union on May 4, 2011, and that Peru had deposited its instrument of accession to the 1991 Act of the UPOV Convention on July 8, 2011, and had become the seventieth member of the Union on August 8, 2011. He also reported that Ireland, which had been a member of the Union since November 8, 1981, had deposited its instrument of ratification of the 1991 Act of the UPOV Convention on December 8, 2011, and had become bound by the 1991 Act on January 8, 2012.

*4. The Vice Secretary-General reported that Mr. Raimundo Lavignolle had left the Office of the Union at the end of 2011 and expressed his appreciation for the dedicated and excellent service that Mr. Lavignolle had provided during his 13 years with the Office of the Union.

Adoption of the Agenda

*5. The TC adopted the agenda as presented in document TC/48/1 Rev. It noted that an interactive version of the pdf version of the agenda had been made available on the website. The TC agreed to the inclusion of photographs in the list of participants of the report of the session, subject to agreement by each participant.

*6. The TC noted that, as agreed at its forty-seventh session, documents under consideration at its forty-eighth session would be displayed on screen in the language of the original document.

*7. In response to a request from the Delegation of Spain, the Vice Secretary-General confirmed the intention to add an indication of the language in document references for future sessions.

[1] The asterisked (*) paragraphs in this report are reproduced from document TC/48/22 (Report on the Conclusions).

Discussion on experiences of members of the Union on measures to improve the efficiency and effectiveness of DUS testing

Tools for the management of variety collections

*8. The TC discussed tools for the management of variety collections on the basis of a presentation by Mr. Kees van Ettekoven (Netherlands).

*9. The Chairman concluded that the identification of varieties that should be included in the variety collection was a major challenge and that increasing worldwide knowledge of varieties increased that challenge. He noted that it was preferable to have as much knowledge as possible and to try to find effective tools that could meet that challenge. In that regard, he observed that molecular techniques had an important role to play in supplementing, while not replacing, existing tools. He emphasized that the expertise of the DUS examiners was of paramount importance in any approach to the management of variety collections.

Examples varieties

*10. The TC discussed example varieties on the basis of a presentation by Mr. Richard Brand (France).

*11. The Chairman recalled that the discussion concerned the inclusion of example varieties in the (UPOV) Test Guidelines and noted that a complete set of example varieties would be important for each member of the Union. With regard to example varieties in the Test Guidelines, he concluded that, in many cases, it would be difficult to identify a “universal” set of example varieties that would be suitable for all members of the Union. However, where it was not possible to develop a universal set of example varieties, he noted that it might still be beneficial to try to preserve similar ranges for the states of expression for all members of the Union. With regard to solutions where a universal set of example varieties could not be agreed for all members of the Union, he recalled that regional sets of example varieties could be an effective measure. He also observed that the making available of variety descriptions by members of the Union could be an important source of information, whilst noting that the development of such databases would involve substantial cost.

*12. With regard to Test Guidelines, the Chairman noted a suggestion that the Leading Expert might provide a full list of varieties that might be available as example varieties, rather than suggesting a limited list. He also recalled that, where appropriate, example varieties might be replaced by illustrations and references to calibration books of members of the Union, in the Test Guidelines’ Chapter on Literature.

Discriminative power of characteristics

*13. The TC discussed the discriminative power of characteristics on the basis of a presentation by Mrs. Sally Watson (United Kingdom).

*14. The Chairman noted that the following observations in the presentation would provide useful guidance for the TWPs:

(a) the asterisked characteristics in the Test Guidelines are observed on all varieties in DUS trials by all members of the Union;

(b) some characteristics are useful only rarely, maybe not every year, but when used they are invaluable;

(c) in some crops where the varieties are all from a similar genetic base and discrimination is difficult, more characteristics may be necessary;

(d) a reduction in the number of characteristics does not necessarily save costs: more direct comparison plots may be needed at greater overall cost;

(e) not all characteristics are equally discriminatory for all members of the Union; and

(f) TWP discussions on experiences with characteristics and consequent harmonization are invaluable.

The Chairman added that an important role of the TWPs was to ensure the selection of suitable characteristics and to ensure that the number of characteristics was appropriate for the purpose of the

examination of DUS. In particular, he emphasized that it was not necessary to have a set of characteristics that would describe all germplasm.

Grouping characteristics

*15. The TC discussed example varieties on the basis of a presentation prepared by Mr. Dirk Theobald (European Union) and presented, in his absence, by Mr. Carlos Godinho (European Union).

*16. The Chairman recalled that the selection of grouping characteristics in the UPOV Test Guidelines was based on the information that was likely to be available from other members of the Union and to be requested from the breeder in the Technical Questionnaire. Further characteristics might also be useful for grouping where the information available to the DUS examiner provided useful discrimination between varieties from documented states of expression for those characteristics, e.g. where the variety descriptions were obtained from the same growing trial, such as could be the case from the first growing cycle where the DUS examination involved two growing cycles. He concluded by recalling that the use of different characteristics for grouping could lead to a different route to the decision on distinctness, but that the decision on distinctness would be the same if the UPOV principles for grouping were followed.

Uniformity: harmonization between species

*17. The TC discussed the harmonization of uniformity standards between species on the basis of a presentation by Mrs. Radmila Safarikova (Czech Republic).

*18. The Chairman concluded that it was important for the uniformity standards to reflect the genetic structure and type of propagation of the crop/species concerned. However, with regard to harmonization for uniformity, he noted that the intention was to ensure that the UPOV principles were implemented in a harmonized, i.e. consistent, manner. Therefore, he considered that it would be valuable to review the current situation and reflect if there were any Test Guidelines where it would be appropriate to seek greater consistency.

Number of plants to be examined

*19. The TC discussed the number of plants to be examined on the basis of a presentation by Mrs. Beate Rücker (Germany).

*20. The Chairman suggested that the following observations in the presentation would provide effective guidance and might be considered by the TWPs:

Considerations for the number of plants to be observed for distinctness in case of QN (PQ) characteristics:

(a) Observation on the plot as a whole (VG/MG)
- indicated number to be considered as minimum number

(b) Observation on subsample from plot (VG/MG)
- indicated number to be considered as minimum number

(c) Observations on individual plants (VS/MS)
- number of plants important for precision of record
- specific number to be indicated

Considerations for the number of plants for candidate varieties and varieties to be compared with

If uniformity has not to be observed for similar varieties of common knowledge (reference varieties), it can be considered to include in the trial a lower number of plants for the reference varieties.

Overall Conclusion

*21. The Chairman thanked the speakers for their presentations and the participants for their active involvement in the discussions. He noted that the presentations were a valuable source of information and confirmed that they would be available via the UPOV website for further consideration by the TC and the TWPs.

*22. The Chairman observed that the discussions had highlighted the crucial importance of expertise in the form of crop knowledge, breeding developments and UPOV/DUS knowledge. The complexity of factors involved in designing and interpreting DUS tests meant that it was not feasible to provide a comprehensive guide to address all situations. Acknowledgement of that situation added further emphasis to the importance of cooperation between members of the Union. He concluded that practical experience in DUS testing was essential and pointed to the unique role of the TWPs in developing expertise and transferring knowledge for both experienced and less experienced DUS examiners.

Report on developments in UPOV including relevant matters discussed in the last sessions of the Administrative and Legal Committee, the Consultative Committee and the Council

23. The Vice Secretary-General provided an oral report, in the form of a Powerpoint presentation, on the sixty-third and sixty-fourth sessions of the Administrative and Legal Committee (CAJ), eighty-first and eighty-second sessions of the Consultative Committee and the twenty-eighth extraordinary session and the forty-fifth ordinary session of the Council. A copy of that presentation is provided in Annex II to this report (in original language only).

Progress reports on the work of the Technical Working Parties, including the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT), and the *Ad Hoc* Crop Subgroups on Molecular Techniques

24. The TC received oral reports from the Chairpersons, in the form of a Powerpoint presentations, on the work of the Technical Working Party for Agricultural Crops (TWA), the Technical Working Party on Automation and Computer Programs (TWC), the Technical Working Party for Fruit Crops (TWF), the Technical Working Party for Ornamental Plants and Forest Trees (TWO), the Technical Working Party for Vegetables (TWV) and the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT). A copy of those presentations is provided in Annex III to this report (in original language only) and a summary of the work provided by the Chairpersons is provided below:

Technical Working Party for Agricultural Crops (TWA)

25. The Technical Working Party for Agricultural Crops (TWA) held its fortieth session in Brasilia, Brazil, from May 16 to 20, 2011, under the Chairmanship of Mr. Dirk Theobald (European Union). The report of that meeting can be found in document TWA/40/23 “Report”.

26. The session was attended by 60 participants from 23 members of the Union, 1 observer State and 2 organizations. The preparatory workshop was held on the afternoon of May 15 and was attended by 26 participants from 11 members of the Union, 2 observer States and 1 organization.

27. The TWA was welcomed by Mr. Erikson Camargo Chandoha, Secretary of Agricultural Development and Cooperativism, Ministry of Agriculture, Livestock and Food Supply, Brazil, followed by a presentation on plant variety protection in Brazil by Mrs. Daniela de Moraes Aviani, Coordinator, National Plant Variety Protection Service, Ministry of Agriculture, Livestock and Food Supply.

28. The TWA adopted the agenda and received summarized short reports on developments in plant variety protection from the participants, followed by a presentation from the Office of UPOV on the latest developments within UPOV. After the reports, the TWA noted the information on developments in UPOV on molecular techniques, as provided in document TWA/40/2 “Molecular Techniques”.

29. A number of TGP documents were discussed: TGP/7 “Development of Test Guidelines”, TGP/8 “Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability”, TGP/12 “Guidance on Certain Physiological Characteristics” and TGP/14 “Glossary of Terms Used in UPOV Documents”. Regarding the revision of TGP/7, the TWA considered document TWA/40/11 “Summary of Revisions Proposed for Document TGP/7 Development of Test Guidelines” and noted the different aspects considered for revision.

30. With regard to the guidance on the number of plants to be examined (for distinctness), the TWA discussed whether a proposal in Annex I of document TWA/40/11 should refer only to the assessment of distinctness, or whether it should be elaborated further in order to cover also uniformity and stability. A proposal was made to prepare a general document based on general considerations and to consider

separately the number of plants in the trial, the number of plants/parts of plants to be examined for the assessment of distinctness and the number of plants/parts of plants to be examined for the assessment of uniformity.

31. The TWA considered the background information contained in Annex II of document TWA/40/11 concerning the "Guidance for method of observation: Revision of TGP/7" and noted the comments by the TWPs in 2010.

32. Consideration was given to document TWA/40/12 "Revision of TGP/7: Providing Photographs with the Technical Questionnaire" and changes to the text were proposed.

33. Document TWA/40/19 "Revision of TGP/7: Quantity of Plant Material Required" was considered and the TWA noted the information provided.

34. The TWA considered document TWA/40/18 "Example Varieties: Revision of Document TGP/7" on example varieties and noted the comments made by the TWPs in 2010, but agreed it was not necessary to redraft the proposal already prepared, as yet.

35. With regard to document TGP/8, consideration was given to document TWA/40/14 "Revision of Document TGP/8: Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability" which consisted of a number of annexes covering the different aspects to be revised. The information in these annexes was noted and discussed and certain proposals and recommendations were made.

36. The information in document TWA/40/15 "Revision of Document TGP/12: Disease Nomenclature and Disease Resistance Characteristics" was considered and noted by the TWA.

37. The TWA considered the documents TWA/40/3 "TGP Documents", Annexes I and II and TWA/40/16 Rev. "Revision of Document TGP/14: New Section for Color Characteristics" covering the revision of TGP/14 and received a presentation on a study concerning the "Examination of the use of component and composite characters for determining distinctness". The modifications proposed to document TWA/40/16 Rev. with regard to Section 2: Botanical terms, Subsection 3: Color were also noted and a recommendation with regard to the subsection on "Variegation" was made.

38. The information provided in document TWA/40/10 "Method for calculation of COYU" and document TWA/40/9 "Assessment of Uniformity by Off-types on the Basis of More than One Sample or Sub-samples" was noted, as well as the developments with regard to "Variety Denominations" (document TWA/40/4) and Information and databases which included the following documents: TWA/40/5 "UPOV Information Databases", TWA/40/6 "Variety Description Databases", TWA/40/7 "Exchangeable Software" and TWA/40/8 "Electronic Application Systems".

39. The TWA received a presentation on the development of a regional set of example varieties for South East Asia for the asterisked characteristics in the UPOV Test Guidelines for Rice by Mr. Edilberto D. Redoña from the International Rice Research Institute (IRRI). The TWA concluded that the results of the project were of high value.

40. The TWA considered document TWA/40/17 "Partial Revision of Test Guidelines for French Bean (document TG/12/9)".

41. The TWA took note of the information in document TWA/40/22 "Matters to be resolved concerning Test Guidelines adopted by the Technical Committee" concerning the Test Guidelines for Foxtail Millet and also noted that the subgroup did not have enough time to consider the reply of the Leading Expert to the request made by the Technical Committee (TC) at its forty-seventh session. It was agreed that the Test Guidelines for Foxtail Millet should be re-discussed at the forty-first session of the TWA.

42. Ten draft Test Guidelines were discussed and it was agreed to submit 4 of those Test Guidelines to the TC; namely, Buckwheat, Durum Wheat, Hemp and Sesame.

43. The TWA planned to discuss 13 Test Guidelines in 2012, of which 3 were new.

44. The TWA agreed to discuss the following draft Test Guidelines at its forty-first session:

- Adlay (*Coix ma-yuen* Roman.)
- Adzuki/Red bean (*Vigna angularis*)
- Cassava (*Manihot esculenta* Crantz.)
- *Common Vetch (*Vicia sativa* L.) (Revision)
- *Foxtail Millet (*Setaria italica* (L.) P. Beauv.)
- Groundnut (*Arachis* L.) (Revision)
- Kentucky Bluegrass (*Poa pratensis* L.) (Revision)
- Rhodesgrass (*Chloris gayana* Kunth)
- Scorpion Weed (*Phacelia tanacetifolia* Benth.)
- Sorghum (*Sorghum bicolor* L.) (Revision)
- Tall wheatgrass (*Elytrigia elongata* (Host) Nevski), (*Agropyron elongatum* (Host) P. Beauv.)
- **Urochloa (Brachiaria)*
- Wheat (*Triticum aestivum*) (Revision).

45. At the invitation of France, the TWA agreed to hold its forty-first session in Angers, from May 21 to 25, 2012, with the preparatory workshop on May 20.

46. The TWA proposed to consider the following items at its forty-first 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
   (b) Reports on developments within UPOV
4. Molecular Techniques
5. TGP documents
6. Variety denominations Information and databases
   (a) UPOV information databases
   (b) Variety description databases
   (c) Exchangeable software
   (d) Electronic application systems Uniformity assessment
7. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee (if appropriate)
8. Discussion on draft Test Guidelines (Subgroups)
9. Recommendations on draft Test Guidelines
10. Guidance for drafters of Test Guidelines
11. Date and place of the next session
12. Future program
13. Report on the session (if time permits)
14. Closing of the session.

47. On the morning of May 18, 2011, the TWA visited Pioneer Seeds, Brasilia D.F. Seed Processing and Research Unit, and its soybean seed production plant as well as the Brazilian Enterprise for Research on Farming and Cattle Raising, Brazilian Agriculture Research Cooperation (EMBRAPA) Cerrados, where the TWA visited field trials of Cassava and Urochloa.

48. The TWA thanked Mr. Dirk Theobald and took note that he was awarded a UPOV bronze medal in recognition of his chairmanship of the TWA from 2009 to 2011.

Technical Working Party on Automation and Computer Programs (TWC)

49. The Technical Working Party on Automation and Computer Programs (TWC) held its twenty-ninth session in Geneva, from June 6 to June 10, 2011, under the chairmanship of Mr. Gerie van der Heijden (Netherlands).

50. The TWC session was attended by 22 participants from 16 members of the Union. The preparatory workshop was held during the afternoon of Monday, June 6, and was attended by 13 participants from 10 members of the Union. The TWC session was webcast so that other participants could attend the meeting via the internet. This was a trial for UPOV to see if this type of meeting was suitable for webcasting. In total, 25 participants from 10 members of the Union participated through the internet. In total, 32 documents were discussed during the meeting.

51. The TWC considered document TWC/29/11 "Summary of Revisions Proposed for Document TGP/7 'Development of Test Guidelines'". With regard to Annex I "Number of plants to be considered for the assessment of Distinctness", the TWC proposed that experts from Germany and Poland should establish a sub-group to develop further guidance on the number of plants to be examined for distinctness.

52. The TWC discussed the Annexes to document TWC/29/14, "TGP/8: Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability", as follows:

TGP/8 PART I: DUS TRIAL DESIGN AND DATA ANALYSIS

ANNEX I : New Section 2 - Data to be recorded.

53. After some amendments this section will be discussed in the Technical Working Parties (TWPs) in 2012 with a view to its incorporation into TGP/8.

ANNEX II: New Section 3 - Control of variation due to different observers

54. The TWC agreed that a new document, taking into account the information contained in document TWC/25/12 Rev. "Review of Test Design: Checking Levels of Quality (Revised)", should be prepared.

ANNEX III: New Section 6 – Data processing for the assessment of distinctness and for producing variety descriptions

55. The TWC expressed a preference to develop this section for Part I in TGP/8, describing the principles for producing variety descriptions

New Section –on the reduction of trials

56. The document TWC/29/26 "Cyclic Planting of Established Varieties to Reduce Trial Size; Proposal for Text to be Added to TGP/8", which was introduced under agenda item 11, was prepared to be included in Part I of TGP/8.

TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION

ANNEX V: New Section after Section COYU Statistical Methods for Very Small Sample Sizes

57. The TWC agreed that it would be useful to extend the draft with a view to presenting possible solutions to the different situations presented.

ANNEX VI: New Section 11 Examining DUS in bulk samples

58. It was agreed that New Section 11: "Examining DUS in bulk samples" to be included in TGP/8, but the content of sections "Distinctness" and "Uniformity" should be removed from the main text and presented in an appendix.

ANNEX VII: New Section 12 - Examining characteristics using image analysis

59. Several presentations were made on the use of image analysis software in the examination of DUS. The TWC agreed that relevant information on image analysis as a method should be included in TGP/8 and a new section be prepared on the basis of the presentations.

ANNEX VIII: New Section 13 - Methods for data processing for the assessment of distinctness and for producing variety descriptions

60. The TWC agreed that the information on the species presented in the method from the United Kingdom should be updated and that it should be included in TGP/8. The TWC also agreed that the methods provided by Japan and France should be included in TGP/8. The discussion of similarities and differences in these proposals will continue in the TWC meeting in 2012, with the objective to identify methods that could serve as generic models for producing variety descriptions.

ANNEX X: New Section - Statistical methods for visually observed characteristics

61. The TWC agreed that it would be necessary to explore the consequences of the decisions for DUS examination, as the method is a test for differences in the distribution - both location and dispersion. The consequences of excluding certain varieties from the test, because they did not have sufficient numbers in some cells, should be further investigated.

ANNEX XII: Section 4 – 2x1 % Method - Minimum number of degrees of freedom for the 2x1% Method

62. The TWC agreed that the explanation proposed in Annex XII should be included in TGP/8. The TWC also agreed that the explanation in Annex XIII concerning the subject “Minimum number of degrees of freedom for COYU” should be included in TGP/8.

ANNEX XIV: Section 10 – Minimum number of comparable varieties for the Relative Variance Method

63. The TWC conditionally agreed with the proposal made by Australia. However, doubts were expressed regarding some assumptions of the method and further investigation will be made with respect to these assumptions and the F value used in the calculations.

64. The TWC agreed that a proposal in document TWC/29/25 “An Adjustment to the COYD Method When Varieties are Grouped Within the DUS Trial; Proposal for Text to be Added to TGP/8” presented under agenda item 11 Development of COY” should be included in TGP/8 Part II Section 3 “The Combined over year’s criteria for distinctness (COYD)”.

65. The TWC noted that different color groups, as established in Section 3 of Annex I to document TWC/29/16 “Revision of document TGP/14: New Section for Color Characteristics”, were not created for the purpose of grouping varieties for DUS trials and should not be used for that purpose. The TWC agreed to invite papers on how information on colors is used for DUS examination for presentation at the next session of the TWC.

66. A presentation was given on the latest prototype of the online UPOV plant variety database. The request for storing personalized search results was noted, as was the request for the facility to download data from the database for local purposes and the addition of phonetic fields. The TWC agreed that there was a strong need for unique identifiers in the data provided by the contributors.

67. The TWC considered document TWC/29/13 “Concept of a Database Containing Pea Variety Descriptions”. The TWC suggested that the TWV should continue to discuss the concept and ways to achieve harmonization. The TWC received a presentation on “Gemma: A Technical Website to Share DUS Data” (see document TWC/29/24), in which it is possible to store phenotypic and molecular data and digital pictures in “Gemma”, for the management of reference collections.

68. The TWC agreed that the “Bionumerics Software for Databasing and Data Analysis” (see document TWC/29/30) should be included in the exchangeable software for biochemical and molecular data, subject to agreement by the BMT at its thirteenth session. The TWC noted the proposals made by the Russian Federation provided in Annex II to document TWC/29/7 “Exchangeable Software” and looked forward to receiving a presentation by experts from the Russian Federation at a future session.

69. The TWC considered document TWC/29/8 “Electronic Application Systems”. The TWC agreed that the inclusion of the possibility of transferring data from the database hosted by UPOV to the form of the authority would be very useful.

70. The TWC agreed to propose the development of a questionnaire concerning software and hardware used for image analysis and invited UPOV members to make presentations on image analysis at the thirtieth session of the TWC in 2012. It was agreed to include image analysis as a regular item in the agenda of the TWC.

71. The TWC noted the updated information on data loggers provided in document TWC/29/28 “Survey on Hand-Held Data Capture Devices” and agreed that a new circular concerning hand-held data capture devices should be sent by the Office of the Union, inviting further entries in advance of the thirtieth session of the TWC.

72. The TWC considered document TWC/29/9 “Assessing Uniformity by Off-Types on the Basis of More Than one Sample or Sub-Sample” and concluded that the concerned TWC experts with the assistance of crop experts should prepare a document to explore the consequences of different approaches on using real data.

73. With regard to the development of COYU, the TWC considered document TWC/29/22 “Analysis of the Relation Between Log SD and Mean of Varieties”. The TWC agreed that a new document based on the cubic spline model should be prepared for the next session of the TWC.

74. The TWC took note of the information in document TWC/29/23 “A Comparison of COYU and a Method Based on Bennett’s Test for Coefficients of Variation”. Some experts wondered whether better results could be obtained if the Bennett’s Test were compared with COYU at other significance levels and with COYU improved with the cubic spline model.

75. The expert from Germany provided the participants with a CD containing the latest database of TWC working documents.

76. It was concluded that attendance through the internet to the TWC session was not very effective: the meeting should be a forum where people can discuss. A very strict agenda that is needed for web meetings may harm the discussion and interaction is too limited.

77. The TWC agreed to hold its thirtieth session in Chisinau, Republic of Moldova, from June 26 to 29, 2012, with the preparatory workshop on June 25, 2012. During the thirtieth session, the TWC planned to discuss the following items:

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
   (b) Reports on developments within UPOV
4. Molecular techniques
5. TGP documents
6. Information and databases
   (a) UPOV information databases
   (b) Variety description databases
   (c) Exchangeable software
   (d) Electronic application systems
7. Variety denominations
8. Data loggers
9. Image analysis
10. Assessing uniformity by off-types on the basis of more than one sample or sub-samples
11. Development of COY
    (a) COYU: possible proposals for improvements to COYU
    (b) A rationale for excluding varieties of common knowledge from the second growing cycle when COYD is used
12. Statistical analysis of categorical data
13. Database for researching TWC documents
14. Date and place of the next session
15. Future program

78. Mr. Gerie van der Heijden was awarded a UPOV bronze medal in recognition of his chairmanship of the TWC from 2009 to 2011.

Technical Working Party for Fruit Crops (TWF)

79. The Technical Working Party for Fruit Crops (TWF) held its forty-second session in Hiroshima, Japan, from November 14 to 18, 2011. The session was opened and chaired by Mrs. Bronislava Bátorová (Slovakia).

80. The TWF session was attended by 50 participants from 17 members of the Union, four observer States and one observer organization.

81. The TWF was welcomed by Mr. Takashi Ueki, Director, PVP Office, New Business and Intellectual Property Division from the Ministry of Agriculture, Forestry and Fisheries. A presentation on the examination system in Japan was given by Mr. Katsumi Yamaguchi, Chief Examiner from the PVP Office.

82. A number of TGP documents were discussed by the TWF and the following key issues can be highlighted:

83. The TWF noted the summary of revisions proposed for document TGP/7 "Development of Test Guidelines" as set out in document TWF/42/11 "Summary of Revisions Proposed for document TGP/7 "Development of Test Guidelines":

- Example varieties.
- Providing photographs with the Technical Questionnaire.
- Quantity of plant material required.
- Guidance for method of observation.
- Guidance on the number of plants to be examined.

84. The TWF agreed that Mr. Erik Schulte (Germany) be invited to participate in the development of guidance on the number of plants to be examined.

85. For document TGP/8, "Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability", the TWF considered document TWF/42/14. It was concluded that Annex I provided valuable information and should be included in document TGP/8. Annex II to Annex XIV were discussed and comments and recommendations made.

86. The TWF considered document TWF/42/15 "Revision of Document TGP/12: "Disease Nomenclature and Disease Resistance Characteristics" and agreed with the proposal for explanations for disease resistance characteristics in Test Guidelines and nomenclature of pathogens, as presented in the annex to that document. After considering document TWF/42/21 "Disease Resistance Characteristics in Test Guidelines for Fruit Crops", the TWF agreed that there was no pressing need to adopt further disease resistance testing within the fruit Test Guidelines, although that might change in the future.

87. In relation to document TGP/14 "Glossary of Terms Used in UPOV Documents", the TWF considered documents TWF/42/3 "TGP Documents", Annexes I and II and TWF/42/16 "Revision of Document TGP/14: New Section for Color Characteristics". The TWF noted that Table 1.2 (Characteristic: ratio length/width) contained in Annex I to document TWF/42/3 should be updated to reflect the order of states as indicated in TGP/14.

88. The TWF noted the report on developments in Variety Denominations provided in document TWF/42/4 "Variety Denominations".

89. Proposals for Partial Revisions: Mandarins: the TWF discussed documents TWF/42/19 "Proposal for a Partial Revision of the Test Guidelines for Mandarin (Citrus; Group 1)" and TWF/42/19 Add., "Addendum to Proposal for a Partial Revision of the Test Guidelines for Mandarin (Citrus; Group 1)" in particular the proposal for a new characteristic after existing characteristic 98 ("Fruit: number of seeds controlled manual cross-pollination"). Experts from Morocco requested that the methodology of controlled manual cross-pollination be clarified before any such characteristic could be introduced and made specific reference to the requirements in document TG/1/3 Section 4.2.1 "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants. The TWF discussed the proposed mandarin partial revision and agreed that further studies were

necessary to test the methodology and also agreed that the wording of the characteristic might need to be reviewed. With these objectives in mind, the TWF agreed to form a subgroup in which Morocco, South Africa and Spain would participate. Australia and Brazil also showed an interest in participating; however they were unable to commit at that time. The TWF requested Mr. Jean Maison (European Union) to coordinate the work of the subgroup. It was agreed to postpone any decision on the proposed mandarin partial revision until the subgroup had presented its results to the TWF.

90. The TWF agreed that the following draft Test Guidelines should be sent to the Technical Committee for adoption at its forty-eighth session, to be held in Geneva from March 26 to 28, 2012: Actinidia (*Actinidi* Lindl.), Blue Honeysuckle, Honeyberry (*Lonicera caerulea* L.), Papaya (*Carica papaya* L.), Pineapple (*Ananas comosus* (L.) Merr.) and the Partial Revision for Strawberry.

91. The TWF agreed to discuss the following 11 Test Guidelines at its forty-third session:

- *Acca sellowiana* (Berg) Burret
- Apple rootstocks (*Malus* Mill.) (Revision)
- *Fortunella* Swingle
- *Litchi* Sonn
- Mandarins (partial revision)
- Pecan nut
- Pomegranate (*Punica granatum* L.)
- *Vanilla* Mill.
- *Cocos nucifera* L.
- Prunus rootstocks (revision)
- Peach

92. At the invitation of the expert from China, the TWF agreed to hold its forty-third session in Beijing, China, from July 30 to August 3, 2012.

93. The TWF 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
   (b) Reports on developments within UPOV
4. Molecular techniques:
5. TGP documents
6. Variety denominations
7. Information and databases
   (a) UPOV information databases
   (b) Variety description databases
   (c) Exchangeable software
   (d) Electronic application systems
8. Assessing uniformity by off-types on the basis of more than one sample or sub-samples
9. Experiences with new types and species
10. Proposals for Partial Revision/Corrections of Test Guidelines (if appropriate)
11. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee
12. Discussion on draft Test Guidelines (Subgroups)
13. Recommendations on draft Test Guidelines
14. Guidance for drafters of Test Guidelines
15. Date and place of next session
16. Future program
17. Adoption of the Report of the session (if time permits)
18. Closing of the session.

94. Mrs. Bronislava Bátorová was awarded a UPOV bronze medal in recognition of her chairmanship of the TWF from 2009 to 2011.

Technical Working Party for Ornamental Plants and Forest Trees (TWO)

95. The Technical Working Party for Ornamental Plants and Forest Trees (TWO) held its forty-fourth session in Fukuyama City, Hiroshima Prefecture, Japan, from November 7 to 11, 2011. The session was chaired by Ms. Andrea Menne (Germany), Chairperson of the TWO. The detailed report appears in document TWO/44/25.

96. The meeting was attended by 67 participants, from 16 members of the Union and six observer States and one observer organization. The preparatory workshop was held during the afternoon of November 6 and was attended by 34 participants.

97. The TWO was welcomed by Mr. Jyunya Endo, Director, New Business and Intellectual Property Division, Food Industry Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries. Mr. Endo made a presentation on the plant variety protection system in Japan.

98. The TWO noted the information on developments in plant variety protection from members and observers provided in document TWO/44/19 “Reports on Development in Plant Variety Protection from Members and Observers” and received an oral report from the Office of the Union on the latest developments within UPOV.

99. The TWO considered the proposal in Annex I to document TWO/44/11 “Summary of revisions Proposed for document TGP/7 Development of Test Guidelines” and agreed that guidance be considered to explain when the number of plants in Test Guidelines can be considered to be a minimum number rather than a specific number. It further agreed that guidance be developed on the number of plants in a DUS trial required for examining distinctness, determining typical expression of a variety of common knowledge and establishing a variety description.

100. The TWO welcomed the observation by the TWC, at its twenty-ninth session, held in Geneva, from June 7 to 10, 2011, that any records of observation by notes correspond to a visual (V) observation. The TWO agreed this guidance should be included in document TGP/7 “Development of Test Guidelines”.

101. The TWO considered document TWO/44/18 “Revision of document TGP/7: Example Varieties”. The TWO did not agree with the general view expressed by the TWV at its forty-fifth session, that example varieties in the UPOV Test Guidelines could not be expected to provide internationally harmonized variety descriptions. The TWO noted the model study for Petunia (document TWO/37/8 “Project to Consider the Publication of Variety Descriptions: Model Study on Petunia”) where it had been seen that there was a high level of consistency for the states of expression across varieties.

102. The TWO agreed with the TWV proposal that consideration should be given, where possible, to allocate Test Guidelines to only one Technical Working Party.

103. The TWO considered document TWO/44/14 “Revision of Document TGP/8: Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability”. The TWO agreed, among other things, that realistic examples of statistical methods for very small sample sizes should be included in the document or, if no cases are provided, the section should be deleted.

104. The TWO considered Annex II to document TWO/44/3 “TGP Documents” concerning component and composite characteristics and endorsed the overall observations and related considerations. It noted that each case would need to be considered on its merits. Further, it considered that states for ratios such as “high” or “low” should be possible provided explanations and illustrations are included to avoid confusion.

105. The TWO considered document TWO/44/16 “Revision of Document TGP/14: New Section for Color Characteristics” and agreed to further explanation on the three elements of color hue, saturation, brightness and the precision of color determinations. These will vary according to circumstances and the states will reflect the level of precision, for example yellowish orange versus RHS Colour Chart Reference. The TWO further agreed to amend and clarify a number of terms used to describe colors and color patterns. These included main color/secondary color, ground color and conspicuousness. A number of other terms in color distribution and color patterns were also considered and suggestions made for review or amendment.

106. The TWO noted the information provided in documents TWO/44/5 “UPOV Information Databases” and TWO/44/6 “Variety Description Databases”.

107. The TWO also noted document TWO/44/7 “Exchangeable Software” and agreed that information on the cost and on intellectual property rights should be considered for inclusion in document UPOV/INF/18/1 “Exchangeable Software”.

108. The TWO noted the report on developments in document TWO/44/14 “TGP/8: trial design and techniques used in the examination of distinctness, uniformity and stability” and agreed to the creation of a new denomination class in document UPOV/INF/12/3 “Explanatory Notes on Variety Denominations under the UPOV Convention”, Annex I: Part II to cover *Eupatorium* L., *Eutrochium* Raf. and *Ageratina* Spach.

109. No reports were received on experiences with new types and species; however, the TWO agreed that document TGP/13 “Guidance for New Types and Species” provides effective guidance in this respect.

110. The TWO agreed to submit seven Test Guidelines to the Technical Committee (TC), five being new Test Guidelines for: Canna (*Canna* L.), Echinacea (*Echinacea* Moench), Heuchera, Heucherella (*Heuchera* L.; x*Heucherella* H. R. Wehrh), Oncidium (*Oncidium* Sw.) and Tree Peony (*Paeonia* Sect. Moutan). Two were partial revisions of the Test Guidelines for Kalanchoe and New Guinea Impatiens. At its forty-fifth session in 2012, the TWO planned to discuss 18 Test Guidelines, consisting of four revisions and 14 new Test Guidelines.

111. The TWO agreed to discuss drafts of the following Test Guidelines at its forty-fifth session:

- *Aglaonema* Schott.
- *Aloe* L.
- *Campanula* L.
- Cosmos (*Cosmos* Cav.)
- Dianella (*Dianella* Lam. ex Juss.)
- Dianthus (Revision)
- Gladiolus (Revision)
- *Hebe* Comm. ex Juss.
- Hosta
- Lilac (*Syringa* L.)
- *Lobelia erinus* L.
- *Lomandra* Labill.
- Mandevilla
- Osteospermum (Revision)
- Phalaenopsis (Revision)
- *Zinnia* L.
- Eucalyptus (part of genus only)
- *Callistephus chinensis* (L.) Nees (China Aster)

112. At the invitation of the expert from the Republic of Korea, the TWO agreed to hold its forty-fifth session in Seoul, from August 6 to 10, 2012, with the preparatory workshop to be held on August 5, 2012.

113. The TWO recalled that Australia and New Zealand had offered to jointly host the TWO and TWF sessions, respectively, in April/May 2013 and that the TWO had expressed its support for that offer.

114. The TWO 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
   (b) Reports on developments within UPOV
4. Molecular techniques:

5. TGP documents
6. Variety denominations
7. Information and databases
   (a) UPOV information databases
   (b) Variety description databases
   (c) Exchangeable software
   (d) Electronic application systems
8. Assessing uniformity by off-types on the basis of more than one sample or sub-samples
9. Experiences with new types and species
10. Proposals for Partial Revision/Corrections of Test Guidelines (if appropriate)
11. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee
12. Discussion on draft Test Guidelines (Subgroups)
13. Recommendations on draft Test Guidelines
14. Guidance for drafters of Test Guidelines
15. Date and place of next session
16. Future program
17. Adoption of the Report of the session (if time permits)
18. Closing of the session.

115. Ms. Andra Menne was awarded a UPOV bronze medal in recognition of her chairmanship of the TWO from 2009 to 2011.

Technical Working Party for Vegetables (TWV)

116. The Technical Working Party for Vegetables (TWV) held its forty-fifth session in Monterey, United States of America, from July 25 to 29, 2011 with a preparatory workshop held on July 24. The session was chaired by Ms. Radmila Safarikova (TWV Chairperson). The full report of the meeting is available in document TWV/45/26 “Report”.

117. The TWV was welcomed by Ms. Kitisri Sukhapinda, Patent Attorney, Office of Policy and External Affairs, United States Patent and Trademark Office (USPTO) and Mr Paul M. Zankowski, Commissioner, Plant Variety Protection Office, United States Department of Agriculture (USDA).

118. The session was attended by 27 participants from 13 members of the Union and two observer organizations. The preparatory workshop was attended by 14 participants. The session was opened by Mrs. Radmila Safarikova (Czech Republic), Chairperson of the TWV, who welcomed the participants.

119. The TWV noted the reports from members and observers on developments in plant variety protection and the report on the latest developments within UPOV.

120. The TWV considered document TWV/45/2 “Molecular Techniques”. An expert from the Netherlands reported that experts from the Netherlands and France were planning to prepare a document for the thirteenth session of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT) on issues concerning the possible use of characteristic-specific molecular markers (formerly “Option 1(a)” approach) for disease resistance in vegetables.

121. The TWV agreed that it would be useful for the experts from the Netherlands and France to make a presentation on issues concerning the possible use of characteristic-specific molecular markers for disease resistance in vegetables at the thirteenth session of the BMT, to be held in Brasilia, Brazil, from November 22 to 24, 2011. It agreed that it would be important for those issues to be reported to the forty-sixth session of the TWV, and subsequently to other Technical Working Parties and the Technical Committee.

122. The TWV considered the following TGP documents:

TGP/7 – Development of Test Guidelines

123. The TWV noted the summary of revisions proposed for document TGP/7 “Development of Test Guidelines”, as set out in Part I of document TWV/45/11 ‘Revision of Document TGP/7: Summary of Revisions Proposed for Document TGP/7 'Development of Test Guidelines”.

TGP/8 - Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability

ANNEX I TGP/8 PART I: DUS TRIAL DESIGN AND DATA ANALYSIS

New Section 2 Data to be recorded

ANNEX II TGP/8 PART I: DUS TRIAL DESIGN AND DATA ANALYSIS

New Section 3 – Control of variation due to different observers

124. The TWV agreed that the information provided in document TWV/45/14 “Revision of Document TGP/8: Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability”, Annex II, provided valuable information that should be included in document TGP/8.

ANNEX III TGP/8 PART I: DUS TRIAL DESIGN AND DATA ANALYSIS

New Section 6 – Data processing for the assessment of distinctness and for producing variety descriptions

125. The TWV considered document TWV/45/14 “Revision of Document TGP/8: Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability”, Annex III, in conjunction with Annex VIII of that document. It agreed that the information provided in Annex VIII was a very important first step in developing common guidance on data processing for the assessment of distinctness and for producing variety descriptions, but concluded that the information as presented in Annex VIII would not be appropriate for inclusion in document TGP/8. It agreed to propose that the Office of the Union be requested to summarize the different approaches set out in Annex VIII with regard to aspects in common and aspects where there was divergence. As a next step, on the basis of that summary, consideration could be given to developing general guidance.

ANNEX IV TGP/8 PART I: DUS TRIAL DESIGN AND DATA ANALYSIS

New Section – Information of good agronomic practices for DUS field trials

126. The TWV agreed on the importance of employing good agronomic practice in the conduct of DUS trials and on the need to ensure that staff had the appropriate training and experience for conducting DUS trials. However, it concluded that it would not be desirable to seek to develop detailed guidance in document TGP/8.

ANNEX V TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION

New Section after COYU – Statistical Methods for very small sample sizes

127. The TWV noted the proposal made by the TWA, at its fortieth session, to amend, in the first paragraph, “two varieties different” as “two varieties distinct”.

ANNEX VI TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION

New Section 11 Examining DUS in bulk samples

128. The TWV agreed that the example of sugar beet should be replaced by a crop for which there are UPOV Test Guidelines.

ANNEX VII TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION

New Section 12 Examining characteristics using image analysis

129. The TWV agreed that Section 12.1 should be reworded to explain that image analysis would be an alternative method for observing a characteristic, rather than a principal method for observing a characteristic.

ANNEX IX TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION

New Section – Guidance of data analysis for blind randomized trials

130. The TWV agreed that the experts from France should develop guidance on data analysis for blind randomized trials from their experience, including their use of blind randomized trials for disease resistance.

ANNEX XI TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION

New Section - Guidance for the development of variety descriptions

131. The TWV agreed that the experts from the Netherlands should draft guidance on the development of variety descriptions with information from more than one growing cycle in one location and more than one location.

ANNEX XII TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION

Section 4 – 2x1 % Method - Minimum number of degrees of freedom for the 2x1% Method

132. The TWV noted that at least 10 degrees of freedom were required for the residual mean square used to estimate the standard error in the t-test in each year. The TWV proposed that further clarification was needed with regard to the significance of the wording “preferably at least 20 degrees of freedom”.

ANNEX XIII TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION

Section 9 - The Combined-Over-Years Uniformity Criterion (COYU) - Minimum number of degrees of freedom for COYU

133. The TWV agreed that it would be necessary to provide data in support of the proposal to reduce the minimum degrees of freedom for the varieties-by-years mean square in the COYD analysis of variance from 20 to 10.

134. The TWV agreed that the following wording in Section 3.1 “Summary of requirements for application of method” should be amended because it meant that Long-Term COYD could be used with less than 10 degrees of freedom:

> “- there should be at least 10, and preferably at least 20, degrees of freedom for the varieties-by-years mean square in the COYD analysis of variance, or if there are not, then Long-Term COYD can be used (see 3.6.2 below);”

ANNEX XIV TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION

TGP/12. Guidance on Certain Physiological characteristics (document TWV/45/15).

135. The TWV agreed with the proposal for explanations for disease resistance characteristics in Test Guidelines and nomenclature of pathogens.

136. The TWV considered document TWV/45/24 “Partial Revision of the Test Guidelines for Pea (document TG/7/10)”, presented by Mr. François Boulineau (France), in conjunction with documents TWV/45/6 “Variety Description Databases” and TWV/45/13 “Concept of a Database containing Pea Variety Descriptions”. It agreed that Mr. Boulineau should seek variety descriptions from members of the Union for the 2,400 (approximate) varieties of common knowledge that he had identified, to examine if a selection of characteristics were sufficiently reliable for use as grouping characteristics.

137. The TWV discussed 13 Test Guidelines: Cassava, Echinacea, Endive, French bean, Tomato rootstocks, Parsnip, Pea, Pleurotus, Seed Poppy, Raphanus sativus, Shitake, Tomato, Watermelon.

138. It was agreed that Echinacea, French Bean (Partial revision), Tomato (Partial revision), Seed Poppy (Revision), Parsnip (Revision), Raphanus sativus (Revision), Shiitake should be submitted to the TC for adoption.

139. The TWV agreed to discuss the following draft Test Guidelines at its forty-sixth session:

- Cassava
- Coriander
- Chives (Revision)
- *Lagenaria ciceraria* Standley
- Lettuce (Partial revision: *Fusarium* resistance, big vein virus)
- Leaf Chicory (Revision)
- Pea (Partial revision: grouping characteristics)
- *Pleurotus*
- Spinach (Partial revision: mildew resistance and possible new characteristics)
- Watermelon (revision)

140. The TWV discussed and agreed the program for its forty-sixth session, which it agreed to be held at the invitation of the Netherlands near the city of Venlo from June 11 to 15, 2012 with the preparatory workshop on the Sunday, June 10, 2012.

141. The TWV 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
4. Reports from members and observers
5. Reports on developments within UPOV
6. Molecular Techniques
7. TGP documents
8. Variety denominations
9. Information and databases
   (a) UPOV information databases
   (b) Variety description databases
   (c) Exchangeable software
   (d) Electronic application systems
10. Uniformity assessment
11. Levels of Uniformity According to the State of Expression of Obligatory Disease Resistance Characteristics and Varieties not bred for having such Disease Resistance
12. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee (if appropriate)
13. Discussion on draft Test Guidelines (Subgroups)
14. Recommendations on draft Test Guidelines
15. Guidance for drafters of Test Guidelines
16. Date and place of the next session
17. Future program
18. Report on the session (if time permits)
19. Closing of the session

142. On the afternoon of July 27, the TWV visited an iceberg lettuce field site in Spreckels. It also received a presentation on genetic diversity and breeding program of lettuce in the United States of America, United States Department of Agriculture (USDA) and visited the TAKII Seed facilities in Salinas.

143. Mrs. Radmila Safarikova was awarded a UPOV bronze medal in recognition of her chairmanship of the TWV from 2009 to 2011.

Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)

144. The thirteenth session of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT) was held in Brasilia, Brazil, from November 22 to 24, 2011, with a preparatory workshop on November 21, 2011. The meeting was chaired by Mr. Andrew Mitchell

(United Kingdom) and attended by 48 participants, from 14 members of the Union and 4 observer organizations. The report of the meeting is reproduced in document BMT/13/36.

145. The meeting was welcomed by Mr. Hélicio Campos Botelho, Director of the Department of Intellectual Property Rights, Ministry of Agriculture, Livestock and Food Supply.

146. A presentation of the plant variety protection system of Brazil was received by Mrs. Daniela de Moraes Aviani, Coordinator of the National Plant Variety Protection Service, Ministry of Agriculture, Livestock and Food Supply.

147. The main items discussed were:

- Developments in UPOV concerning biochemical and molecular techniques;
- Use of molecular techniques in examining essential derivation;
- Use of molecular techniques in variety identification;
- Work of the *Ad hoc* Crop Subgroups on molecular techniques;
- New developments in biochemical and molecular techniques;
- Work on molecular techniques on a crop-by-crop basis;
- International guidelines on molecular methodologies;
- Variety Description Databases;
- Methods for analysis of molecular data;
- Recommendations on the establishment of new crop specific subgroups.

148. The Office of the Union reported on developments in UPOV, based on document BMT/13/2 “Reports on developments in UPOV concerning biochemical and molecular techniques”. The BMT also considered how document TGP/15 “New Types of Characteristics” should be developed and agreed that it should be developed separately and in parallel to the document UPOV/INF/18/1 “Possible Use of Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)”. It was agreed that document TGP/15 should provide guidance for the use of those models which had received a positive assessment and for which accepted examples could be provided.

149. The BMT received three papers on essential derivation, the first on use of SNPs to have High-density Fingerprinting and Line-Specific-Recombination Haplotypes as tools to detect suspected derivation from inbred lines. The second presentation was from a representative of the International Seed Federation (ISF) on a case of EDV court dispute where SSRs markers were used. The third presentation considered the use of SSRs markers to determine EDV arising from backcrossing.

150. The BMT received 13 papers on the use of molecular markers for variety identification. This covered a wide range of species, including rose, rice, soybean, wheat, gypsophila, sugarcane and maize, and also a method for molecular data analysis in variety characterization.

151. The BMT noted the report on planned meetings of the Crop Subgroups as set out in document BMT/13/2, “Reports on Developments in UPOV Concerning Biochemical and Molecular Techniques”, paragraph 18.

152. The BMT noted the information on new developments in biochemical and molecular techniques from members and observers provided in document BMT/13/30.

153. The BMT received three presentations for vegetatively propagated crops, including a general presentation and presentations on potato and peach. For self-pollinated crops, four presentations were given for barley, lettuce, soybean and a general paper. Presentations on cross-pollinated crops were received to oilseed rape and *Brachiaria*.

154. The BMT took note of the report from the Office of the Union that contact had been made between UPOV and ISTA to explore the possibility of a coordinated meeting of the BMT and the Working Group on DNA Methods of the Variety Committee of ISTA in conjunction with the fourteenth session of the BMT in 2013.

155. The BMT discussed the possibility for the BMT to have a joint meeting on the use molecular markers with ISTA, and possibly also with the International Organization for Standardization (ISO) and the Organization for Economic Co-operation and Development (OECD).

156. The BMT received presentations on GEMMA: a technical website to share DUS data and on molecular database for soybean variety identification.

157. The BMT received a presentation on BioNumerica: a universal platform for databasing and analysis of biological data.

158. The BMT proposed that the Technical Committee (TC) consider discontinuing the meetings of the *Ad hoc* crop subgroups and having discussion on the individual species within the BMT sessions.

159. The BMT planned to discuss the following items during its fourteenth session:

1. Opening of the session
2. Adoption of the agenda
3. Reports on developments in UPOV concerning biochemical and molecular techniques
4. Reports on the work of the *Ad Hoc* Crop Subgroups on molecular techniques (Crop Subgroups)
5. Short presentations on new developments in biochemical and molecular techniques by DUS experts, biochemical and molecular specialists, plant breeders and relevant international organizations
6. Report of work on molecular techniques on a crop-by-crop basis:
   (a) vegetatively propagated crops
   (b) self-pollinated crops
   (c) cross-pollinated crops
7. International guidelines on molecular methodologies
8. Variety description databases
9. Methods for analysis of molecular data
10. The use of molecular techniques in examining essential derivation
11. The use of molecular techniques in variety identification
12. Recommendations on the establishment of new crop specific subgroups
13. Date and place of next session
14. Future program
15. Report of the session (if time permits)
16. Closing of the session

160. Mr. Andrew Mitchell was awarded a UPOV bronze medal in recognition of his chairmanship of the BMT from 2009 to 2011.

*161. The TC noted that the Republic of Korea proposed to change the venue for the forty-fifth session of the TWO from Seoul to Jeju.

Matters arising from the Technical Working Parties

*162. The TC considered document TC/48/3.

I. Matters for Information and for a Possible Decision to be taken by the Technical Committee

Guidance for drafters of Test Guidelines

*163. The TC agreed to the proposal to revise the “Practical Guidance for Drafters (Leading Experts) of UPOV Test Guidelines”, Section “Test Guidelines for Discussion at the Technical Working Party”, as set out in the Annex to document TC/48/3. It noted that the revision specified that draft Test Guidelines should not show revisions to previous versions and should not include comments, other than in an annex or separate document, and that the Leading Expert should present a clear draft on the basis of the comments received by interested experts on the interim draft.

Short reports from Members and Observers at the Technical Working Party sessions

*164. The TC agreed that, for future sessions of the TWPs, it would be beneficial for the presentation from the Office of the Union on the latest developments within UPOV to be provided in advance of the sessions, thereby allowing the Office of the Union to focus on certain key elements during the presentation.

Data loggers

*165. The TC agreed that a new circular concerning hand-held data capture devices should be sent by the Office of the Union, inviting further entries in advance of the thirtieth session of the TWC, as set out paragraph 10 of document TC/48/3.

II. Matters for Information

*166. The TC noted the matters for information provided in document TC/48/3.

TGP documents

*167. The TC considered the following documents in conjunction with document TC/48/5:

(a) New TGP document

TGP/15 [Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)]

*168. The TC considered document TGP/15/1 Draft 2.

*169. The TC agreed with the recommendation of the TC-EDC, as set out in paragraphs 7 to 9 of document TC/48/5, that document TGP/15/1 Draft 1 should be redrafted (restructured) to provide the following:

- firstly, to present the principles, including the assumptions which provided the basis for the positive assessment of the examples in the approved models; and
- secondly, to provide practical experience in the form of examples in the implementation of the principles.

*170. With regard to TGP/15/1 Draft 2, Annex I, paragraph 3(a), the representative of the International Seed Federation (ISF) questioned whether it was necessary for markers to be examined more than once on the same sample. He also suggested that paragraph 3(b) be amended to clarify that, if there was a difference between the information provided in the Technical Questionnaire and the result of the bioassay, the result of the bioassay would prevail.

*171. The TC agreed that, on the basis of the comments above, a new draft should be prepared by the Office of the Union in conjunction with the Chairman of the TC and the Chairman of the BMT, which would be presented to the Enlarged Editorial Committee (TC-EDC) at its meeting in January 2013 and a further draft presented to the TC at its forty-ninth session. The TC noted that the timetable for the development of document TGP/15 would be reported to the TWPs at their sessions in 2012.

(b) Revision of TGP documents

TGP/7: Development of Test Guidelines

*172. The TC considered the revision of document TGP/7 “Development of Test Guidelines” on the basis of document TC/48/18.

I. REVISIONS ON WHICH THE TECHNICAL COMMITTEE HAS REACHED A CONCLUSION

*173. The TC recalled that, at its forty-seventh session, held in Geneva from April 4 to 6, 2011, it had agreed to include the following matters in a future revision of TGP/7 “Development of Test Guidelines”:

(a) Coverage of Types of Varieties in Test Guidelines

The addition of new Additional Standard Wording (ASW) for Chapter 1 of the Test Guidelines, as follows:

> "In the case of [ornamental] [fruit] [industrial] [vegetable] [agricultural] [etc.] varieties, in particular, it may be necessary to use additional characteristics or additional states of expression to those included in the Table of Characteristics in order to examine Distinctness, Uniformity and Stability."

with an explanation in document TGP/7 that such wording should not lead to any particular conclusions as to whether other types of varieties should or should not be covered by the development of separate Test Guidelines, since that would need to be considered on a case-by-case basis (see document TC/47/26 "Report on the Conclusions", paragraph 54);

(b) Selection of Asterisked Characteristics

The final sentence of document TGP/7/2, GN 13.1 "Asterisked characteristics", Section 1.2, should be amended to read "The number of asterisked characteristics should, therefore, be determined by the characteristics which are required to achieve useful internationally harmonized variety descriptions". On the basis of that change, the TC agreed that the guidance provided in document TGP/7, GN 13, on the selection of asterisked characteristics was appropriate and sufficient and that it would only be necessary to ensure that the guidance was followed in the development of Test Guidelines (see document TC/47/26 "Report on the Conclusions", paragraph 59); and

(c) Quantity of Plant Material Required

The guidance in document TGP/7, GN 7 "Quantity of plant material required" should be extended to encourage Leading Experts to consider the quantity of plant material required in relation to the following factors (see document TC/47/26 "Report on the Conclusions", paragraph 55):

(i) Number of plants/ parts of plants to be examined
(ii) Number of growing cycles
(iii) Variability within the crop
(iv) Additional tests (e.g. resistance tests, bolting trials)
(v) Features of propagation (e.g. cross-pollination, self-pollination, vegetative propagation)
(vi) Crop type (e.g. root crop, leaf crop, fruit crop, cut flower, cereal, etc.)
(vii) Storage in variety collection
(viii) Exchange between testing authorities
(ix) Seed quality (germination) requirements
(x) Cultivation system (outdoor/glasshouse)
(xi) Sowing system
(xii) Predominant method of observation (e.g. MS, VG)

The TC agreed that Additional Standard Wording (ASW) should be developed in order to provide guidance in the Test Guidelines on whether the quantity of plant material required in Chapter 2 of the Test Guidelines relates to both growing cycles in the case of Test Guidelines indicating two growing cycles (see document TC/47/26 "Report on the Conclusions", paragraph 56).

The TC further agreed that the guidance in document TGP/7, GN 7 should be extended to encourage Leading Experts to consider the quantity of plant material required for similar crops in order to seek consistency as far as that was appropriate. In that regard, it agreed that a summary of the following information should be prepared by the Office of the Union for all adopted Test Guidelines and made available to Leading Experts on the TG Drafters' webpage in order that information on Test Guidelines for similar crops could be presented to the Subgroup of Interested Experts by the Leading Expert (see document TC/47/26 "Report on the Conclusions", paragraph 57):

(a) Chapter 2.3 Minimum quantity of plant material to be supplied by the applicant
(b) Chapter 3.1 Number of growing cycles
(c) Chapter 3.4.1 Each test should be designed to result in a total of at least X plants
(d) Chapter 4.1.4 Number of plants / parts of plants to be examined for distinctness
(e) Chapter 4.2 Number of plants to be examined for uniformity
(f) Number of plants for special tests (e.g. disease resistance)

*174. The TC recalled that, at its forty-seventh session, it had agreed to delay consideration of the approach for providing standard references for the UPOV Technical Questionnaire and for the characteristics in the

Test Guidelines with a view to a future revision of document TGP/7, pending the outcome of work on the Linear Blank Form for PBR Applications (see document TC/47/26 “Report on the Conclusions”, paragraph 68).

*175. The TC further recalled that, at its forty-seventh session, it had agreed that, for the time being, no revisions should be considered for document TGP/7 in relation to applications for varieties with low germination (see document TC/47/26 “Report on the Conclusions”, paragraph 58). It further recalled that it had agreed that it would not be appropriate to revise document TGP/7 in order to include an indication of grouping characteristics in the Table of Characteristics in the UPOV Test Guidelines (see document TC/47/26 “Report on the Conclusions”, paragraph 60).

II. REVISIONS TO BE CONSIDERED BY THE TECHNICAL COMMITTEE

Guidance on Number of Plants to be Examined (for Distinctness)

*176. The TC agreed with the proposal made by the TWA (see document TC/48/18, Annex I, paragraph 2) to prepare guidance on:

(a) the number of plants in the trial;

(b) the number of plants/parts of plants to be examined for the assessment of distinctness;

(c) the number of plants/parts of plants for the assessment of uniformity.

*177. In that regard, the TC agreed that guidance for points (a) and (c) would be considered in relation to paragraph 37 “(c) Quantity of Plant Material Required”, above. With regard to the number of plants/parts of plants to be examined for the assessment of distinctness, the TC agreed that the information provided in presentation by Mrs. Beate Rücker (Germany) on the number of plants to be examined, under agenda item “Discussion on experiences of members of the Union on measures to improve the efficiency and effectiveness of DUS testing”, would provide a good basis for such guidance (see paragraph 20).

*178. The TC agreed that Mrs. Beate Rücker (Germany), in conjunction with the Office of the Union, should be invited to prepare draft guidance for consideration by the TWPs in 2012, on the above basis.

Guidance for Method of Observation

*179. The TC agreed that document TGP/7/2, GN 25 “Recommendations for conducting the examination” should be extended to provide guidance, by means of illustrative examples, on the appropriate type of observation for characteristics such as dates (e.g. time of flowering) and counts (e.g. number of leaf lobes), on the basis of the examples as provided in Annex II to document TC/48/18 and the comments made on those examples by the TWPs in 2010 (see document TC/47/26 “Report on the Conclusions”, paragraph 61).

*180. The TC agreed that the Office of the Union should draft guidance on that basis, for consideration by the TWPs at their sessions in 2012.

Example Varieties

*181. The TC agreed that the experts from France should be requested to make a presentation to the TWPs at their sessions in 2012 on the basis of the presentation made under agenda item “Discussion on experiences of members of the Union on measures to improve the efficiency and effectiveness of DUS testing” and reflecting the comments and suggestions made during the discussion.

Providing Photographs with the Technical Questionnaire

*182. The TC recalled that, at its forty-seventh session, it had agreed that further consideration should be given to the nature of the guidance of the document in order to avoid setting requirements that were not realistic for breeders. It was also agreed that the relationship between the characteristics in the Technical

Questionnaire and the photographs should be clarified (see document TC/47/26 “Report on the Conclusions”, paragraphs 69 and 70).

*183. The TC agreed that a new draft of the guidance in document TC/48/18, Annex IV, reflecting the comments of the TWPs and the TC-EDC, should be prepared by the experts from the European Union, for consideration by the TWPs at their session in 2012.

Procedure for the Development of Test Guidelines

*184. The TC agreed that paragraphs 2.2.3.2 of document TGP/7 “Development of Test Guidelines” should read as follows:

> “2.2.3.2 In cases where more than one TWP has proposed the development of Test Guidelines with the same coverage, the Technical Committee will decide which TWP should be responsible for the drafting of the Test Guidelines and which other TWPs should cooperate. This will be decided on the basis of the level of experience in the TWPs concerned. In such cases, the Technical Committee will request the approval of other cooperating TWPs before a draft is submitted for adoption.”

TGP/8: Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability

*185. The TC considered the revision of document TGP/8 “Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability” on the basis of document TC/48/19 Rev. The TC noted that new drafts of relevant sections would need to be prepared by April 26, 2012, in order that the sections could be included in the draft to be considered by the TWPs at their sessions in 2012.

ANNEX I TGP/8 PART I: DUS TRIAL DESIGN AND DATA ANALYSIS
New Section 2 - Data to be recorded (Drafter: Mr. Uwe Meyer (Germany))

*186. The TC agreed that New Section 2- “Data to be recorded”, with certain improvements to the structure and the removal of duplications, could be considered by the TWPs in 2012 and by the TC at its forty-ninth session, for adoption as a revision of document TGP/8/1. It agreed that the next draft should be prepared by Mr. Uwe Meyer (Germany), in conjunction with the Office of the Union.

ANNEX II TGP/8 PART I: DUS TRIAL DESIGN AND DATA ANALYSIS
New Section 3 - Control of variation due to different observers (Drafter: Mr. Gerie van der Heijden (Netherlands))

*187. The TC agreed to request the drafter to prepare a new draft of the Section on the basis of the comments made by the TWPs in 2011, as set out in document TC/48/19 Rev., Annex II.

ANNEX III TGP/8 PART I: DUS TRIAL DESIGN AND DATA ANALYSIS
New Section 6 – Data processing for the assessment of distinctness and for producing variety descriptions (Drafters: experts from France, Germany, Japan, Kenya and the United Kingdom)

*188. The TC considered Annex III in conjunction with Annex VIII of document TC/48/19 Rev. It agreed that the information provided in Annex VIII and at the UPOV DUS Seminar, held in Geneva, in March 2010, together with the method provided by Japan and the method used in France for producing variety descriptions for herbage crops, as presented at the TWC, provided a very important first step in developing common guidance on data processing for the assessment of distinctness and for producing variety descriptions, but concluded that the information as presented in Annex VIII would not be appropriate for inclusion in document TGP/8. It agreed that the Office of the Union should summarize the different approaches set out in Annex VIII with regard to aspects in common and aspects where there was divergence. As a next step, on the basis of that summary, consideration could be given to developing general guidance. The TC agreed that the section should include examples to cover the range of variation of characteristics. It further agreed that the detailed information on the methods, as presented in Annex VIII, should be made available via the UPOV website, with references in document TGP/8.

ANNEX IV TGP/8 PART I: DUS TRIAL DESIGN AND DATA ANALYSIS
New Section – Information of good agronomic practices for DUS field trials (Drafters: Mrs. Anne Weitz (European Union) and Argentina and France to contribute))

*189. The TC noted the importance of employing good agronomic practice in the conduct of DUS trials and on the need to ensure that staff had the appropriate training and experience for conducting DUS trials. However, it agreed that it would not be desirable to seek to develop detailed guidance in document TGP/8.

ANNEX V TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION
New Section after Section COYU Statistical Methods for Very Small Sample Sizes (Drafter: Mr. Gerie van der Heijden (Netherlands))

*190. The TC agreed that realistic examples should be included in the document, based on actual cases. If no such cases could be provided, the section should be deleted. The TC noted that the United Kingdom TWO experts would need to provide an example by April 26, 2012, in order that the section could be included in the draft to be considered by the TWPs at their sessions in 2012.

ANNEX VI TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION
New Section 11 Examining DUS in bulk samples (Drafter: Mr. Kristian Kristensen (Denmark))

*191. The TC agreed that the section should be redrafted with assistance from DUS experts in Denmark in order to focus on guidance for DUS examiners and should replace detailed statistical models with a general reference to suitable statistical methods. It was also agreed that the example of sugar beet should be replaced by a crop for which there were UPOV Test Guidelines.

ANNEX VII TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION
New Section 12 - Examining characteristics using image analysis (Drafter: Mr. Gerie van der Heijden (Netherlands))

*192. The TC agreed to the development of a questionnaire by Mr. Gerie van der Heijden (Netherlands), the TWC Chairman and the Office of the Union, concerning software and hardware used for image analysis, which would be issued to the TC and TWC representatives of UPOV members. The results of the questionnaire would be presented to the TWC at its thirtieth session, to be held in Chisinau, Republic of Moldova, from June 26 to 29, 2012. The TC also noted that presentations on image analysis would be invited for the thirtieth session of TWC session.

*193. The TC agreed that Section 12.1 should be reworded to explain that image analysis would be an alternative method for observing a characteristic, rather than a principal method for observing a characteristic.

*194. The TC agreed that the TWC should develop subsection 12.3 “Guidance on the use of image analysis” and agreed that a new section should be prepared on the basis of the discussion on documents TWC/29/19, TWC/29/21, TWC/29/27 and TWC/29/29. The drafters would be the experts from Netherlands (first drafter), Czech Republic, Finland and the United Kingdom.

ANNEX VIII TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION
New Section 13 - Methods for data processing for the assessment of distinctness and for producing variety descriptions (Drafters: experts from France, Germany, Japan, Kenya and the United Kingdom)

*195. See comments on Annex III.

ANNEX IX TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION
New Section - Guidance of data analysis for blind randomized trials (Drafters: France and Israel to provide examples)

*196. The TC agreed that the experts from France should develop guidance on data analysis for blind randomized trials from their experience, including their use of blind randomized trials for disease resistance and other examples.

ANNEX X TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION
New Section - Statistical methods for visually observed characteristics (Drafter: Kristian Kristensen (Denmark))

*197. The TC agreed that the section should be redrafted with assistance from DUS experts in Denmark in order to focus on guidance for DUS examiners and should replace detailed statistical models with a general reference to suitable statistical methods. The TC agreed that the examples based on sugar beet should be replaced by a crop for which there are Test Guidelines and that the example for wheat should be replaced by a realistic example, such as could be found in Hemp or Spinach. The TC also agreed that the TWC should explore the consequences of the decisions for DUS examination, because the method is a test for differences in the distribution (both location and dispersion). It also agreed that the consequences of excluding certain varieties from the test, where there were insufficient numbers in some cells, should be further investigated.

ANNEX XI TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION
New Section - Guidance for the development of variety descriptions (Drafter to be agreed)

*198. The TC recalled that, at its forty-sixth session, it had requested that consideration be given to guidance on the development of variety descriptions with information from:

(i) more than one growing cycle in one location, and
(ii) more than one location

The TC agreed that the experts from the Netherlands should be invited to draft guidance on the development of variety descriptions with information from more than one growing cycle in one location and more than one location.

ANNEX XII TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION
Section 4 – 2x1 % Method - Minimum number of degrees of freedom for the 2x1% Method (Drafter: Sally Watson (United Kingdom))

*199. The TC noted that at least 10 degrees of freedom were required for the residual mean square used to estimate the standard error in the t-test in each year. It agreed that further clarification was needed with regard to the significance of the wording “preferably at least 20 degrees of freedom”.

ANNEX XIII TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION
Section 9 - The Combined-Over-Years Uniformity Criterion (COYU) - Minimum number of degrees of freedom for COYU (Drafter: Sally Watson (United Kingdom))

*200. The TC agreed that the reference to COYD and COYU should be checked throughout the section. The TC also requested data to be provided in support of the proposal to reduce the minimum degrees of freedom for the varieties-by-years mean square in the COYD analysis of variance from 20 to 10. It also agreed that the following wording in Section 3.1 “Summary of requirements for application of method” should be amended because it meant that Long-Term COYD could be used with less than 10 degrees of freedom:

“- there should be at least 10, and preferably at least 20, degrees of freedom for the varieties-by-years mean square in the COYD analysis of variance, or if there are not, then Long-Term COYD can be used (see 3.6.2 below);”

ANNEX XIV TGP/8 PART II: TECHNIQUES USED IN DUS EXAMINATION
Section 10 – Minimum number of comparable varieties for the Relative Variance Method (Drafter: Nik Hulse (Australia))

*201. The TC noted the comments of the TWC with regard to certain of the assumptions of the method and noted that further investigations would be done by Australia with respect to these assumptions and the F value used in the calculations.

ANNEX XV WORKPLAN FOR THE DEVELOPMENT OF TGP/8

*202. The TC agreed with the workplan for the development of TGP/8 presented in Annex XV to document TC/48/19 Rev., subject to the following amendments:

(a) Annex VIII to be combined with Annex III;
(b) Annex IV to be deleted; and
(c) Annex V to be deleted if no examples provided in 2012

TGP/12: Guidance on Certain Physiological Characteristics

*203. The TC considered document TGP/12/2 Draft 2 "Guidance on Certain Physiological Characteristics" and document TC/48/5, Annex I "Guidance on Certain Physiological Characteristics".

*204. The TC agreed to amend document TGP/12/2 Draft 2 to read as follows:

"2.3.2 Quantitative characteristics

"Disease resistances for which there is a continuous range of levels of susceptibility / resistance across varieties, are quantitative characteristics. Guidance for the development of appropriate states of expressions for quantitative characteristics is provided in document TGP/9, Guidance Note GN 20, section 3.

"Example with 1 – 3 scale: Resistance to Sphaerotheca fuliginea (Podosphaera xanthii) (Powdery mildew) in Melon (UPOV Test Guidelines: TG/104/5)

"[Table]

"Example with 1 – 9 scale: Resistance to Colletotrichum trifolii in Lucerne (UPOV Test Guidelines: TG/6/5)

"[Table]"

*205. The TC agreed, subject to agreement by the CAJ at its sixty-fifth session, to be held in Geneva on March 29, 2012, to submit document TGP/12/2 Draft 2 "Guidance on Certain Physiological Characteristics" as the basis for adoption of TGP/12 by the Council, at its forty-sixth session, to be held on November 1, 2012. The TC noted that the editing of the original English text and the French, German and Spanish translations would be checked by the relevant members of the Editorial Committee prior to submission of the draft of document TGP/12/2 to the Council.

TGP/14: Glossary of Terms Used in UPOV Documents

*206. The TC considered the revision of document TGP/14 "Glossary of Terms Used in UPOV Documents" on the basis of documents TC/48/20 and TC/48/21.

I REVISIONS ON WHICH THE TECHNICAL COMMITTEE HAS REACHED A CONCLUSION

Perspective from which to observe plant shapes

*207. The TC recalled that it had agreed to recommend that, where appropriate, an explanation for shape characteristics should provide guidance on the perspective from which to observe the shape.

Definition for Botanical Terms

*208. With regard to a future revision of TGP/14 "Glossary of Terms Used in UPOV Documents", Section 2: Botanical Terms: Subsection 2: Shapes and Structures: I. Shape: II. Structure: Section 2.4, the TC recalled that it had agreed that additional definitions for botanical terms, such as for peduncle and petiole, should be added to document TGP/14 where the provision of such definitions would help to avoid confusion. However, it had confirmed that this should not result in a change to the explanation in document TGP/14/1 that "In general, the meaning of botanical terms which are used in the Test Guidelines to indicate the relevant part of the plant to be examined, but which are not themselves used as states of expression (e.g. bract, petal, berry, etc.), do not require a UPOV specific definition and are not included in this document."

*209. The TC recalled that it had agreed the following definition of “spike” for inclusion in a future revision of document TGP/14/1: Section 2: Botanical Terms: Subsection 2: Shapes and Structures: III. Definitions for Shape and Structure Terms (see document TC/47/26 “Report on the Conclusions”, paragraphs 81 to 83):

Spike	an indeterminate inflorescence with sessile flowers on an unbranched axis.

II. REVISIONS TO BE CONSIDERED BY THE TECHNICAL COMMITTEE

Components of Shape: states of expression for ratios

*210. With regard to the use of characteristics for ratios, the TC agreed that it should be possible to use states such as “high” or “low”, provided that explanations and illustrations were provided to avoid any risk of confusion. It also agreed that it should be possible to use states such as “elongated” and “compressed” for characteristics that were worded as shapes, rather than ratios.

Avoidance of duplication of characteristics

*211. The TC welcomed the study concerning “Examination of the use component and composite characters for determining distinctness”, prepared by experts from Denmark, Germany and the United Kingdom, as presented in the Annex to document TC/48/20. The TC agreed that guidance, based on that study, should be prepared for the TWPs sessions in 2012, by the experts from Germany, Denmark and the United Kingdom.

TGP/14 Section 2: Botanical Terms: New Subsection 3: Color

*212. The TC considered the draft of Section 2: Botanical Terms, Subsection 3: Color, as set out in the Annex to document TC/48/21.

*213. The TC agreed that a new draft, based on the document TC/48/21 and the comments of the TWPs, should be prepared by the experts from Germany and the Netherlands, for consideration by the TWPs at their sessions in 2012. It agreed that a website reference for the Royal Horticultural Society should be included in Part VI: Literature.

PROGRAM FOR THE DEVELOPMENT OF TGP DOCUMENTS

*214. The TC approved the program for the development of TGP documents, as set out in Annex II to document TC/48/5, subject to:

(i) adoption of document TGP/0/5 in 2012 and document TGP/0/6 in 2013;
(ii) corrections to the numbering of sessions in 2013; and
(iii) deletion of ”(Color Subsection & revisions)” from TWPs in 2013 and addition to CAJ/67 in 2013.

Molecular techniques

*215. The TC considered document TC/48/7.

Document BMT/DUS “Possible Use of Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)”

*216. The TC noted the adoption of document UPOV/INF/18/1 “Possible Use of Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)”.

Development of document TGP/15

*217. The TC noted that document TGP/15/1 Draft 2 was considered under agenda item 6 "TGP documents".

International Guidelines on Molecular Methodologies

*218. The TC noted the development of international guidelines on molecular methodologies, as set out in paragraphs 18 to 22 of document TC/48/7. The TC noted the importance of avoiding duplication and promoting harmonization between such international guidelines.

Ad hoc *Crop Subgroups on Molecular Techniques (Crop Subgroups)*

*219. The TC agreed to discontinue separate meetings of the *Ad-hoc* Crop Subgroups and to include the discussions within the BMT sessions, as set out in paragraph 26 of document TC/48/7.

Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)

*220. The TC noted the report on developments in the BMT, as set out in paragraphs 28 to 30 of document TC/48/7.

*221. The TC agreed that it would be appropriate for the Office of the Union to investigate the possibility of a coordinated meeting of the BMT and the Working Group on DNA Methods of the Variety Committee of ISTA, for the fourteenth session of the BMT.

*222. The TC approved the program for the fourteenth session of the BMT to be held in 2013, including the dedication of a particular date ("Breeders' Day"), for the items on the use of molecular techniques in the consideration essential derivation and in variety identification, as set out in paragraphs 32 and 33 of document TC/48/7.

*223. The TC noted that a presentation on matters considered by the BMT at its thirteenth session, with particular regard to the use of molecular techniques in the consideration of essential derivation and in variety identification, would be made at the sixty-fifth session of the CAJ.

Variety denominations

*224. The TC considered document TC/48/8.

*225. The TC agreed to propose the creation of a new denomination class in document UPOV/INF/12 "Explanatory notes on variety denominations under the UPOV Convention", Annex I: Part II. "Classes encompassing more than one genus", as follows:

	Botanical names	UPOV codes
Class 213	Eupatorium L.	EUPAT
	Acanthostyles R. M. King & H. Rob.	-
	Ageratina Spach	AGERT
	Asplundianthus R. M. King & H. Rob.	-
	Bartlettina R. M. King & H. Rob.	-
	Campuloclinium DC.	-
	Chromolaena DC.	-
	Conoclinium DC.	-
	Cronquistianthus R. M. King & H. Rob.	-
	Eutrochium Raf.	EUTRO
	Fleischmannia Sch. Bip.	-
	Praxelis Cass.	-
	Viereckia R. M. King & H. Rob.	-

*226. The TC noted the report by the Delegation of Japan that the International Commission for the Nomenclature of Cultivated Plants of the International Union for Biological Sciences (IUBS) (ICNCP) was in the process of revising the Code of Nomenclature for Cultivated Plants and would make proposals to the IUBS Commission for the Nomenclature of Cultivated Plants in 2013. It agreed that the Office of the Union

should contact ICNCP in order to explain the guidance provided by UPOV in document UPOV/INF/12 "Explanatory notes on variety denominations under the UPOV Convention".

Information and databases

(a) UPOV information databases

*227. The TC considered document TC/48/6.

GENIE DATABASE

*228. The TC noted the plans of the Office of the Union to introduce a user guide for the GENIE database in 2012, following the revisions to UPOV code system, as set out below.

UPOV CODE SYSTEM

UPOV code developments

*229. The TC noted the creation of 173 new UPOV codes and the amendment to 12 UPOV codes, which brought the total number of UPOV codes in the GENIE database at the end of 2011 to 6,851.

*230. In accordance with the procedure set out in Section 3.3 of the Guide to the UPOV Code System, the TC noted that the Office of the Union would prepare tables of UPOV code additions and amendments, for checking by the relevant authorities, for each of the Technical Working Party (TWP) sessions in 2012.

Proposals to amend the Guide to the UPOV Code System

*231. The TC agreed to amend the Guide to the UPOV Code System as follows:

(i) UPOV codes for hybrids: Section 2.2.6

*232. The approach for introducing UPOV codes for hybrid genera and species will be amended such that a single UPOV code will cover all hybrid combinations of the same genera/species, as follows:

"2.2.6 In the case of UPOV codes for hybrid genera and species, the UPOV code will not distinguish between two hybrids produced using the same parents. A UPOV code is created for the first hybrid notified to UPOV in accordance with the procedure set out in paragraphs 2.2.3 to 2.2.5. However, if a subsequent request is received for a hybrid involving the same genera/species in a different combination, the Principal Botanical Name will be amended to indicate that the UPOV code covers all combinations involving the same genera/species.

Example:

UPOV code request received for: *Alpha one* x *Alpha two*

UPOV Code	Principal Botanical Name
ALPHA_OTW	*Alpha one* x *Alpha two*

Subsequently, UPOV code request received for: *Alpha two* x *Alpha one*
or
(Alpha one x *Alpha two)* x *Alpha one*
etc.

UPOV Code	Principal Botanical Name
ALPHA_OTW	Hybrids between *Alpha one* and *Alpha two*

(ii) UPOV codes for hybrids: Section 2.2.7

*233. Section 2.2.7 to be deleted.

(iii) UPOV codes for hybrids: Binomial names

*234. To amend the UPOV Code System with regard to hybrids to refer to "binomials", as follows:

"2.2.2 In the case of a genus which is formed as a hybrid between other genera and for which there is a binomial name ~~which is taxonomically recognized in its own right~~ (e.g. ×*Triticosecale* [= *Triticum* x *Secale*]), the 'genus element' of the UPOV code is based on the binomial name ~~taxonomically recognized 'hybrid' genus~~. For example, ×*Triticosecale* has the UPOV code 'TRITL'.

"2.2.3 In the case of a genus which is formed as a hybrid between two genera ('hybrid genus') (e.g. *Alpha* x *Beta*) and for which there is no binomial name ~~which is not taxonomically recognized as a genus in its own right ('hybrid genus')~~, a UPOV code is created for the new 'hybrid genus'. The genus element of the UPOV code is produced by combining the first two letters of the female parent genus and the first three letters of the male parent genus. For example, a 'hybrid genus' which was formed as a hybrid between *Alpha* (UPOV code: ALPHA) and *Beta* (UPOV code: BETAA) would have the UPOV code 'ALBET' ~~Carlus (UPOV code: CARLU) x Phillipus (UPOV code: PHILL) would have the UPOV code 'CAPHI'~~.

"2.2.4 In the case of a species which is formed as a hybrid between two species and for which there is no binomial name ~~which is not taxonomically recognized as a species in its own right~~ ('hybrid species') (e.g. *Alpha one* x *Alpha two*), a UPOV code is created for the new 'hybrid species'. The species element of the UPOV code is produced by combining the first letter of the female parent species and the first two letters of the male parent species. For example, a 'hybrid species' which was formed as a hybrid between *Alpha one* (UPOV code: ALPHA_ONE) x *Alpha two* (UPOV code: ALPHA_TWO) would have the UPOV code 'ALPHA_OTW'.

"2.2.5 In the case of a hybrid genus (or species) which is formed as a hybrid between more than two genera (or species) and for which there is no binomial name ~~which is not taxonomically recognized as a genus in its own right~~, the same general approach is followed as for a hybrid between two genera (or species); the sequence of letters used in the UPOV code is based on the order of female parent followed by male parent."

(iv) Variety Types

*235. To delete Section 2.4. In agreeing with that deletion, the TC noted that information on types of variety could be provided in GENIE by means of notes. It was also noted that the deletion did not preclude the introduction of new features in GENIE and PLUTO in the future in order to provide relevant information on variety types.

(v) Publication of UPOV Codes

*236. To amend Section 4, as follows::

"4. Publication of UPOV Codes

"4.1 As explained in Section 3.2, all UPOV codes can be accessed in the GENIE database, which is ~~made~~ available on the ~~freely accessible area of the~~ UPOV website (see http://www.upov.int/genie/en/).

"4.2 In addition, the UPOV codes, together with their relevant botanical and common names~~,~~ and variety denomination class ~~and linked hybrid/parent UPOV codes,~~ as contained in the GENIE database, are published on ~~the first restricted area of~~ the UPOV website (see ~~http://www.upov.int/restrict/en/upov_rom_upov_code_system/index.htm~~ http://www.upov.int/genie/en/updates/). That information is published in a form that facilitates electronic downloading of the UPOV codes ~~for use by contributors to the UPOV ROM~~."

PLANT VARIETY DATABASE

*237. The TC considered the program for improvements to the Plant Variety Database ("Program") on the basis of document TC/48/6.

Title of the Plant Variety Database (Program: Section 1)

*238. The TC noted that the name of the Plant Variety Database had been changed to "PLUTO".

Web-based version of the Plant Variety Database (Program: Section 6)

*239. The TC noted the developments concerning the program for improvements to the Plant Variety Database as reported in document TC/48/6, and further noted that the following features would be introduced to PLUTO in 2012:

(a) information on the latest date of submission by the contributors, in the form of a pdf document, with further plans to link the date of submitted information to particular data;

(b) an explanation of the search rules, which would be developed in conjunction with the introduction of the denomination search facility; and

(c) a facility to save search settings.

*240. The TC agreed to amend the "Program for Improvements to the Plant Variety Database", as set out in Annex II to document TC/48/6, with regard to Section 3.2 "Data quality and completeness" and Section 3.3 "Mandatory items", in order to introduce the possibility for contributors to the Plant Variety Database to provide data in the original alphabet, in addition to the data being provided in Latin alphabet. That amendment was on the basis that:

(a) data in the original alphabet could be provided for the following fields (see Section 3.2 "Data quality and completeness", Table):

(i) Species: common name (see new TAG <520>);
(ii) Denomination (see <550>, <551>, <552>, <553>);
(iii) Breeder's reference (see <650>);
(iv) Synonym of variety denomination (see <651>);
(v) Trade name (see <652>);
(vi) Applicant's name (see <750>);
(vii) Breeder's name (see <751>);
(viii) Maintainer's name (see <752>);
(ix) Title holder's name (see <753>);
(x) Type of other party (see <760>);
(xi) Other relevant information (see <950>); and
(xii) Remarks (see <960>); and

(b) data would not be included in the Plant Variety Database unless all data provided in the original alphabet was also provided in Latin alphabet (see Sections 3.2 and 3.3 "Required data").

Provision of assistance to contributors (Program: Section 2)

*241. The TC noted the summary of the contributions to the Plant Variety Database in 2011, as set out in document TC/48/6, Annex III.

*242. The TC noted that the WIPO Brand Database Unit had been contacted by the following members of the Union: Albania; Argentina; Azerbaijan; Belarus; Bolivia; China; Colombia; Costa Rica; Croatia; Dominican Republic; Georgia; Iceland; Jordan; Kenya; Kyrgyzstan; Mexico; Morocco; Nicaragua; Oman; Panama; Paraguay; Republic of Korea; Singapore; South Africa; Trinidad and Tobago; Tunisia; Ukraine; Uruguay; Uzbekistan and Viet Nam in order to investigate the arrangements that would be needed in order for them to start to contribute data. It noted that solutions had been developed to allow the contribution of data in non-TAG format by Kenya and South Africa.

*243. With regard to contributors that did not provide UPOV codes for their data supplied, the TC noted that a method for providing missing UPOV codes for data submitted for the Plant Variety Database had been developed by the WIPO Brand Database Unit. That method had been used to suggest UPOV codes for consideration by the contributors, in order that UPOV codes could be entered for all data in the Plant Variety Database. On that basis, the TC noted that UPOV codes had been allocated for virtually all entries in the Plant Variety Database.

*244. The TC noted that a report on developments concerning the provision of assistance to contributors of data to the Plant Variety Database would be made to the to the CAJ at sixty-fifth session.

Data to be included in the Plant Variety Database (Program: Section 3)

245. The TC agreed to the proposal to amend the "Program for Improvements to the Plant Variety Database", as set out in Annex II to document TC/48/6, with regard to Section 3.2 "Data quality and completeness" (see new TAG <800>), in order to introduce the possibility for contributors to the Plant Variety Database to provide information on dates on which a variety was commercialized for the first time in the territory of application and other territories, as set out in document TC/48/6, Annex IV.

*246. The TC noted that the following disclaimer would be added:

> "The absence of information in [item XXX] does not indicate that a variety has not been commercialized. With regard to any information provided, attention is drawn to the source and status of the information as set out in the fields 'Source of information' and 'Status of information'. However, it should also be noted that the information provided might not be complete and accurate."

Frequency of data submission (Program: Section 4)

*247. The TC agreed that there should be no changes to the frequency for publication of that data, i.e. six updates per annum, for the time being. However, it noted that it would be possible to correct any important data errors in PLUTO at the earliest possible opportunity where requested by the data contributor.

*248. The TC noted that the Office of the Union had issued circular E-12/013, on January 23, 2012, to recipients of the UPOV-ROM, informing them of the launch of the freely-accessible PLUTO database on the UPOV website and requesting an indication on whether they wished to continue to receive the UPOV-ROM. In the replies received: 14 recipients from members of the Union had indicated that they wished to continue to receive the UPOV-ROM; and 13 recipients from members of the Union and 7 paying subscribers, had indicated that they did not wish to continue to receive the UPOV-ROM. The TC also noted the plans for WIPO Brand Database Unit to develop its own version of the UPOV-ROM as a part of the program for improvements to the Plant Variety Database.

Common search platform (Program: Section 7)

*249. The TC noted that there had been no substantial developments concerning the development of a common search platform since 2010. It also noted that WIPO, CPVO, the Royal General Bulb Growers' Association (KAVB) (Netherlands) and the Commission for Nomenclature and Cultivar Registration of the International Society for Horticultural Science (ISHS) might be consulted on possible approaches later in 2012.

(b) Variety description databases

*250. The TC considered document TC/48/9.

*251. The TC noted the information provided on variety description databases at the sessions of the TWA,TWC, TWV, TWO, TWF and BMT, held in 2011.

*252. The TC requested the experts from France to continue their work on grouping characteristics and on the development of a database containing Pea variety descriptions of members of the Union, as set out in paragraphs 7 to 10 of document TC/48/9, and to report on their work to the TWPs at their sessions in 2012 and to the TC at its forty-ninth session.

(c) Exchangeable software

*253. The TC considered document TC/48/12.

*254. The TC noted the adoption of document UPOV/INF/16/2 "Exchangeable Software".

*255. The TC noted that the Consultative Committee, at its eighty-second session, held in Geneva on October 19 and on the morning of October 20, 2011, had endorsed the inclusion of the offers by Naktuinbouw, provided in the form of a helpdesk on practical technical questions as well as information on internship, in section "(ii) Offers of assistance for the development of plant variety protection" of the

"Assistance" webpage. It noted that the Consultative Committee had also endorsed the inclusion of the offer for assistance on the development of electronic office management systems made by the Community Plant Variety Office of the European Union (CPVO) in section "(ii) Offers of assistance for the development of plant variety protection" of the "Assistance" webpage.

*256. The TC considered the recommendation of the TWC at its twenty-ninth session concerning the inclusion of "Bionumerics Software for Databasing and Data Analysis" in document UPOV/INF/16, in conjunction with the comments of the TWV, TWF, TWO and BMT. The TC noted different views on whether commercial software should be considered in document UPOV/INF/16 and suggested that it would be appropriate to review the title of document UPOV/INF/16 "Exchangeable Software" and Section "1. Requirements for exchangeable software", before taking a view on the inclusion of the "Bionumerics Software for Databasing and Data Analysis" software. It agreed that the review should be included in the agenda for its forty-ninth session.

(d) Electronic application systems

Standard References to the UPOV Model Application Form

*257. The TC considered document TC/48/13.

*258. The TC noted that the Office of the Union would issue a survey on the extent to which members of the Union use the standard references of the UPOV Model Application Form in their application forms and would present the results of that survey to the CAJ at its sixty-sixth session, to be held in October 2012.

Electronic Version of the UPOV Model Application Form

*259. The TC noted the developments concerning meetings between experts of UPOV, WIPO, CPVO and ISF, in order to develop proposals for consideration by the CAJ.

*260. The TC noted that the CAJ would be invited to consider whether to discuss the potential benefits of a unique variety identifier, as set out in paragraph 24 of document TC/48/13.

Method of calculation of COYU

*261. The TC considered document TC/48/11.

*262. The TC noted the latest developments concerning the method of calculation of COYU, as set out in paragraphs 10 to 13 of document TC/48/11.

*263. The TC agreed to request the TWC to continue its work with the aim of developing recommendations to the TC concerning the proposals to address the bias in the present method of calculation of COYU.

Assessing uniformity by off-types on the basis of more than one sample or sub-sample

*264. The TC considered document TC/48/14.

*265. The TC requested the Office of the Union to prepare a summary of the information in the Annexes to document TC/48/14, corresponding to the assessment of uniformity by off-types on the basis of more than one sample or sub-sample. The summary would categorize the different situations where more than one sample or sub-sample were used and how the results from separate samples / sub-samples were combined for an overall assessment of uniformity of a variety.

*266. The TC agreed to invite the TWC to consider the information contained in the replies to the questionnaire "Population standards used for assessing uniformity by off types on the basis of more than one sample", as contained in the annexes to document TC/48/14 and in the summary to be produced by the Office of the Union, and to provide guidance on the consequences of different approaches.

DUS examination of seed-propagated varieties of Papaya

*267. The TC considered documents TC/48/15 Rev. and TG/264/2(proj.3).

*268. The TC noted the progress in the development of the draft of the Test Guidelines for Papaya, in order to cover seed-propagated varieties. The TC noted that it would be difficult to assess the proportion of male plants, hermaphrodite plants and female plants (Chars. 17-19) on the basis of the proposed sample sizes: 5 plants and 20 plants. Therefore, it agreed that the draft Test Guidelines for Papaya be referred back to the TWF for further consideration in that regard.

*269. The TC agreed with the general approach taken in the Test Guidelines in order to cover seed-propagated varieties of Papaya. In particular, it noted that the use of characteristics such as "Plant: proportion of hermaphrodite plants", "Plant: proportion of female plants" and "Plant: proportion of male plants" was an approach that had already been used for other adopted Test Guidelines.

Preparatory workshops

*270. The TC considered document TC/48/10.

*271. The TC noted the report of the preparatory workshops held in 2011 and the high level of participation by observer States.

*272. The TC approved the proposed program for 2012, as set out in document TC/48/10, subject to the inclusion of an item on information on the use of molecular techniques in the examination of DUS.

Webcasting of UPOV sessions

*273. The TC considered document TC/48/16.

*274. The TC agreed that it would be appropriate to consider broadcasting live webcasts, and place video recordings on the UPOV website, for future sessions of the TC, subject to arrangements to be agreed by the Consultative Committee. It noted that the WebEx facility for the Enlarged Editorial Committee (TC-EDC) meeting had been very effective and endorsed the continuation of that practice. The TC also agreed that the Office of the Union should discuss with the hosts of the TWPs in 2012 whether they would wish to arrange for WebEx to be used for selected Test Guidelines' subgroup (TG Subgroup) discussions. It welcomed the offer of France to test WebEx for [a] selected TG Subgroup[s] at the forty-first session of the TWA, to be held in Angers, France, from May 21 to 25, 2012, and invited the host and the Chairperson of the TWA to investigate a suitable TG Subgroup, in conjunction with the Office of the Union and the relevant Leading Expert[s]. It also noted that the Chairman of the TWC and the hosts of the thirtieth session of the TWC, to be held in Chisinau, Republic of Moldova, June 26 to 29, 2012, would discuss possibilities to make selected presentations via the internet.

*275. The TC agreed to request the Office of the Union to prepare a report on the use of WebEx at the TWP session[s], in order that the TC could review how to develop that approach further.

Test Guidelines

*276. The TC considered document TC/48/2 and TC/48/17.

Test Guidelines for Adoption

*277. The TC noted the procedure for the adoption of Test Guidelines as set out in paragraphs 2 and 3 of document TC/48/2.

*278. The TC noted the adoption of the Test Guidelines, as set out in paragraphs 4 and 5 of document TC/48/2.

279. The TC adopted the Test Guidelines listed in the table below on the basis of the amendments, as specified in Annex IV to this document, which was circulated in advance, and the linguistic changes

recommended by the TC-EDC and agreed that they should be published on the UPOV website at the earliest opportunity:

**	TWP	Document No. N°. du document Dokument-Nr. No del documento	English	Français	Deutsch	Español	Botanical name Nom botanique Botanischer Name Nombre botánico
NEW TEST GUIDELINES							
JP	TWA	TG/FAGOP(proj.7)	Buckwheat	Blé noir; Sarrasin	Buchweizen	Alforfón	*Fagopyrum esculentum* Moench (*Fagopyrum sagittatum* Gilib.)
FR	TWO	TG/CANNA(proj.10)	Canna	Balisier; Canna	Blumenrohr	Platanillo	*Canna* L.
PL/GB	TWO/ TWV	TG/ECNCE(proj.6)	Echinacea, Cone flower	Échinacée	Igelkopf		*Echinacea* Moench.
NL	TWA	TG/CAN_SAT(proj.6)	Hemp	Chanvre	Hanf	Cáñamo	*Cannabis sativa* L.
GB	TWO	TG/HEUCH(proj.6)	Heuchera, Coral Flower, Heucherella, Foamy Bells	Heuchera	Purpurglöckchen		*Heuchera* L., x*Heucherella* H. R. Wehrh., *Heuchera* x *Tiarella*
DE	TWF	TG/LONIC(proj.4)	Blue Honeysuckle, Bush Honeysuckle; Honeyberry		Blaue Honigbeere		*Lonicera caerulea* L
JP	TWO	TG/ONCID(proj.6)	Oncidium	Orchidée danseuse, Oncidium	Oncidium	Oncidium	*Oncidium* Sw.
JP	TWV	TG/SHIITK(proj.5)	Shiitake	Shiitake	Pasaniapilz	Shiitake	*Lentinula edodes* (Berk.) Pegler *Lentinus elodes* (Berk.) Sing.
REVISIONS OF TEST GUIDELINES							
NZ	TWF	TG/98/7(proj.5)	Actinidia, Kiwifruit	Actinidia	Actinidia	Actinidia	*Actinidia* Lindl.
AU/ES	TWA	TG/120/4(proj.5)	Durum wheat, Hard Wheat, Macaroni Wheat	Blé dur	Durumweizen; Hartweizen	Trigo duro	*Triticum turgidum* L. subsp. *durum* (Desf.) Husn., *Triticum durum* Desf., *Triticum turgidum* subsp. *turgidum* conv. *durum* (Desf.) MacKey, *Triticum turgidum* L.
GB	TWV	TG/218/2(proj.3)	Parsnip	Panais	Pastinake	Chirivía	*Pastinaca sativa* L.
DE	TWV	TG/63/7(proj.7)-TG/64/7(proj.6)	Black radish, Oriental radish	Radis rave	Rettich	Rabano de invierno, Rabano negro	*Raphanus sativus* L. var. *niger* (Mill.) S. Kerner, = (N) *Raphanus sativus* L. var. *longipinnatus* L.H. Bailey
			Radish, Garden Radish, European Radish, Chinese Small Radish, Western Radish	Radis de tous les mois	Radieschen	Rabanito	*Raphanus sativus* L. var *sativus* = (S)
PARTIAL REVISIONS OF TEST GUIDELINES							
FR	TWV/TWA	TG/12/9 Rev. (TC/48/2, TC/48/17)	French Bean	Haricot	Gartenbohne	Judía común, Alubia	Phaseolus vulgaris L.
DE	TWO	TG/78/4 (TC/48/2, TC/48/17)	Kalanchoe	Kalanchoe	Kalanchoe, Flammendes Kätchen	Kalancho	*Kalanchoe blossfeldiana* Poelln. and its hybrids
DE	TWO	TG/196/2 (TC/48/2, TC/48/17)	New Guinea Impatiens	Impatiente de Nouvelle-Guinée	Neu-Guinea-Impatiens	Impatiens de Nueva Guinea	New Guinea Impatiens Group
DE	TWF	TG/22/10 (TC/48/2, TC/48/17)	Strawberry	Fraisier	Erdbeere	Fresa, Frutilla	Fragaria L.

*280. The TC noted the following comments of the Delegation of Italy on the Test Guidelines for Durum Wheat (document TG/120/4(proj.5)):

- Importance of single ear rows testing for uniformity assessment (optional in Test Guidelines);
- Sample size of 20 plants in the first step for uniformity assessment might be too small; and
- Characteristic 19 “Lower glume”: hairiness of external surface should be assessed in a sample of 2,000 plants (“B”), not on the sample of 100 plants (“A”).

*281. The TC agreed that the Test Guidelines for Oncidium should be adopted subject to the relevant amendments, being approved by the TWO by correspondence.

*282. The TC noted that, in response to a number of technical questions raised by interested experts after the TWA session, it was agreed by the Chairperson and former Chairperson of the TWA, and the Leading Experts to consider a new draft of TG/SESAME at the forty-first session of the Technical Working Party for Agricultural Crops to be held in Angers, France, from May 21 to 25, 2012.

*283. The TC noted that, in response to a number of technical questions concerning disease resistance, raised by interested experts after the TWV session, it was agreed by the Chairperson and former Chairperson of the TWV, and the Leading Expert to consider a new draft of the Test Guidelines for Tomato Rootstocks and the partial revision of the Test Guidelines for Tomato at the forty-sixth session of the Technical Working Party for Vegetables to be held near the city of Venlo, Netherlands, from June 11 to 15, 2012.

*284. The TC considered the proposed revision of the Test Guidelines for Papaya, as set out in document TG/264/2(proj.3) and summarized in Annex V to document TC/48/15 Rev., in conjunction with the consideration of the TWF and the recommendation of the TC-EDC, as set out in paragraphs 30 to 32 of document TC/48/15 Rev.

*285. The TC agreed with the recommendation of the TC-EDC, as set out in paragraph 32 of document TC/48/15 Rev., that the draft Test Guidelines for Papaya be referred back to the TWF for further consideration.

286. The TC agreed, on the basis of the recommendation of the TC-EDC, that the draft Test Guidelines for Tree Paeony should be referred back to the TWO in order to resolve technical issues as presented in the comments by the TC-EDC, as set out in Annex IV to this document.

287. The TC agreed that, on the basis of the recommendation of the TC-EDC, that the draft Test Guidelines for Pineapple should be referred back to the TWF in order to resolve technical issues, as presented in the comments by the TC-EDC, as set out in Annex IV to this document.

Additional Characteristics

*288. The TC agreed that, in the first instance, additional characteristics should be posted in the TG Drafters’ Webpage. Further consideration to the publication of additional characteristics on the general website could be considered at a later date.

Draft Test Guidelines Discussed by the Technical Working Parties in 2011

*289. The TC noted the draft Test Guidelines discussed by the Technical Working Parties at their sessions in 2011, as listed in Annex II to document TC/48/2.

Draft Test Guidelines to be discussed by the Technical Working Parties in 2012

*290. The TC agreed the program for the development of new Test Guidelines and for the revision of Test Guidelines, as shown in Annex III to document TC/48/2.

*291. The TC noted the status of the existing Test Guidelines as listed in Annex IV to document TC/48/2.

Test Guidelines on the UPOV Website

*292. The TC noted that Word versions of all adopted Test Guidelines were made available on the UPOV website, as set out in paragraph 24 of document TC/48/2.

*293. The TC agreed to add a cover page to all previous adopted versions of the Test Guidelines, indicating their status before those documents were published on the UPOV website. The TC further agreed that consideration should be given to adding a disclaimer to all UPOV session documents in order to clarify the status of the documents.

*294. The TC noted the list of adopted Test Guidelines that have since been replaced, as presented in Annex V to document TC/48/2.

List of genera and species for which authorities have practical experience in the examination of distinctness, uniformity and stability

*295. The TC noted the information provided in document TC/48/4 and heard that the number of genera and species for which members of the Union had practical experience had increased from 2,679 in 2011 to 2,726 in 2012.

*296. The TC agreed that document TC/48/4 should be updated for the forty-ninth session of the TC.

Program for the forty-ninth session

*297. The following draft agenda was agreed for the forty-ninth session of the TC, to be held in Geneva in 2013:

1. Opening of the session
2. Adoption of the agenda
3. Discussion on:
   (a) molecular techniques:
      (i) application of models by members of the Union; and
      (ii) presentation of the situation with regard to molecular techniques in other international organizations;
   (b) use of DUS test reports by members of the Union
4. Report on developments in UPOV including relevant matters discussed in the last sessions of the Administrative and Legal Committee, the Consultative Committee and the Council (oral report by the Vice Secretary-General)
5. Progress reports on the work of the Technical Working Parties, including the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT), and the Ad Hoc Crop Subgroups on Molecular Techniques
6. Matters arising from the Technical Working Parties
7. TGP documents
8. Molecular techniques
9. Variety denominations
10. Information and databases
   (a) UPOV information databases
   (b) Variety description databases
   (c) Exchangeable software
   (d) Electronic application systems
11. Method of calculation of COYU
12. Assessing uniformity by off-types on the basis of more than one sample or sub samples
13. Electronic communications for the TC, TC-EDC and TWPs
14. Preparatory workshops
15. Test Guidelines
16. List of genera and species for which authorities have practical experience in the examination of distinctness, uniformity and stability
17. Program for the fiftieth session
18. Adoption of the report on the conclusions (if time permits)
19. Closing of the session

*298. The TC agreed that the forty-ninth session should be held over three days: Monday morning to Wednesday afternoon. It agreed that the discussions under agenda item 3 should be organized for Monday afternoon and Tuesday morning or afternoon. The TC agreed that the TWP chairpersons should be invited to make a visual presentation under agenda item 5 in the same way as for the forty-eighth session. It agreed that the TC-EDC should hold a two-day meeting in January 2013.

299. This report was adopted by correspondence.

[Annexes follow]

ANNEXE I / ANNEX I / ANLAGE I / ANEXO I

LISTE DES PARTICIPANTS / LIST OF PARTICIPANTS /
TEILNEHMERLISTE / LISTA DE PARTICIPANTES

(dans l'ordre alphabétique des noms français des membres/
in the alphabetical order of the names in French of the members/
in alphabetischer Reihenfolge der französischen Namen der Mitglieder/
por orden alfabético de los nombres en francés de los miembros)

I. MEMBRES / MEMBERS / VERBANDSMITGLIEDER / MIEMBROS

AFRIQUE DU SUD / SOUTH AFRICA / SÜDAFRIKA / SUDÁFRICA

Robyn HIERSE (Mrs.), Chief Plant Variety Examiner, Directorate: Genetic Resources, Department of Agriculture, Forestry & Fisheries, Private Bag X5044, Stellenbosch 7599
(tel.:+27 21 809 1655 fax: +27 21 887 2264 e-mail: RobynH@nda.agric.za)

Carensa PETZER (Mrs.), Chief Plant Variety Examiner, Directorate Genetic Resources, National Department of Agriculture, Private Bag X 5044, Stellenbosch 7599
(tel.:+27 21 809 1653 fax: +27 21 887 2264 e-mail: CarensaP@nda.agric.za)

ALLEMAGNE / GERMANY / DEUTSCHLAND / ALEMANIA

Beate RÜCKER (Mrs.), Abteilungsleiterin Registerprüfung, Bundessortenamt, Osterfelddamm 80, Postfach 61 04 40, 30627 Hannover
(tel.:+49 511 9566 5639 fax: +49 511 956 69600 e-mail: beate.ruecker@bundessortenamt.de)

AUSTRALIE / AUSTRALIA / AUSTRALIEN / AUSTRALIA

Nik HULSE, Senior Examiner of PBR, Plant Breeder's Rights Office, IP Australia, 47 Bowes Street, Phillip ACT 2606
(tel.: +61 2 6283 7982 fax: +61 2 6283 7999 e-mail: nik.hulse@ipaustralia.gov.au)

AUTRICHE / AUSTRIA / ÖSTERREICH / AUSTRIA

Barbara FÜRNWEGER (Frau), Leiterin, Abteilung Sortenschutz und Registerprüfung, Institut für Saat- und Pflanzgut, Phytosanität, Bienen, Österreichische Agentur für Gesundheit und Ernährungssicherheit GmbH, Spargelfeldstrasse 191, A-1220 Wien
(tel.:+43 50 555 34910 fax: +43 50 555 34909 e-mail: barbara.fuernweger@ages.at)

BRÉSIL / BRAZIL / BRASILIEN / BRASIL

Fabrício SANTANA SANTOS, Federal Agricultural Inspector, Coordinator of National Plant Variety Protection Office (SNPC), Ministry of Agriculture, Livestock and Food Supply, Esplanada dos Ministerios, Bloco 'D', Anexo A, Sala 250, CEP 70043-900 Brasilia , D.F.
(tel.:+55 61 3218 2549 fax: +55 61 3224 2842 e-mail: fabricio.santos@agricultura.gov.br)

CANADA / CANADA / KANADA / CANADÁ

Michel CORMIER, A/Commissioner, Plant Breeders' Rights Office, Canadian Food Inspection Agency (CFIA), Room 59-2E-330, 59, Camelot Drive, Ottawa Ontario K1A 0Y9
(tel.:+1 613 773 7135 fax: +1 613 773 7261 e-mail: michel.cormier@inspection.gc.ca)

Ashley BALCHIN (Ms.), Examiner, Plant Breeders' Rights Office, Canadian Food Inspection Agency (CFIA), Room 59-2E-323, 59, Camelot Drive, Ottawa Ontario
(tel.:+1 613 773 7137 fax: +1 613 773 7261 e-mail: ashley.balchin@inspection.gc.ca)

CHILI / CHILE

Andrés GUGGIANA, Consejero, Misión Permanente ante la Organización Mundial del Comercio (OMC), Rue de Moillebeau 58, 1º piso, 1209 Ginebra, Suiza
(tel.: +41 22 918 0080 fax: +41 22 7344194 e-mail: andres.guggiana@misionchileomc.ch)

CHINE / CHINA / CHINA / CHINA

LÜ Bo, Director, Division of Variety Management, Bureau of Seed Management, Ministry of Agriculture, No. 11 Nongzhanguannanli, Beijing
(tel.:+86 10 59193150 fax: +86 10 59193142 e-mail: lvbo@agri.gov.cn)

QI Wang, Director, Division of Protection of New Varieties of Plants, State Forestry Administration, No. 18, Hepingli East Street, Beijing 100714
(tel.:+86 10 84239104 fax: +86 10 84238883 e-mail: wangqihq@sina.com)

Xinming ZHANG, Director, Division for Plant Variety Testing, Development Centre for Science & Technology, Ministry of Agriculture, Room 709, Nongfeng Building, No. 96 Dong San Huan Nan Lu, Chaoyang District, 100122 Beijing
(tel.:+86 10 59199395 fax: +86 10 59199393 e-mail: zhangxinming@agri.gov.cn)

Yan ZHONG, Project Administrator, Division 2, State Intellectual Property Office of the People's Republic of China (SIPO), 6 Xitucheng Road, Haidian District, Beijing
(tel.:+86 10 62086884 fax: +86 10 62019615 e-mail: zhongyan@sipo.gov.cn)

COLOMBIE / COLOMBIA / KOLUMBIEN / COLOMBIA

Ana Luisa DÍAZ JIMÉNEZ (Sra.), Directora Técnica de Semillas, Dirección Técnica de Semillas, Instituto Colombiano Agropecuario (ICA), Carrera 41 No. 17-81, Zona Industrial de Puente Aranda, Bogotá D.C.
(tel.:+57 1 3323700 fax: +57 1 3323700 e-mail: ana.diaz@ica.gov.co)

Juan Camilo SARETZKI-FORERO, Primer Secretario, Misión Permanente, Chemin Champ d'Anier 17-19, CH-1209 Geneva
(tel.: +41 22 789 4718 fax: +41 22 791 0787 e-mail: juan.saretzki@cancilleria.gov.co)

Catalina GAVIRIA BRAVO (Sra.), Consejera Comercial, Misión de Colombia ante la OMC, Rue de lausanne 80 – 82, CH-1202 Geneva
(tel.: +41 22 919 05 14 fax: +41 22 734 60 94 e-mail: catalina.gaviria@colombiaomc.ch)

COSTA RICA / COSTA RICA / COSTA RICA / COSTA RICA

Constanza ORTIZ (Sra.), Interna, Misión Permanente de la República de Costa Rica ante la Oficina de las Naciones Unidas en Ginebra, 23, Avenue de France, CH-1202 Ginebra
(tel.: +41 22 731 2587 fax: + 41 22 731 2069 e-mail: mission.costa-rica@ties.itu.int)

CROATIE / CROATIA / KROATIEN / CROACIA

Ružica JURIĆ (Mrs.), Head of Plant Variety Protection and Registration, Institute for Seeds and Seedlings, Croatian Centre for Agriculture Food and Rural Affairs, Institute for Seed and Seedlings, Usorska 19, Brijest, HR-31 000 Osijek
(tel.:+385 31 275 715 fax: +385 31 275 716 e-mail: ruzica.juric@hcphs.hr)

DANEMARK / DENMARK / DÄNEMARK / DINAMARCA

Gerhard DENEKEN, Head, Department of Variety Testing, The Danish AgriFish Agency, Ministry of Food, Agriculture and Fisheries, Teglvaerksvej 10, Tystofte, DK-4230 Skaelskoer
(tel.:+45 5816 0601 fax: +45 58 160606 e-mail: gde@naturerhverv.dk)

Erik LAWAETZ, Academic officer - DUS testing, Department of Variety Testing, Plantedirektoratet, Teglvaerksvej 10, Tystofte, DK-4230 Skaelskoer
(tel.:+45 5816 06 03 fax: +45 5816 06 06 e-mail: eal@pdir.dk)

ESPAGNE / SPAIN / SPANIEN / ESPAÑA

Luis SALAICES, Jefe de Área del Registro de Variedades, Oficina Española de Variedades Vegetales (OEVV), Ministerio de Agricultura, Alimentación y Medio Ambiente, Calle Alfonso XII, No. 62, 2a Planta, E-28014 Madrid
(tel.: +34 91 3476712 fax: +34 91 3476703 e-mail: luis.salaices@magrama.es)

Jose Luis ALONSO PRADOS, Technical Director - DTEVPF, Dirección Técnica de Evaluación de Variedades y Productos Fitosantarios (DTEVPF), INIA, Ctra de la Coruña km 7, E-28040 Madrid
(tel.:+34 91 347 1473 fax: +34 91 347 4168 e-mail: prados@inia.es)

ESTONIE / ESTONIA / ESTLAND / ESTONIA

Laima PUUR (Ms.), Head, Variety Department, Estonian Agricultural Board, Vabaduse sq. 4, EE-71020 Viljandi
(tel.:+372 4351240 fax: +372 4351241 e-mail: laima.puur@pma.agri.ee)

ÉTATS-UNIS D'AMÉRIQUE / UNITED STATES OF AMERICA / VEREINIGTE STAATEN VON AMERIKA / ESTADOS UNIDOS DE AMÉRICA

Kitisri SUKHAPINDA (Ms.), Patent Attorney, Office of Policy and External Affairs, United States Patent and Trademark Office (USPTO), Madison Building, West Wing, 600 Dulany Street, MDW 10A30, Alexandria VA 22313
(tel.:+1 571 272 9300 fax: + 1 571 273 0085 e-mail: kitisri.sukhapinda@uspto.gov)

Karin L. FERRITER (Ms.), Intellectual Property Attaché, United States Mission to the WTO, 11, route de Pregny, 1292 Chambesy
(tel.: +41 22 749 5281 e-mail: karin_ferriter@ustr.eop.gov)

FINLANDE / FINLAND / FINNLAND / FINLANDIA

Sami Tuomas MARKKANEN, Senior Officer, Control Department, Seed Certification Unit, Finnish Food Safety Authority Evira, P.O. Box 111, FIN-32201 Loimaa
(tel.:358 7829 4543 fax: 358 77 25317 e-mail: sami.markkanen@evira.fi)

FRANCE / FRANCE / FRANKREICH / FRANCIA

Joël GUIARD, Expert études des variétés Relations internationales OCVV UPOV, Groupe d'étude et de contrôle des variétés et des semences (GEVES), Rue Georges Morel, BP 90024, F-49071 Beaucouzé Cedex
(tel.:+33 241 228637 fax: +33 241 228601 e-mail: joel.guiard@geves.fr)

François BOULINEAU, DUS Coordinator, Groupe d'étude et de contrôle des variétés et des semences (GEVES), F-49250 Brion
(tel.: +33 2 41 57 23 22 fax: +33 2 41 57 46 19 e-mail: francois.boulineau@geves.fr)

Richard BRAND, Responsable DHS GEVES, Groupe d'étude et de contrôle des variétés et des semences (GEVES), 4790 route des Vignères, F-84250 Le Thor Cedex
(tel.:+33 4 9078 6660 fax: +33 4 9078 0161 e-mail: richard.brand@geves.fr)

IRLANDE / IRELAND / IRLAND / IRLANDA

Donal COLEMAN, Controller of Plant Breeders' Rights, Department of Agriculture, National Crops Centre, Backweston Farm, Leixlip , Co. Kildare
(tel.: +353 1 630 2902 fax: +353 1 628 0634 e-mail: donal.coleman@agriculture.gov.ie)

ISRAËL / ISRAEL / ISRAEL / ISRAEL

Omar ZEIDAN, Chairman of PBR Council, Deputy Diretor Extension Services, Ministry of Agriculture, P.O. Box 28, Beit-Dagan 50250
(tel.:+972 3 9485948 fax: +972 3 9485668 e-mail: ozaidan@shaham.moag.gov.il; ozaidan@moag.gov.il)

Michal GOLDMAN (Mrs.), Registrar, Plant Breeder's Rights Council, Ministry of Agriculture, P.O. Box 30, Beit-Dagan 50250
(tel.:+972 3 9485902 fax: +972 3 9485903 e-mail: michalg@moag.gov.il)

ITALIE / ITALY / ITALIEN / ITALIA

Pier Giacomo BIANCHI, Head, General Affairs, National Office for Seed Certification INRAN, Via Ugo Bassi, 8, I-20159 Milano
(tel.:+39 02 69012026 fax: +39 02 69012049 e-mail: pg.bianchi@ense.it)

JAPON / JAPAN / JAPAN / JAPÓN

Takashi UEKI, Director, Plant Variety Protection Office, New Business and Intellectual Property Division, Food Industry Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-ku, 100-8950 Tokyo
(tel.:+81 3 6738 6444 fax: +81 3 3502 5301 e-mail: takashi_ueki@nm.maff.go.jp)

Mitsutaro FUJISADA, Senior Policy Advisor: Intellectual Property, New Business and Intellectual Property Division, Food Industry Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries (MAFF), 1-2-1, Kasumigaseki, Chiyoda-ku, 100-8950 Tokyo
(tel.:+81 3 6738 6445 fax: +81 3 3502 5301 e-mail: mitutarou_fujisada@nm.maff.go.jp)

Kenji NUMAGUCHI, Examiner, Plant Variety Protection Office, New Business and Intellectual Property Division, Seeds and Seedlings Division Agricultural Production Bureau, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-ku, 100-8950 Tokyo
(tel.: +81 3 6738 6449 fax: +81 3 3502 6572 e-mail: kenji_numaguchi@nm.maff.go.jp)

KENYA / KENYA / KENIA / KENYA

James M. ONSANDO, Managing Director, Kenya Plant Health Inspectorate Service (KEPHIS), P.O. Box 49592, 00100 Nairobi
(tel.: +254 20 3584088 fax: +254 20 3536175 e-mail: director@kephis.org)

LITUANIE / LITHUANIA / LITAUEN / LITUANIA

Sigita JUCIUVIENE (Mrs.), Head, Division of Plant Variety, Registration and Legal Protection, State Plant Service under the Ministry of Agriculture of the Republic of Lithuania, Ozo St. 4a, LT-08200 Vilnius
(tel.:+370 5 234 3647 fax: +370 5 237 0233 e-mail: sigita.juciuviene@vatzum.lt)

MAROC / MOROCCO / MAROKKO / MARRUECOS

Amar TAHIRI, Chef de la Division du contrôle des semences et plants, Office National de Sécurité sanitaire des Produits alimentaires (ONSSA), Ministère de l'Agriculture et de la Pêche maritime, Rue Hafiane Cherkaoui, B.P. 1308, Rabat
(tel. : + 212 537 771085 fax: +212 537 779852 e-mail: amar.tahiri@gmail.com)

MEXIQUE / MEXICO / MEXIKO / MÉXICO

Enriqueta MOLINA MACÍAS (Srta.), Directora General, Servicio Nacional de Inspección y Certificación de Semillas (SNICS), Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (SAGARPA), Av. Presidente Juárez, 13, Col. El Cortijo, Tlalnepantla , Estado de México 54000
(tel.:+52 55 3622 0667 fax: +52 55 3622 0670 e-mail: enriqueta.molina@sagarpa.gob.mx)

Eduardo PADILLA VACA, Subdirector, Registro y Control de Variedades Vegetales, Servicio Nacional de Inspección y Certificación de Semillas (SNICS), Av. Presidente Juárez 13, Col. El Cortijo, 54000 Tlalnepantla , Estado de México
(tel.:+52 55 3622 0667 fax: +52 55 3622 0670 e-mail: eduardo.padilla@snics.gob.mx)

Alejandro F. BARRIENTOS-PRIEGO, Professor-Investigator, Departamento de Fitotecnia, Universidad Autónoma Chapingo (UACh), Km. 38.5 Carretera México-Texcoco, CP 56230, Chapingo, Estado de México
(tel.:+52 595 9521559 fax: +52 595 9521642 e-mail: abarrien@gmail.com)

NOUVELLE-ZÉLANDE / NEW ZEALAND / NEUSEELAND / NUEVA ZELANDIA

Christopher J. BARNABY, Assistant Commissioner / Principal Examiner, Plant Variety Rights Office, Intellectual Property Office of New Zealand, Private Bag 4714, Christchurch 8140
(tel.:+64 3 9626206 fax: +64 3 9626202 e-mail: Chris.Barnaby@pvr.govt.nz)

PARAGUAY / PARAGUAY / PARAGUAY / PARAGUAY

América Ramona GONZÁLEZ SANABRIA (Sra.), Directora General, Dirección General de Semillas, Servicio Nacional de Calidad y Sanidad Vegetal y de Semillas (SENAVE), Gaspar Rodriguez de Francia No. 685, Ruta Mariscal Estigarribia, San Lorenzo
(tel.:+595 21 584645 fax: +595 21 584645 e-mail: america.gonzalez@senave.gov.py)

Blanca Julia NÚÑEZ TEIXIDÓ (Sra.), Ingeniero Agrónomo, Jefa del Departamento de Protección y Uso de Variedades, Dirección General de Semillas, Servicio Nacional de Calidad y Sanidad Vegetal y de Semillas (SENAVE), Gaspar Rodríguez de Francia No. 685, Ruta Mariscal Estigarribia, San Lorenzo
(tel.: +595 21 584645 fax: +595 21 584645 e-mail: dpuv@senave.gov.py)

PAYS-BAS / NETHERLANDS / NIEDERLANDE / PAÍSES BAJOS

Kees VAN ETTEKOVEN, Head of Variety Testing Department, Naktuinbouw NL, Sotaweg 22, Postbus 40, NL-2370 AA Roelofarendsveen
(tel.: +31 71 332 6128 fax: +31 71 332 6565 e-mail: c.v.ettekoven@naktuinbouw.nl)

PÉROU / PERU / PERU / PERÚ

Giancarlo LEON, Primer Secretario, Misión Permanente, 71, Louis Casai, 1216 Cointrin
(tel.: +41 22 791 7720 fax: +41 22 791 7729 e-mail: giancarlo.leon@ties.itu.int)

POLOGNE / POLAND / POLEN / POLONIA

Marcin KRÓL, Head, DUS Testing Department, Research Centre for Cultivar Testing (COBORU), PL-63022 Slupia Wielka
(tel.:+48 61 285 2341 fax: +48 61 285 3558 e-mail: m.krol@coboru.pl)

RÉPUBLIQUE DE CORÉE / REPUBLIC OF KOREA / REPUBLIK KOREA / REPÚBLICA DE COREA

CHOI Keun-Jin, Director of Variety Testing Division, Korea Seed & Variety Service (KSVS), Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF), 39 Taejangro Yongtonggu Suwon, Geyonggi-do 443-400
(tel.:+82 31 8008 0200 fax: +82 31 203 7431 e-mail: kjchoi1001@korea.kr)

Hyun-Joo SHIN (Mrs.), Deputy Director, Plant Variety Protection Division, Korea Seed & Variety Service (KSVS), Ministry for Food, Agriculture, Forestry and Fisheries (MIFAFF), Jungang-ro 328, Manan-gu, Anyang-Si, Gyeonggi-do 430-016
(tel.:+82 31 467 0190 fax: +82 31 467 0160 e-mail: shjnew@korea.kr)

Oksun KIM (Ms.), Plant Variety Protection Division, Korea Seed & Variety Service (KSVS) / MIFAFF, 328, Jungang-ro, Manan-gu, Anyang, 430-016 Gyeonggi-do
(tel.:+82 31 467 0191 fax: +82 31 467 0160 e-mail: oksunkim@korea.kr)

LEE Jeong-Ho, Examiner, Korea Forest Seed and Variety Center (KFSV), Korea Forest Service, 670-4 Suhoe-ri, Suanbo-myeon, Chungju-Si, Chungcheongbuk-Do 380-941
(tel.:82 43 850 3321 fax: 82 43 850 3390 e-mail: mtmac@korea.kr)

RÉPUBLIQUE DE MOLDOVA / REPUBLIC OF MOLDOVA / REPUBLIK MOLDAU / REPÚBLICA DE MOLDOVA

Mihail MACHIDON, President, State Commission for Crops Variety Testing and Registration (SCCVTR), Bd. Stefan cel Mare, 162, C.P. 1873, MD-2004 Chisinau
(tel.:+373-22-220300 fax: +373-22-211537 e-mail: mihail.machidon@yahoo.com)

Ala GUŞAN (Mrs.), Director, Inventions and Plant Varieties Department, State Agency on Intellectual Property (AGEPI), 24/1 Andrei Doga str., MD-2024 Chisinau
(tel.:+373 22 400582 fax: +373 22 440119 e-mail: office@agepi.md)

RÉPUBLIQUE TCHÈQUE / CZECH REPUBLIC / TSCHECHISCHE REPUBLIK / REPÚBLICA CHECA

Radmila SAFARIKOVA (Mrs.), Head of Division, Central Institute for Supervising and Testing in Agriculture (UKZUZ), National Plant Variety Office, Hroznová 2, 656 06 Brno
(tel.:+420 543 548 221 fax: +420 543 212 440 e-mail: radmila.safarikova@ukzuz.cz)

ROUMANIE / ROMANIA / RUMÄNIEN / RUMANIA

Mihaela-Rodica CIORA (Mrs.), DUS Expert, State Institute for Variety Testing and Registration (ISTIS), 61, Marasti, Sector 1, P.O. Box 32-35, 011464 Bucarest
(tel.:+40 213 184380 fax: +40 213 184408 e-mail: mihaela_ciora@istis.ro)

Aura Giorgiana MINDRUTA (Ms.), Expert, State Institute for Variety Testing and Registration (ISTIS), Bd. Marasti 61, sector 1, P.O. Box 32-35, 011464 Bucarest
(tel.:+40 21 3184380 fax: +40 21 3184408 e-mail: aura_mindruta@istis.ro)

Adina BADULESCU (Mrs.), Technical Expert, State Institute for Variety Testing and Registration (ISTIS), Bd. Marasti nr. 61, sector 1, P.O. Box 32-35, 011464 Bucarest, Roumanie
(tel.:+40 21 318 4380 fax: +40 21 3184408 e-mail: adina_badulescu@istis.ro)

Niculina DINCA (Mrs.), Legal Advisor, State Institute for Variety Testing and Registration (ISTIS), Bd. Marasti nr. 61, sector 1, P.O. Box 3235,011464 Bucarest, Roumanie
(tel. : +40 21 3184380 fax : +40 21 3184408 e-mail: nina_dinca@istis.ro)

ROYAUME-UNI / UNITED KINGDOM / VEREINIGTES KÖNIGREICH / REINO UNIDO

Andrew MITCHELL, Controller of Plant Variety Rights, The Food and Environment Research Agency (FERA), Whitehouse Lane, Huntingdon Road, Cambridge CB3 0LF
(tel.: +44 1223 342 384 fax: +44 1223 342 386 e-mail: andy.mitchell@defra.gsi.gov.uk)

Sally WATSON (Mrs.), Biometrics Branch, Agri-Food & Biosciences Institute, 18a, Newforge Lane, Belfast BT9 5PX (tel.: +44 28902 55 292 fax: +44 28902 55 008 e-mail: sally.watson@afbini.gov.uk)

SLOVAQUIE / SLOVAKIA / SLOWAKEI / ESLOVAQUIA

Bronislava BÁTOROVÁ (Mrs.), National Coordinator, Senior Officer, Department of Variety Testing, Central Controlling and Testing Institute in Agriculture (ÚKSÚP), Akademická 4, SK-949 01 Nitra
(tel.:+421 37 655 1080 fax: +421 37 652 3086 e-mail: bronislava.batorova@uksup.sk)

TUNISIE / TUNISIA / TUNESIEN / TÚNEZ

Kacem CHAMMAKHI, Chef, Service de l'évaluation, de l'homologation, de la protection des obtentions végétales et des relations extérieures, Direction générale de la protection et du contrôle de la qualité des produits agricoles, Ministère de l'Agriculture, des ressources hydrauliques et de la pêche, 30, rue Alain Savary, 1002 Tunis
(tel.: +216 71 788979 fax: +216 71 784419 e-mail: kacemchammakhi@ymail.com)

TURQUIE / TURKEY / TÜRKEI / TURQUÍA

Ahmet ATICI, Technical Deputy Director, Variety Registration and Seed Certification Center, P.O. Box 30, Yenimahalle, Ankara
(tel.: +90 312 3154605 fax: +90 312 3150901 e-mail: aatici42@hotmail.com)

Handan BUYUKDEMIRCI (Mrs.), Expert, The Ministry of Food, Agriculture and Livestock, The General Directorate of Agricultural Production (BUGEM), Eskisehir Yolu 9 KM, Lodumlu, Ankara, Turquie
(tel.: +90 312 258 84 28 e-mail: handan.buyukdemirci@gmail.com)

UKRAINE / UKRAINE / UKRAINE / UCRANIA

Petro VASYLIUK, Director, Ukrainian Institute for Plant Variety Examination, 15, Henarala Rodimtseva Str., 03041 Kiev
(tel.: +380442582846 fax: +380442582846 e-mail: sops@sops.gov.ua)

Nataliya YAKUBENKO (Mrs.), Head, Department of International Cooperation and Publishing Activities, Ukrainian Institute for Plant Variety Examination, 15, Henerala Rodimtseva str, 03041 Kyiv
(tel.: +380 44 258 2846 fax: +380 44 258 2846 e-mail: nataliya@sops.gov.ua; nataliya.yakubenko@gmail.com)

UNION EUROPÉENNE / EUROPEAN UNION / EUROPÄISCHE UNION / UNIÓN EUROPEA

Päivi MANNERKORPI (Mrs.), Chef de section - Unité E2, Direction Générale Santé et Protection des Consommateurs, Commission européenne (DG SANCO), Rue Froissart 101, 2/180, 1040 Bruxelles
(tel.:+32 2 299 3724 fax: +32 2 296 0951 e-mail: paivi.mannerkorpi@ec.europa.eu)

Carlos GODINHO, Vice-President, Community Plant Variety Office (CPVO), 3, boulevard Maréchal Foch, B.P. 10121, 49101 Angers Cedex 02
(tel.: +33 2 4125 6413 fax: +33 2 4125 6410 e-mail: godinho@cpvo.europa.eu)

Isabelle CLEMENT-NISSOU (Mrs.), Policy Officer, Direction Générale Santé et Protection des Consommateurs, Commission européenne (DG SANCO), rue Froissart 101, 1040 Bruxelles
(tel.:+32 229 87834 fax: +32 2 2960951 e-mail: isabelle.clement-nissou@ec.europa.eu)

URUGUAY / URUGUAY / URUGUAY / URUGUAY

Gerardo CAMPS, Gerente Evaluación y Registro de Cultivares, Instituto Nacional de Semillas (INASE), Cno. Bertolotti s/n R-8 Km 29, Barros Blancos, Canelones
(tel.:+598 2 288 7099 fax: +598 2 288 7077 e-mail: gcamps@inase.org.uy)

VIET NAM / VIET NAM / VIETNAM / VIET NAM

Thanh Minh NGUYEN, Examiner / International Relation Affairs on Plant Variety Protection, Plant Variety Protection Office (PVPO), Department of Crop Production (DCP), Ministry of Agriculture and Rural Development (MARD), Room 405, Building A6B No. 2 Ngocha Str., Ba Dinh District, Hanoi 844
(tel.:+84 4 38435182 fax: +84 4 37342844 e-mail: minh_pvp@yahoo.com)

Tadao MIZUNO, JICA, Expert on PVP, Plant Variety Protection Office, Room 405 A6B Building, No 2 Ngoc Ha Str. Badinh, Hanoi
(tel.:+844 38435182 fax: +844 37342844 e-mail: tadao.mizuno@gmail.com)

Van Son MAI, Counsellor, Permanent Mission, Chemin des Corbillettes 30, 1218 Grand-Saconnex, Geneva, Switzerland
(tel: +41 22 798 24 85 Fax: +41 22 798 07 24 Email: info@vnmission-ge.gov.vn)

II. OBSERVATEURS / OBSERVERS / BEOBACHTER / OBSERVADORES

ARABIE SAOUDITE / SAUDI ARABIA / SAUDI-ARABIEN / ARABIA SAUDITA

Fhead AL SUBAEI, Patent Examiner, General Directorate of Patents, King Abdulaziz City for Science and Technology (KACST), P.O. Box 6086, Riyadh 11442

Ali Yaha NAMAZI, Patent Examiner, General Directorate of Patents, King Abdulaziz City for Science and Technology (KACST), P. O. Box 6086, Riyadh 11442
(tel.: +966 1 4883555 fax: +966 1 4814351 e-mail: anamazi@kacst.edu.sa)

GHANA / GHANA / GHANA / GHANA

Grace Ama ISSAHAQUE (Mrs.), Principal State Attorney, Registrar-General's Department, Ministry of Justice, P.O. Box 118, Accra
(tel.:+233 21 666 469 fax: +233 21 666 081 e-mail: graceissahaque@hotmail.com)

MALAISIE / MALAYSIA / MALAYSIA / MALASIA

Abd Rahman MILAN, Principal Research Officer, Horticulture Research Centre, Malaysian Agricultural Research and Development Institute (MARDI), P.O. Box 12301, General Post Office, 50774 Kuala Lumpur
(tel.: +603 89437922 fax: +603 8943 7623 e-mail: armilan@mardi.gov.my)

THAÏLANDE / THAILAND / THAILAND / TAILANDIA

Thidakoon SAENUDOM (Miss), Agricultural Scientist, Plant Varieties Protection Office, Ministry of Agriculture and Cooperatives, Phahonyothin Road, Chatuchak, 10900 Bangkok
(tel.: +66 2 940 7214 fax: +66 2 579 0548 e-mail: thidakuns@hotmail.com)

Waraporn THONGPAN (Ms.), Agricultural scientist, Ministry of Agriculture and Cooperatives, Phahonyothin, Bangkok
(tel.: 66 2 940 7421 fax: 66 2 561 4665 e-mail: wawa_037@yahoo.com)

III. ORGANISATIONS / ORGANIZATIONS / ORGANISATIONEN / ORGANIZACIONES

INTERNATIONAL SEED FEDERATION (ISF)

Marcel BRUINS, Secretary General, International Seed Federation (ISF), 7, chemin du Reposoir, 1260 Nyon, Switzerland
(tel.: +41 22 365 4420 fax: +41 22 365 4421 e-mail: isf@worldseed.org)

Stevan MADJARAC, Global Germplasm IP Head, Monsanto Company, 700 Chesterfield Pkwy, BB1B, Chesterfield 63017
(tel.: +1 636 7374395 e-mail: stevan.madjarac@monsanto.com)

Astrid M. SCHENKEVELD (Mrs.), Specialist, Variety Registration & Protection, Rijk Zwaan Zaadteelt en Zaadhandel B.V., Burg. Crezeelaan 40, 2678 ZG De Lier , Pays-Bas
(tel.: +31 174 532414 fax: +31 174 510720 e-mail: a.schenkeveld@rijkzwaan.nl)

EUROPEAN SEED ASSOCIATION (ESA)

Bert SCHOLTE, Technical Director, European Seed Association (ESA), 23, rue Luxembourg, 1000 Brussels, Belgium
(tel.: +32 2 743 2860 fax: +32 2 743 2869 e-mail: bertscholte@euroseeds.org)

Christiane DUCHENE (Mrs.), Seed and IP Regulary Affairs, Limagrain, BP 1, 63720 Chappes
(tel.: +33 473 634083 e-mail: christiane.duchene@limagrain.com)

ASSOCIATION FOR PLANT BREEDING FOR THE BENEFIT OF SOCIETY (APBREBES)

François MEIENBERG, Board Member, Berne Declaration, P.O. Box 8026, Zürich, Switzerland
(tel.: +41 44 277 7004 fax: +41 44 277 7001 e-mail: food@evb.ch)

Susan H. BRAGDON (Ms.), Executive Director, 3130 SE Lambert Street, Portland, Oregan 97202, United States of America
(tel.: +1 503 772 9595 e-mail: bragdonsh@gmail.com)

COMMUNAUTÉ INTERNATIONALE DES OBTENTEURS DE PLANTES ORNEMENTALES ET FRUITIÈRES DE REPRODUCTION ASEXUÉE (CIOPORA) / INTERNATIONAL COMMUNITY OF BREEDERS OF ASEXUALLY REPRODUCED ORNAMENTAL AND FRUIT VARIETIES (CIOPORA) / INTERNATIONALE GEMEINSCHAFT DER ZÜCHTER VEGETATIV VERMEHRBARER ZIER- UND OBSTPFLANZEN (CIOPORA) / COMUNIDAD INTERNACIONAL DE OBTENTORES DE PLANTAS ORNAMENTALES Y FRUTALES DE REPRODUCCIÓN ASEXUADA (CIOPORA)

Edgar KRIEGER, Secretary General, International Community of Breeders of Asexually Reproduced Ornamental and Fruit Plants (CIOPORA), Postfach 13 05 06, 20105 Hamburg, Germany
(tel.: +49 40 555 63702 fax: +49 40 555 63703 e-mail: edgar.krieger@ciopora.org)

EUROPEAN COORDINATION VIA CAMPESINA (ECVC)

Valentina HEMMELER MAÏGA (Mme), Permanente syndicale, Uniterre, 9, avenue du Grammont, 1007 Lausanne, Suisse
(tel.: +41 21 601 7467 fax: +41 21 6175175 e-mail: v.hemmeler@uniterre.ch)

IV. BUREAU DE L'OMPI / OFFICE OF WIPO / BÜRO DER WIPO / OFICINA DE LA OMPI

András MAKADI, Deputy Director, IT Technical Service, Information and Communication Technology Department, Administration and Management Sector

Michael JUNG, Head, Internet Services Section, Business Solutions Management Service, Information and Communication Technology Department

Glenn MAC STRAVIC, Head, Brand Database Unit, Global Databases Service, Global Information Service

Young-Woo YUN, Senior Industrial Property Information Officer, WIPO Standards Section, International Classifications and WIPO Standards Service, Global Infrastructure Sector

Sebastian PEREZ DEL CASTILLO, Analyst-Programmer, Internet Services Section, Business Solutions Management Service, Information and Communication Technology Department

Benjamin FRITZ, Conference Technologies Specialist, Infrastructure Section, IT Technical Service, Information and Communication Technology Department

José APPAVE, Senior Service Data Administration Clerk, Brand Database Unit, Global Databases Section, Global Information Service

V. BUREAU / OFFICE / VORSITZ / OFICINA

Joël GUIARD, Chairman

Alejandro BARRIENTOS-PRIEGO, Vice-Chairman

VI. BUREAU DE L'UPOV / OFFICE OF UPOV / BÜRO DER UPOV / OFICINA DE LA UPOV

Peter BUTTON, Vice Secretary-General

Yolanda HUERTA (Mrs.), Legal Counsel

Julia BORYS (Mrs.), Senior Technical Counsellor

Fuminori AIHARA, Counsellor

[L'annexe II suit/
Annex II follows/
Anlage II folgt/
Sigue el Anexo II]

ANNEX II

REPORTS ON DEVELOPMENTS IN UPOV INCLUDING RELEVANT MATTERS DISCUSSED IN THE LAST SESSIONS OF THE ADMINISTRATIVE AND LEGAL COMMITTEE, THE CONSULTATIVE COMMITTEE AND THE COUNCIL

TECHNICAL COMMITTEE
Forty-eighth Session

REPORT ON DEVELOPMENTS IN UPOV
including relevant matters discussed in the last sessions of the Administrative and Legal Committee, the Consultative Committee and the Council

Peter Button
Vice Secretary-General, UPOV

Geneva, March 26 to 28, 2012

OVERVIEW

- Membership & Chairmanship
- Recent events
- New databases (PLUTO & UPOV Lex)
- Website & access to information
- New information material

2

MEMBERSHIP OF UPOV

70 Members

New Members

Peru	as of Aug. 8, 2011
Former Yugoslav Republic of Macedonia	as of May 4, 2011

Ratification of 1991 Act

Ireland	as of Dec. 8, 2011

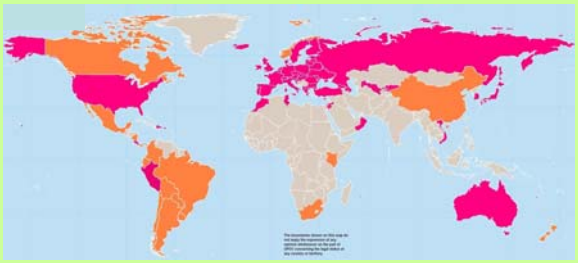
Laws examined	Council session	Advice
Republic of Serbia	April 8, 2011	Positive

3

Members of UPOV (green) & initiating States & organizations (brown)

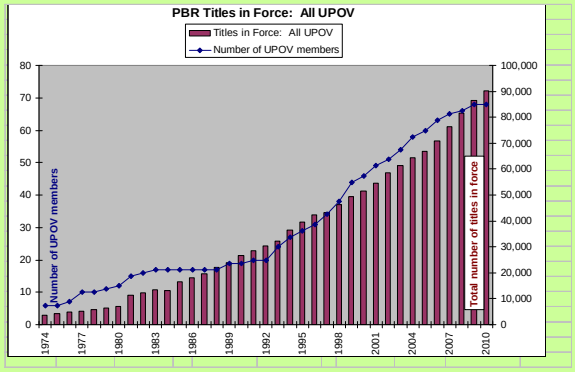
4

UPOV Membership: territories covered

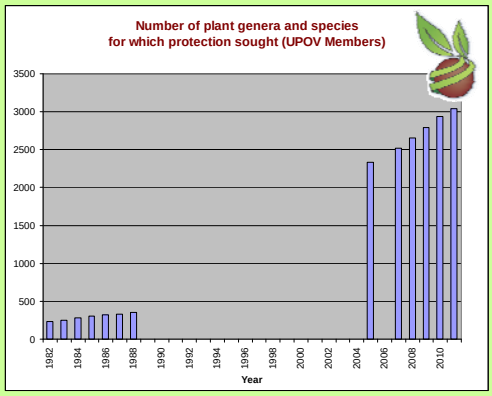


5

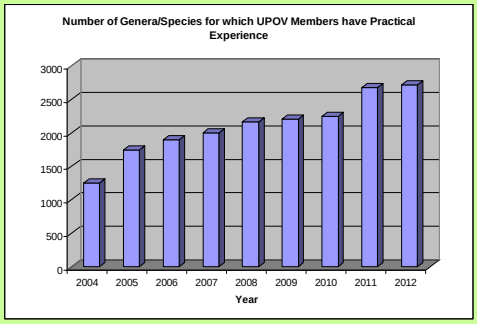
Development of Plant Variety Protection



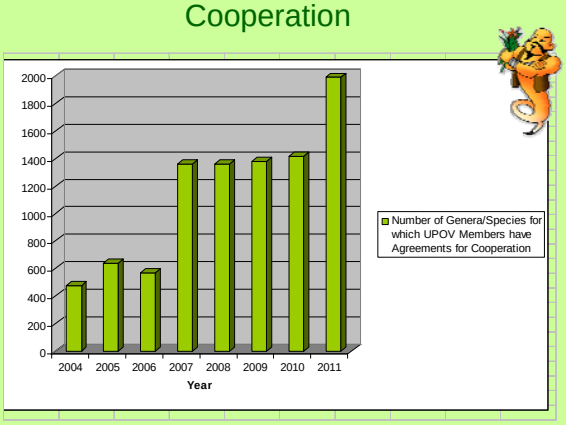
Plant Genera and Species



Practical Experience



Cooperation



OVERVIEW

- Membership & **Chairmanship**
- Recent events
- New databases (PLUTO & UPOV Lex)
- Website & access to information
- New information material

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ELECTION OF CHAIRPERSONS

Technical Working Party	Chairperson
TWA	Mrs. Robyn Hierse (South Africa)
TWC	Mr. Sami Markkanen (Finland)
TWF	Mrs. Carensa Petzer (South Africa)
TWO	Mr. Nik Hulse (Australia)
TWV	Mr. François Boulineau (France)
BMT	Mr. Alejandro Barrientos Priego (Mexico)

OVERVIEW

- Membership & Chairmanship
- **Recent events**
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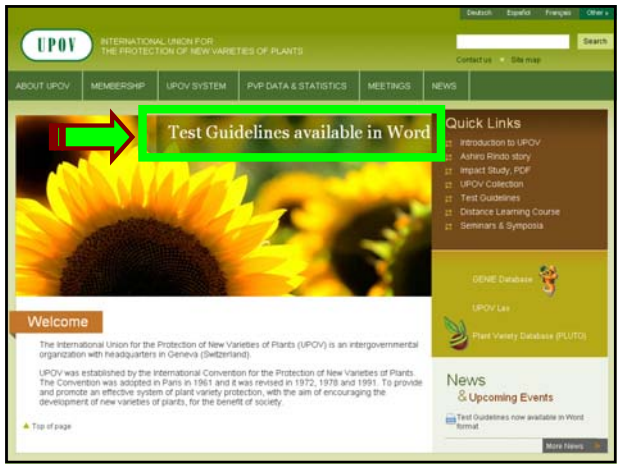

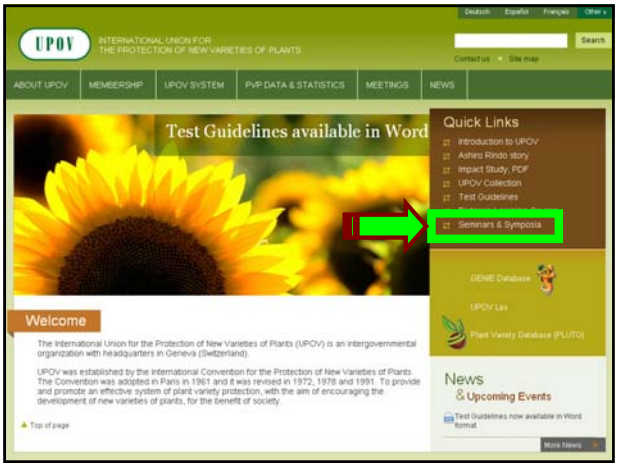

Use of Plant Variety Protection by National Research Centers

Chair: Enriqueta Molina Conclusions – Session 1

Plant Variety Protection:

- **Promotes private sector involvement in research and development**
- **A tool for technology transfer**
- **Provides a legal framework for financial investment**
- **Encourages innovation in breeding aims, particularly for the development of new or niche markets**
- **Focuses investment on meeting the needs of farmers and consumers**

Chair: Enriqueta Molina

1. Ryudai Oshima, NARO
2. Jenn James, Grasslanz
3. Shadrack R. Moephuli, ARC
4. Filipe de Moraes Teixeira, EMBRAPA
5. Yves Lespinasse, INRA

Technology Transfer by the Private Sector

Chair: Kitisri Sukhapinda Conclusions – Session 2

Private sector:

- An effective means of delivering varieties to farmers
- Assessment of the market potential of varieties
- Link between public research and the needs of farmers
- Provides a channel for income for public sector research
- Facilitates strategic associations and coordinated technology transfer

Chair: Kitisri Sukhapinda

1. Willi Wicki , DSP
2. Barry Barker, Masstock Arable
3. Diego Risso, URUPOV
4. Evans Sikinyi, KY

International Research Centers

Chair: David Boreham Conclusions – Session 3

- PVP provides a mechanism to facilitate dissemination of varieties to farmers: open access does not ensure widespread dissemination or use
- PVP provides a system to increase availability of varieties suited to farmers' needs
- PVP provides incentives for SME's, particularly local breeders and seed distributors
- The breeders' exemption provides a mechanism to facilitate access to germplasm
- The use of PVP is consistent with the ITPGRFA and SMTA

Chair: David Boreham

1. Lloyd Le Page, CGIAR
2. Ruaraidh Sackville Hamilton, IRRI
3. Ian Barker, Syngenta

OVERVIEW

- Membership & Chairmanship
- Recent events
- **New databases (PLUTO & UPOV Lex)**
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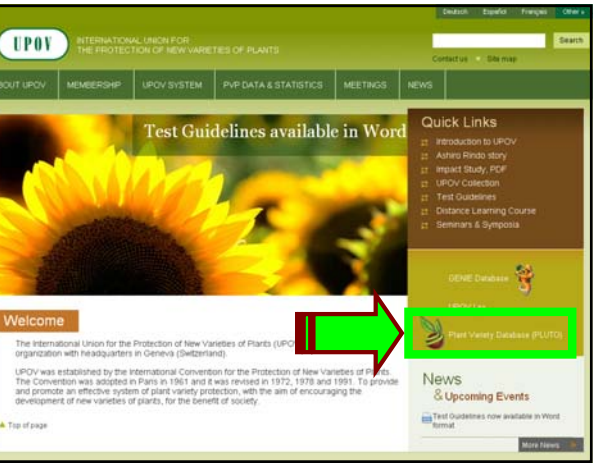

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CONSULTATIVE COMMITTEE

- The Consultative Committee approved the assistance of the Office of the Union to the **International Treaty on Genetic Resources for Food and Agriculture (ITPGRFA)** in explaining the content and search options in the Plant Variety Database in the context of the ITPGRFA research project.

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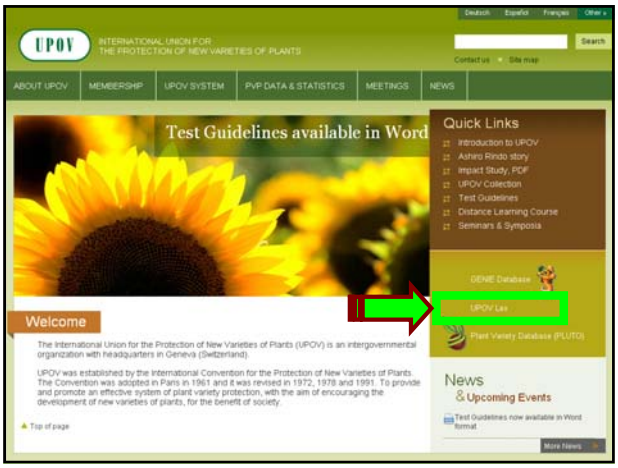

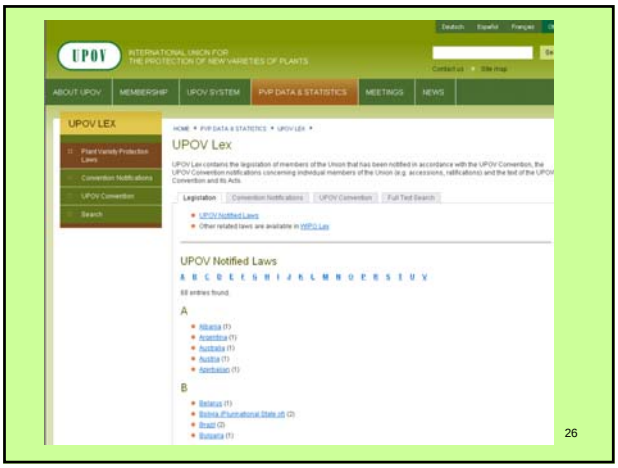

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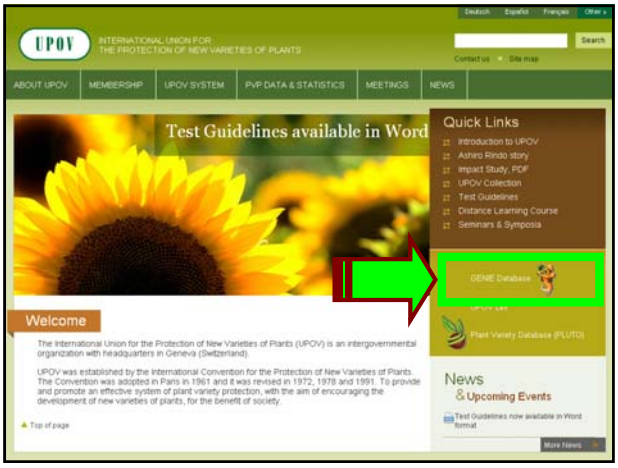

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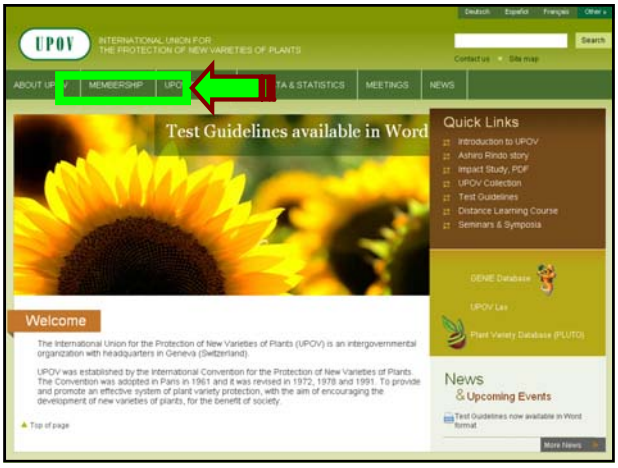

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CONSULTATIVE COMMITTEE
Observers

- Established a working group to review the **rules concerning observers** and recommend appropriate changes
- **Extended observer status** to:
  - Asia Pacific Seed Association (**APSA**): CAJ, TC, TWPs

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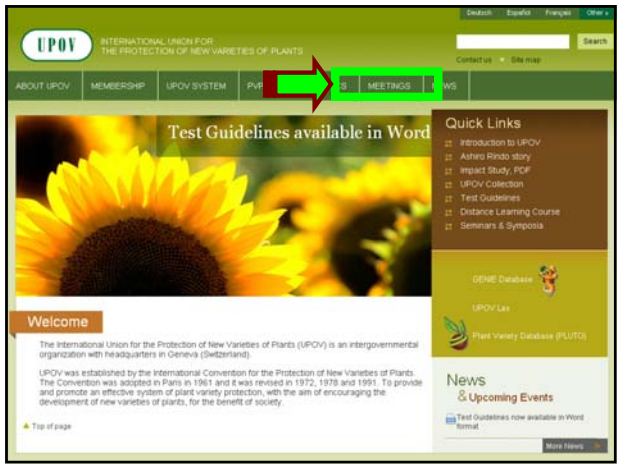

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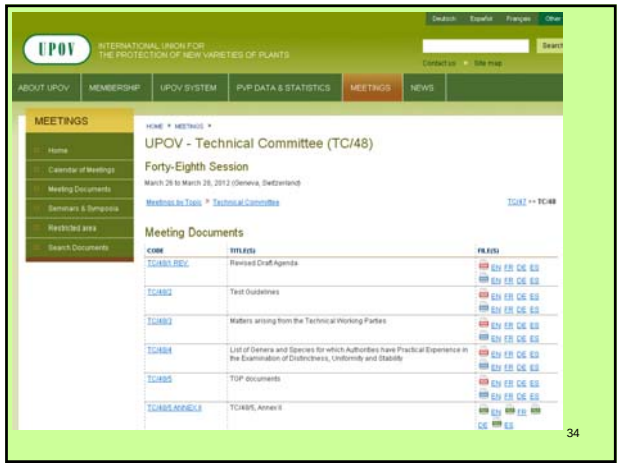

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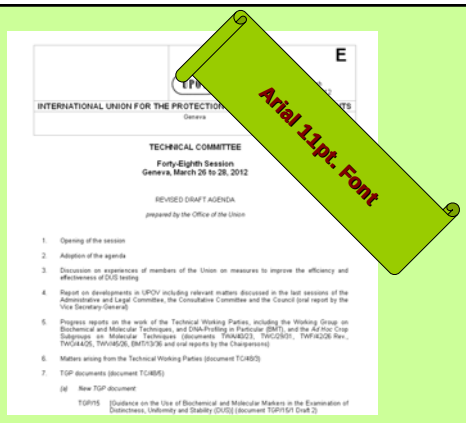
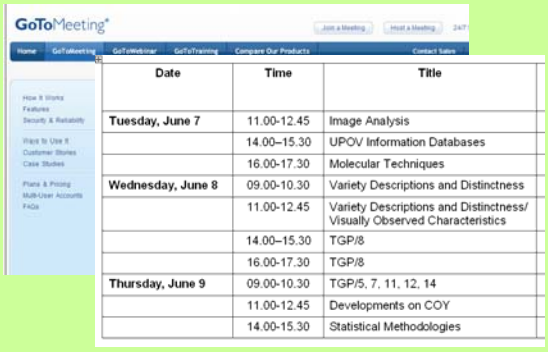


TWC Webcast



Date	Time	Title
Tuesday, June 7	11.00-12.45	Image Analysis
	14.00–15.30	UPOV Information Databases
	16.00-17.30	Molecular Techniques
Wednesday, June 8	09.00-10.30	Variety Descriptions and Distinctness
	11.00-12.45	Variety Descriptions and Distinctness/ Visually Observed Characteristics
	14.00–15.30	TGP/8
	16.00-17.30	TGP/8
Thursday, June 9	09.00-10.30	TGP/5, 7, 11, 12, 14
	11.00-12.45	Developments on COY
	14.00-15.30	Statistical Methodologies

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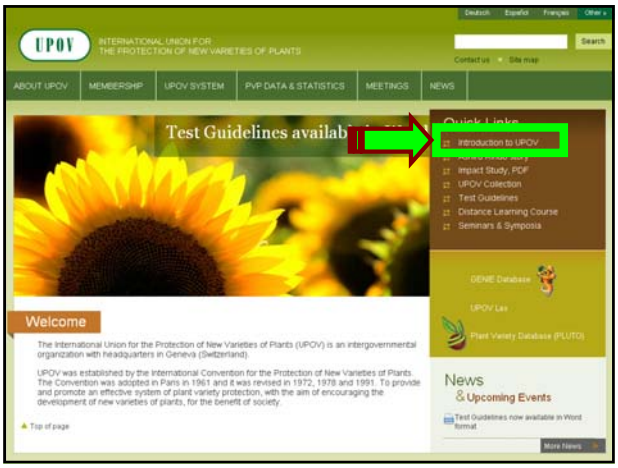
UPOV
INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
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UPOV SYSTEM
PVP DATA & STATISTICS
MEETINGS
NEWS
Test Guidelines availab
Quick Links
Introduction to UPOV
Impact Study, PDF
UPOV Collection
Test Guidelines
Distance Learning Course
Seminars & Symposia
GENIE Database
UPOV Lex
Plant Variety Database (PLUTO)
Welcome
The International Union for the Protection of New Varieties of Plants (UPOV) is an intergovernmental organization with headquarters in Geneva (Switzerland).
UPOV was established by the International Convention for the Protection of New Varieties of Plants. The Convention was adopted in Paris in 1961 and it was revised in 1972, 1978 and 1991. To provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.
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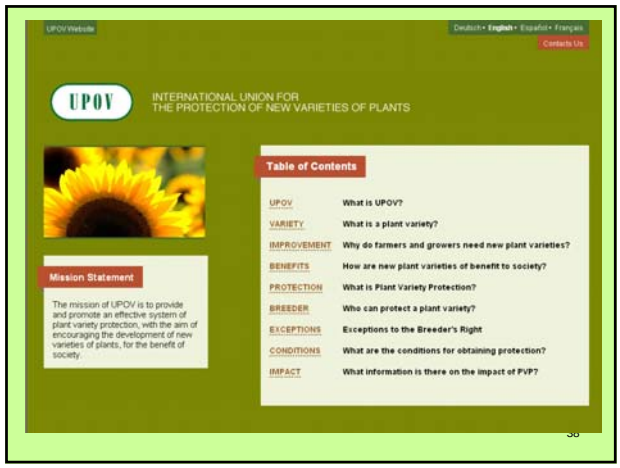
News
& Upcoming Events
Test Guidelines now available in Word format
More News


UPOV Website
Deutsch • English • Español • Français
Contacts Us
UPOV
INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
Table of Contents
UPOV What is UPOV?
VARIETY What is a plant variety?
IMPROVEMENT Why do farmers and growers need new plant varieties?
BENEFITS How are new plant varieties of benefit to society?
PROTECTION What is Plant Variety Protection?
BREEDER Who can protect a plant variety?
EXCEPTIONS Exceptions to the Breeder's Right
CONDITIONS What are the conditions for obtaining protection?
IMPACT What information is there on the impact of PVP?
Mission Statement
The mission of UPOV is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society.


Dr. Shadrack R. Moephuli (South Africa / English)
Dr. Evans Sikinyi (Kenya/ English)
Mr. Michel Cormier (Canada / English)
Dr. Stephen Mbithi Mwikya (Kenya / English)
Mr. Ruaraidh Sackville Hamilton (English)
Mr. Marcel Bruins (English)
Dr. Choi Keun-Jin (Republic of Korea / Korean)
Sra. Enriqueta Molina Macías (Mexico / Spanish)
M. Yves Lespinasse (France / French)

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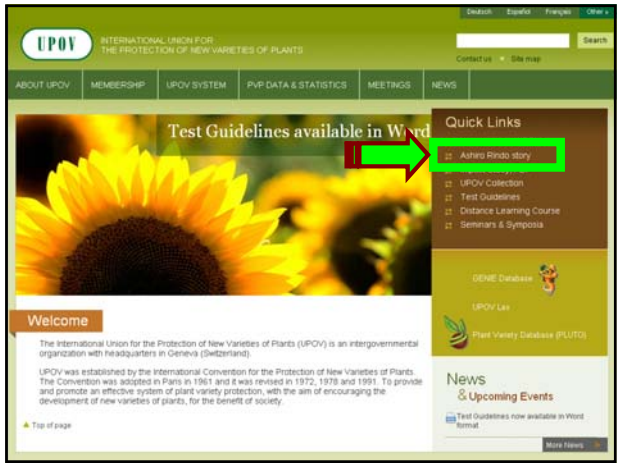
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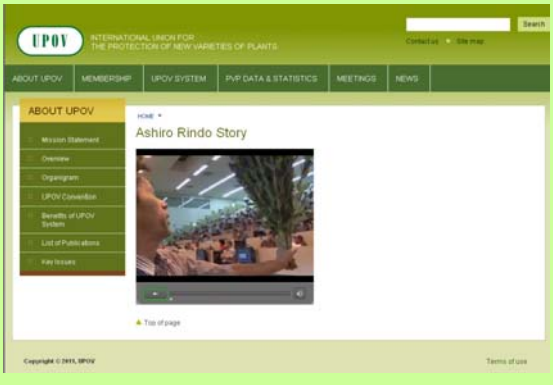
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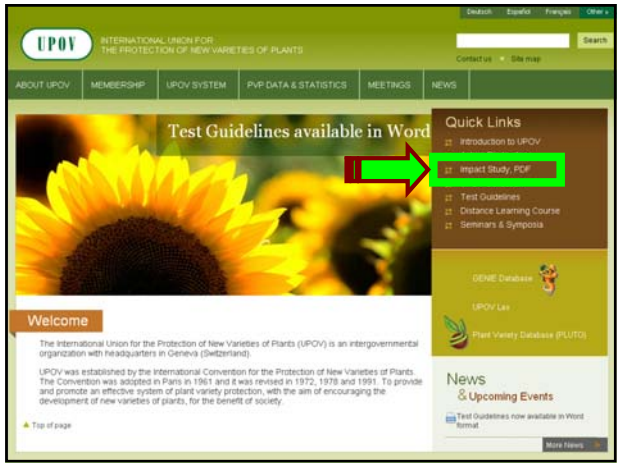
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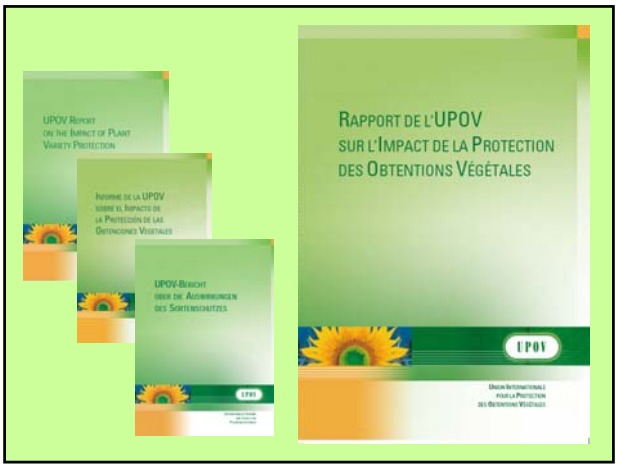
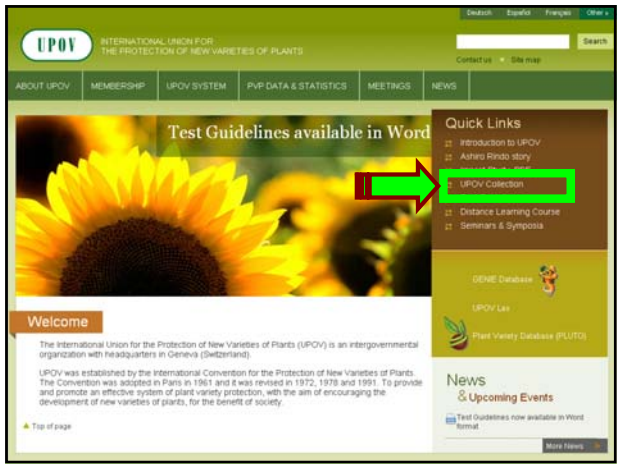
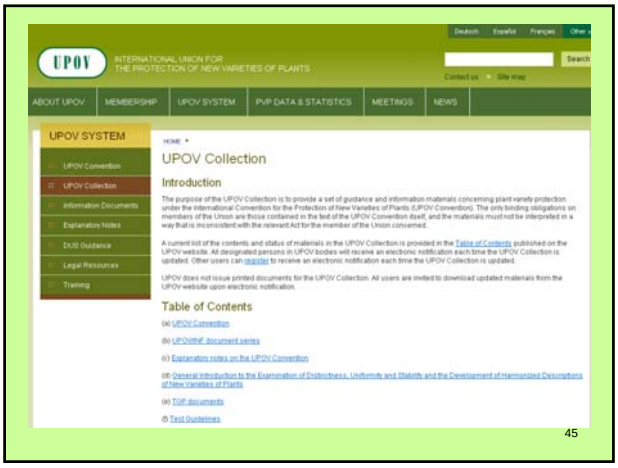
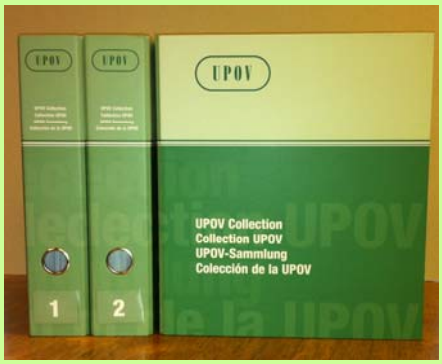






UPOV Collection: physical collection

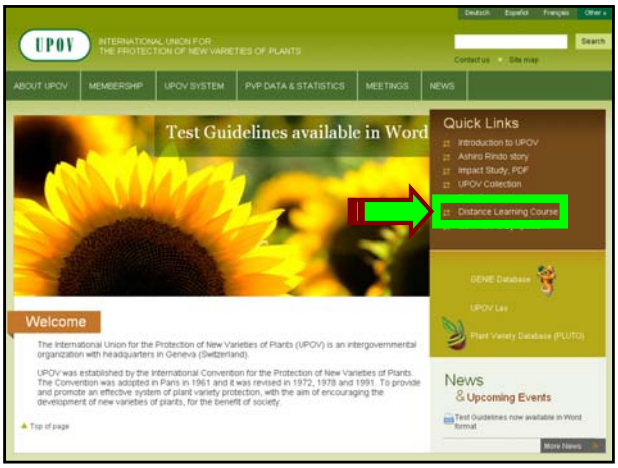


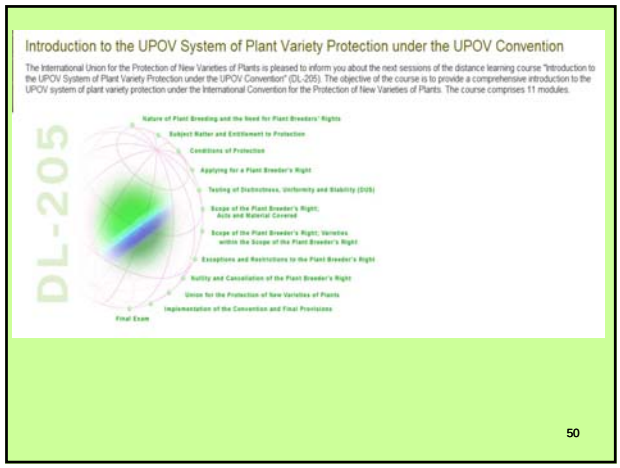
INFORMATION MATERIALS ADOPTED OCTOBER 2011

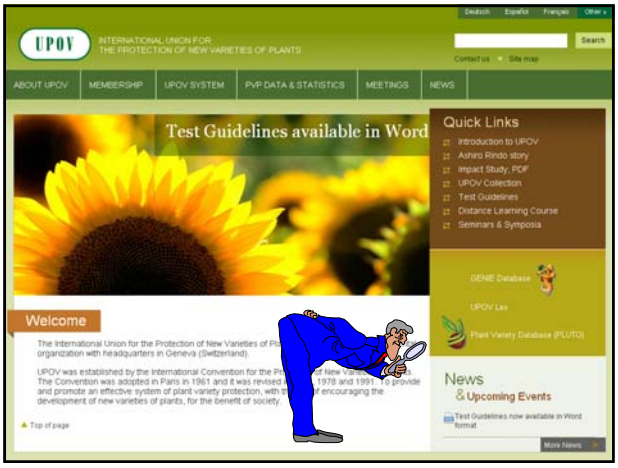
Document reference	Title
UPOV/INF/6/2	Guidance for the preparation of laws based on the 1991 Act of the UPOV Convention (Revision)
UPOV/INF/16/2	Exchangeable Software (Revision)
UPOV/INF/18/1	Possible use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)
UPOV/INF-EXN/1	List of INF-EXN Documents and Latest Issue Dates
TGP/0/4	List of TGP Documents and Latest Issue Dates
TGP/5	Experience and Cooperation in DUS Testing:
Section 10/2	*Notification of Additional Characteristics (Revision)*
TGP/7/3	Development of Test Guidelines (Revision)
TGP/11/1	Examination of Stability

INFORMATION MATERIALS UNDER DEVELOPMENT

Document reference	Status	Title	Schedule
UPOV/INF/5 (October 1979)	(Revision)	UPOV Model Plant Breeders' Rights Gazette	(CAJ/65 March 2012)
UPOV/INF/ADS	New	Alternative Dispute Settlement Mechanisms	CAJ/65 March 2012
UPOV/EXN/EDV	Revision	Essentially Derived Varieties under the 1991 Act of the UPOV Convention	CAJ-AG October 2012
UPOV/EXN/BRD	New	Definition of Breeder under the 1991 Act of the UPOV Convention	CAJ-AG October 2012
UPOV/EXN/HRV	New	Acts in Respect of Harvested Material under the 1991 Act of the UPOV Convention	CAJ-AG October 2012
	To be decided	Matters Arising after the Grant of a Breeder's Right	CAJ-AG October 2012
	To be decided	Propagation and Propagating Material	CAJ-AG October 2012







[Annex III follows]

ANNEX III

ORAL REPORTS OF THE CHAIRPERSONS OF THE TECHNICAL WORKING PARTIES

Oral Report of the Chairperson of the Technical Working Party for Agricultural Crops

TECHNICAL COMMITTEE MEETING Report Back of the TWA session in 2011

GENEVA, SWITZERLAND
MARCH 26-28, 2012

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

40TH SESSION
BRASILIA, BRAZIL
MAY 16-20, 2011

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

- **CHAIRPERSON: DIRK THEOBALD**
- **60 participants from 23 members of the Union**
- **1 Observer State**
- **2 Organizations**

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

- **Reports from the participants and the UPOV Office**
- **Molecular Techniques - TWA/40/2**

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

- **TGP documents discussed**
  - **TGP/7, TGP/8, TGP/12 AND TGP/14**

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

- **TGP/7 Development of Test Guidelines**
  - **Guidance on the number of plants to be examined (for distinctness)**
  - **Guidance for the method of observation**
  - **Providing photographs with the TQ**
  - **Quantity of plant material required**
  - **Example varieties**

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

- TGP/8: Trial Design and Techniques used in the Examination of Distinctness, Uniformity and Stability
- TGP/12: Guidance on Certain Physiological Characteristics
- TGP/14 – "Examination of the use component and composite characters for determining distinctness"

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

The following documents were also noted and discussed as follows:

- TWA/40/10 - Method of Calculation for COYU
- TWA/40/9 - Assessment of uniformity by off-types on the basis of more than one sample or sub-samples
- TWA/40/4 - Variety Denominations

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

TWA documents cont/d…

- TWA/40/5: UPOV Information Databases
- TWA/40/6: Variety Description Databases
- TWA/40/7: Exchangeable Software
- TWA/40/8: Electronic Application Systems

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

- Presentation by Mr. Edilberto D. Redoña
- Consideration of the TG for French Bean TWA/40/17
- TG for Foxtail Millet to be rediscussed at the TWA in 2012
- Four TG's to be submitted to the TC – Buckwheat, Durum Wheat, Hemp and Sesame
- TWA plan to discuss 13 TG's at TWA session in 2012

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

- 41st TWA Session - Angers, France, May 21-25, 2012
- Preparatory Workshop - May 20, 2012
- TWA thanked Mr. Dirk Theobald for his contribution as chairman of the TWA from 2009-2011

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS (TWA)

THANK YOU

Oral Report of the Chairperson of the Technical Working Party on Automation and Computer Programs

TWC 29

- Geneva June 7 - 10, 2011
- Chairman Gerie van der Heijden (the Netherlands)
- 22 participants from 16 members of the Union
- Preparatory workshop on June 6, attended by 13 participants from 10 members of the Union
- 25 participants from 10 members of the Union participated by webcast
- 32 documents discussed

TGP/8 Rev. IMAGE ANALYSIS

-Four softwares and hardware solutions used in the image analysis were presented

-Aim of image analysis is to save costs and to improve quality in DUS testing

-Image analysis may have potential for reference collection management

-Image analysis was decided to take as a regular issue in the agenda of the TWC

3
Sami Markkanen/TC 26-28.3.2012

Evira

TGP/8 Rev. METHODS FOR DATA PROCESSING

-Different ways to transform measurements (MS/MG) into notes
- adjusted means transformed into notes
- linear regression used
- example varieties, equal spaced states
- use of DUSTNT program

-Discussion continues to summarize principles of different methods for general guidance and recommendations

4
Sami Markkanen/TC 26-28.3.2012

Evira

TGP/8 Rev. STATISTICAL METHODS FOR VISUALLY OBSERVED CHARACTERISTICS

-Methods are tests for difference in distribution, both location and dispersion

-Methods are made only for the distinctness analysis, not for uniformity

-Differences in uniformity should not lead to the positive decision on distinctness

5
Sami Markkanen/TC 26-28.3.2012

Evira

TGP/8 Rev. DEVELOPMENT OF COY

Cyclic Planting of Established Varieties to Reduce Trial Size
- a new section on the reduction of trials, would be included in TGP/8 Part I

An Adjustment to the COYD Method When Varieties are grouped Within the DUS Trial
- the text should be included in TGP/8 Part II

Development of COYU: Analysis of the Relation Between Log SD and Mean of Varieties
- the TWC agreed that a new document based on the cubic spline model should be prepared for the next session of the TWC.

6
Sami Markkanen/TC 26-28.3.2012

Evira

VARIETY DESCRIPTION DATABASES

Gemma: A Technical Website to Share DUS Data
-possibility to store phenotypic and molecular data and digital pictures in “Gemma”, for the management of reference collections

EXCHANGEABLE SOFTWARE

Bionumerics Software for Databasing and Data Analysis
-should be included in the exchangeable software for biochemical and molecular data

Evira

NEXT SESSION TWC 30

Chisinau, Republic of Moldova
-June 26 - 29, 2012
-Preparatory workshop on June 25.

Evira

Evira

Oral Report of the Chairperson of the Technical Working Party for Fruit Crops

Technical Working Party for Fruit Crops (TWF)

42nd session, Hiroshima, Japan
14-18th November 2011

Technical Working Party for Fruit Crops

- Chair: Mrs Bronislava Bátorová
- 50 participants from 17 members of the Union.
- 4 observer states
- 1 observer organization

Technical Working Party for Fruit Crops

TGP/7

- The TWF noted summary of revisions proposed as set out in document TWF/42/11:
- Example varieties.
- Providing photographs with the Technical Questionnaire.
- Quantity of plant material required.
- Guidance for method of observation.
- Guidance on the number of plants to be examined.
- The TWF agreed that Mr Erik Schulte, Germany, be invited to participate in the developments of guidance on # of plants to be examined.

Technical Working Party for Fruit Crops

TGP/8

- The TWF considered TWF/42/14.
- *Annex I* recommended for inclusion in TGP/8.
- *Annex II* to *Annex XIV* discussed and recommendations and comments made.

Technical Working Party for Fruit Crops

TGP/12

- The TWF agreed with the proposal for explanations for disease resistance characteristics in Test Guidelines and nomenclature of pathogens (Annex to document TWF/42/15)
- The TWF agreed no pressing need to adopt further disease resistance testing at this time.

Technical Working Party for Fruit Crops

TGP/14

- The TWF considered documents TWF/42/3, Annexes 1 & 2 and TWF/42/16.
- Was noted that Table 1.2 (Characteristics : ratio length/width) contained in Annex 1 to document TWF/42/3 should be updated to reflect the order of states as indicated in TGP/14.

Technical Working Party for Fruit Crops

Variety Denominations

The TWF noted the report on developments in variety denominations provided in document TWF/42/4

Technical Working Party for Fruit Crops

- **Proposals for Partial Revision: Mandarins**
- The TWF discussed documents TWF 42/19 and TWF/42/19 Add, in particular the proposal for a new characteristic after existing characteristic 98.
- Experts from Morocco requested that the methodology of controlled manual cross-pollination be clarified, and made specific reference to the requirements in document TG/1/3: Section 4.2.1., before any such characteristic could be introduced.

Technical Working Party for Fruit Crops

- The TWF discussed the proposed mandarin partial revision and agreed that further studies were necessary to test the methodology and also agreed that the wording of the Characteristic might need to be reviewed.
- The TWF agreed to form a subgroup in which Morocco, South Africa and Spain would participate, furthermore the TWF requested Mr. Jean Maison, European Union, to coordinate the work of the subgroup.

Technical Working Party for Fruit Crops

- **Test Guidelines**
- The TWF agreed that the following draft Test Guidelines should be sent to the TC for adoption at its 48th session: Actinida (*Actinidia* Lindl.), Blue Honeysuckle, Honeyberry (*Lonicera caerulea* L.), Papaya (*Carica papaya* L.), Pineapple (*Ananas comosus* L. Merr.), and the Partial Revision for Strawberry.
- The TWF agreed to discuss 11 Test Guidelines at its 43rd session.

Technical Working Party for Fruit Crops

- **Forty-Third session of the TWF**
- At the invitation of the expert from China, the TWF agreed to hold its 43rd session in Beijing, China, from July 30 to August 3, 2012, with preparatory workshop on July 29.
- The TWF thanked Mrs. Bátorová for her chairmanship during the last three years.

Oral Report of the Chairperson of the Technical Working Party for Ornamental Plants and Forest Trees

Chair: Ms. Andrea Menne (Germany)

Held in Fukuyama City, Hiroshima Prefecture, Japan 7th to 11th November 2011, with a preparatory workshop on 6th November.

Technical Visit to the Nishi-Nihon Station, National Center for Seeds and Seedlings (NCSS), on Wednesday 9th November.

Nik Hulse Report TWO 2011 2

The meeting was attended by 67 participants from 16 members of the Union, six observer countries and one organisation.

The preparatory workshop was attended by 34 participants.

Nik Hulse Report TWO 2011 3

The TWO was welcomed by Mr. Jyunya ENDO, Director, New Business and Intellectual property Division, Food Industry Affairs bureau, Ministry of Agriculture, Forestry and Fisheries.

Mr. Endo made a presentation on the plant variety protection system in Japan.

Nik Hulse Report TWO 2011 4

Many documents were discussed, including 20 Test Guidelines

Although all of the discussions were important only a few of the key points are presented here.

Nik Hulse Report TWO 2011 5

Document TWO/44/11 Annex I "Minimum number of plants"

The TWO agreed that consideration should be given to providing guidance to explain when the number of plants in TG's can be considered to be a minimum number rather than a specific number.

- in some cases (eg cross-pollinated species) there is a possibility of different decisions on distinctness if different numbers are used.

It further suggested that guidance be developed on the number of plants in a DUS trial required for

- examining distinctness
- determining typical expression of a variety of common knowledge
- establishing a variety description.

Nik Hulse Report TWO 2011 6

Document TWO/44/18 “Example Varieties ”

The TWO noted that example varieties could provide the basis for useful international harmonization of variety descriptions for ornamental varieties.

- indicated by the model study for Petunia (document TWO/37/8) where it had been seen that there was a high level of consistency for the states of expression across varieties.

Document TWO/44/3 Annex II

The TWO considered document TWO/44/3 Annex II concerning component and composite characteristics and endorsed the overall observations and related considerations. It noted that each case would need to be considered on its merits.

It also considered that states for ratios such as “high” or “low” should be possible provided explanations and illustrations are included to avoid confusion. In addition it agreed to the possibility of using states such as “elongated” and compressed” for characteristics worded as shapes, rather than ratios.

TWO/44/16 “Revision of Document TGP/14: New Section for Color Characteristics”

The TWO considered the document and agreed to the need for further explanation on the three elements of color (hue, saturation, brightness) and the precision of color determinations.

Precision will vary according to circumstances and the states will reflect the level required.

For example: yellowish orange vs RHS Colour Chart Reference.

TWO/44/16 “Revision of Document TGP/14: New Section for Color Characteristics” (cont.)

The TWO further agreed to amend and clarify a number of terms used to describe colors and color patterns. These included:

-main color/secondary color
- ground color
- conspicuousness.

A number of other terms in color distribution and color patterns were also considered and suggestions made for review or amendment.

Document TWO/44/4 “Variety Denominations”

The TWO noted the report on variety denominations and agreed to the creation of a new denomination class in document UPOV/INF/12/3 to cover Eupatorium, Eutrochium and Ageratina.

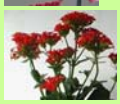


The TWO agreed to submit seven Test Guidelines to the TC in 2012.

New TG’s:
Canna
Echinacea
Heuchera and Heucherella
Oncidium
Tree Peony




Revisions:
Kalanchoe
New Guinea Impatiens.

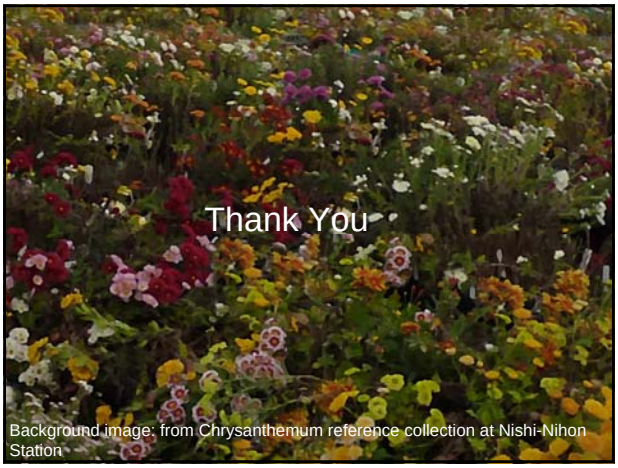



TWO 45th Session

At the invitation of the expert from the Republic of Korea, the TWO agreed to hold its forty-fifth session in Seoul, from August 6 to 10, 2012.

The meeting is to be chaired by Mr Nik Hulse (Australia).

At its forty-fifth session, the TWO plans to discuss 18 Test Guidelines, consisting of four revisions and 14 new Test Guidelines.



Oral Report of the Chairperson of the Technical Working Party for Vegetables

TWV/45
July 25 – 29, 2011

. Monterey (California – USA),
. Chairperson: Mrs. Radmila Safarikova,
. Number of participants: 27 from 13 countries,
. Preparatory workshop: 14 participants,
. Welcomed by Ms. Kitisri Sukhapinda (USPTO) and Mr. Paul M. Zankowski (USDA),
. Report: TWV/45/26.

TWV/45
July 25 – 29, 2011

. Reports on developments in Plant Variety Protection,
. Molecular techniques,
. TGP documents,
. Discussion on draft Test Guidelines : Cassava, Echinacea, Endive, French bean, Tomato rootstocks, Parsnip, Pea, Pleurotus, Seed Poppy, Raphanus sativus, Shitake, Tomato, Watermelon

TWV/45
July 25 – 29, 2011

During this meeting, the TWV received a presentation on :

. The intellectual property systems for the protection of plants in the United States of America,

. An explanation of the operation of the Plant Variety Protection Act.

TWV/45
July 25 – 29, 2011

On the afternoon of July 27, the TWV

- visited an iceberg lettuce field site in Spreckels,
- received a presentation on genetic diversity and breeding program of lettuce in the United States, (USDA),
- visited the TAKII Seed facilities in Salinas.

TWV/45
July 25 – 29, 2011

Test Guidelines to discuss at the 46th session :

Cassava, Coriander, Chives (Revision), Lagenaria ciceraria, Lettuce, (Partial revision), Leaf chicory (Revision), Pea, (Partial revision : grouping characteristics), Pleurotus, Spinach (Partial revision), Watermelon (Revision).

TWV/45
July 25 – 29, 2011

Date and place of the 46th session : near the city of Venlo (NL), June 11 to 15, 2012, with a preparatory workshop on the Sunday, June 10, 2012.

Mrs. Radmila Safarikova was awarded a UPOV bronze medal in recognition of her chairmanship of the TWV from 2009 to 2011.

TWV/45
July 25 – 29, 2011

UPOV and USPTO
Technical Working Party For Vegetables
Forty-Fifth Session
Monterey, California
July 25-29, 2011

Oral Report of the Chairman of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular

Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)

Alejandro F. Barrientos Priego
Mexico

Geneva
March 2012

The thirteenth session of the UPOV BMT was held in Brasilia, Brazil, from November 22 to 24, 2011, with a preparatory workshop on November 21, 2011. The meeting was chaired by Mr. Andrew Mitchell (United Kingdom).

The BMT was attended by 51 participants, from 14 members of the Union and four observer organizations.

The meeting was welcomed by Mr. Hélicio Campos Botelho, Director of the Department of Intellectual Property Rights, Ministry of Agriculture, Livestock and Food Supply.

A presentation of the PVP system of Brazil was received by Mrs. Daniela de Moraes Aviani, Coordinator of the National Plant Variety Protection Service, Ministry of Agriculture, Livestock and Food Supply.

The main items on the agenda were:

- **Developments in UPOV concerning biochemical and molecular techniques;**
- **Use of molecular techniques in examining essential derivation;**
- **Use of molecular techniques in variety identification;**
- **Work of the *Ad Hoc* Crop Subgroups on molecular techniques;**
- **New developments in biochemical and molecular techniques;**
- **Work on molecular techniques on a crop-by-crop basis;**
- **International guidelines on molecular methodologies;**
- **Variety Description Databases;**
- **Methods for analysis of molecular data;**
- **Recommendations on the establishment of new crop specific subgroups.**

The Office of the Union reported on developments in UPOV, based on document BMT/13/2 "Reports on developments in UPOV concerning biochemical and molecular techniques".

The BMT also considered how document TGP/15 should be developed and agreed that it should be developed separately and in parallel to BMT/DUS. It was agreed that TGP/15 would provide guidance for the use of those models which had received a positive assessment and for which accepted examples could be provided.

Use of molecular techniques in examining essential derivation

The BMT received three papers on essential derivation, the first one in the use of SNPs to have High-density fingerprinting and Line-Specific-Recombination Haplotypes as tools to detect suspected derivation from inbred lines. The second presentation was on a case of EDV court dispute where SSRs markers were used. The third presentation considered the use of SSRs markers to determine EDV coming from backcrossing.

Use of molecular techniques in variety identification

The BMT received 13 papers on the use of molecular markers for variety identification. This covered a wide range of species, including rose, rice, soybean, wheat, gypsophila, sugarcane and maize, and also a method for molecular data analysis in variety characterization.

Reports on the work of the Ad Hoc Crop Subgroups on molecular techniques

The BMT noted the report on planned meetings of the Crop Subgroups as set out in document BMT/13/2, paragraph 18.

Short presentations on new developments in biochemical and molecular techniques by DUS experts, biochemical and molecular specialists, plant breeders and relevant international organizations

The BMT noted the information on new developments in biochemical and molecular techniques from members and observers provided in document BMT/13/30.

Report of work on molecular techniques on a crop-by-crop basis

The BMT received three presentations for vegetatively propagated crops: potato, peach and a general one. For the case of self-pollinated crops four presentations were given for barley, lettuce, soybean and a general paper. Presentations on cross-pollinated crops were received on oilseed rape and *Brachiaria*.

International Guidelines on Molecular Methodologies

The BMT discussed the possibility for the BMT to have a joint meeting on harmonization in molecular markers for variety identification with the International Seed Testing Association (ISTA), and possibly also with the International Organization for Standardization (ISO) and the Organization for Economic Co-operation and Development (OECD), taking advantage of the next meeting of the BMT.

Variety description databases

The BMT received presentations on GEMMA: a technical website to share DUS data and on molecular database for soybean variety identification.

Methods for analysis of molecular data

The BMT received a presentation on BioNumerica: A universal platform for databasing and analysis of biological data.

Recommendations on the establishment of new crop specific subgroups

The BMT proposed that the TC consider discontinuing the meetings of the *Ad-hoc* crop sub-groups and to have discussion on the individual species within the BMT sessions.

The BMT took note of the report from the Office of the Union that contact had been made between UPOV and ISTA to explore the possibility of a coordinated meeting of the BMT and the Working Group on DNA Methods of the Variety Committee of ISTA for venue the fourteenth session of the BMT in 2013.

Mr. Andrew Mitchell was awarded a UPOV bronze medal in recognition of his chairmanship of the BMT from 2009 to 2011.

[Annex IV follows]

ANNEX IV

AMENDMENTS TO THE DRAFT TEST GUIDELINES
PRIOR TO THEIR ADOPTION AT THE FORTY-EIGHTH SESSION OF
THE TECHNICAL COMMITTEE (TC)

Document TC/48/17 Partial Revisions of Test Guidelines

Test Guidelines for French Bean (TG/12/9)

Proposed new char. 50	to be indicated as PQ *Agreed by TWV and TWA by correspondence*

1. NEW TEST GUIDELINES

Blue Honeyberry (*Lonicera caerulea* L.)	TG/LONIC(proj.4)

(a) Changes to document TG/LONIC(proj.3), proposed by the Enlarged Editorial Committee at its meeting on January 11 and 12, 2012, which are already incorporated in the draft Test Guidelines TG/LONIC(proj.4), submitted to the TC:

Alternative names	to add Spanish name “Madreselva Azul” *Leading Expert agreed*
5.3 (d)	char. 36 instead of char. 30 *Leading Expert agreed*
Chars. 11, 12, 13, 23, 24	to check with Leading Expert whether to be indicated as VG/MS and (d) *Leading Expert agreed*
Chars. 20, 21, 24	to add explanation or example varieties *Leading Expert provided new drawings for chars. 20 and 21 and provided example varieties for char. 24*
Char. 28	to check with Leading Expert whether to be indicated as VG and (d) *Leading Expert agreed*
Char. 30	state (2) to read “medium” instead of “intermediate” *Leading Expert agreed*
Char. 32	to add example varieties *Leading Expert provided example varieties*
8.1 (b)	to be deleted *Leading Expert agreed*
Ad. 34 and 35	to be reconsidered (10% of 5 plants?) *Leading Expert provided new wording for both Ads. Both chars. are indicated as MG, so it is not 10% of 5 plants, but 10% of all flowers in the plot, which consists of 5 plants.*

(b) Changes proposed by the TC-EDC in March 2012, which are to be included in the Test Guidelines submitted to the TC:

Char. 24	to delete example varieties for state (1): “Nimfa”, “Sinaja ptica” state (3): “Lipnická”, “Mailon”, “Tomička”, “Zoluska”
Char. 26	to read "Fruit: shape in lateral view"
Char. 32	to delete example varieties for state (1): “Bakcarskaja”, “Gerda”, “Nimfa”; state (5): “Tomička”, “Viola”
8.1	See (b) in proj. 3. It was not intended to delete (b) but only to correct it as follows: "(b) All observations on the leaf should be made at the stage of fully developed leaves at fruit maturity on the upper third of typical one-year-old shoots."
Ad. 25	to be presented without table
9.	to add “František Paprštein a kol., 2009: Technologie pěstování zimolezu (*Lonicera* sp..), Výzkumný a šlechtitelský ústav ovocnářský Holovousy s.r.o., Mendelova zemědělská a lesnická univerzita v Brně, Výzkumný ústav rostlinné výroby v.v.i. Praha Ruzyně, p. 36, CZ“

Buckwheat (*Fagopyrum esculentum* Moench)	TG/FAGOP(proj.7)

Changes to document TG/FAGOP(PROJ.6), proposed by the Enlarged Editorial Committee at its meeting on January 11 and 12, 2012, which are already incorporated in the draft Test Guidelines TG/FAGOP(PROJ.7), submitted to the TC:

General remark	to check with Leading Expert whether "fruit" can be changed to "seed" throughout the whole document, put "fruit" in brackets after "seed"? *Leading Expert: to use "seed"*
Alternative names	to add Spanish name "Trigo sarranceno" *Leading Expert agreed*
2.3	last sentence: to delete comma after "should"
Char. 1	to delete (+) and Ad. 1 *Leading Expert agreed*
Char. 6	to have states (1) determinate and (2) indeterminate *Leading Expert agreed*
Char. 8	to review order of states to have states (1) truncate, (2) weakly cordate, (3) strongly cordate, (4) sagittate *Leading Expert agreed*
Char. 11	to change order between "white" and "light green" according to the TGP/14 2.4.2 „Order of states of expression". *Leading Expert agreed*
Char. 12, Ad. 12	to read "Flower: length of pedicel" (according to Ad. 12 it is a pedicel and not a peduncle) *Leading Expert agreed*
Ad. 6 and 13	to be combined *Leading Expert agreed*
Ad. 7	first sentence to be deleted (as agreed by the TWA 2011)
Ad. 8, 12	to update according to char. 8 and 12 *Leading Expert agreed*
8.3	to add before table: "The growth stages are adapted from the BBCH scale (Meyer, 1997) as follows:"
9.	to add publication Meyer, 1997.

Canna (*Canna* L.)	TG/CANNA(proj.10)

(a) Changes to document TG/CANNA(proj.9), proposed by the Enlarged Editorial Committee at its meeting on January 11 and 12, 2012, which are already incorporated in the draft Test Guidelines TG/CANNA(proj.10), submitted to the TC:

2.3	to read "8 young plants or 8 rhizomes." *Leading Expert agreed*
Char. 5	to add a space to read "Leaf blade: glossiness"
Chars. 8, 9	to correct spelling of ex. variety Cléopatre to "Cleopatra" *Leading Expert agreed*
Char. 19, Ad. 19	to read "Staminode: ground color of blotches"
Ad. 9	to add note (3) Leading Expert to add an explanation to explain differences between states (2) and (3) *Leading Expert: to add example variety "Stuttgart" for state (3)*
Ad. 17	to add arrows to photographs and to add state of expression for which the photograph stands
Ad. 18	to add arrows to show flames (red part) to both photographs and to add state of expression for which the photograph stands
Ad. 19	to add arrows to indicate the blotches and to add state of expression for which the photograph stands
Ad. 20	to add arrows to indicate marginal zone and to add state of expression for which the photograph stands
Ad. 21	to change 10 % to 50 % (according to TWO report)

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

Chars. 3, 4	to be indicated as MS
Char. 9	to combine states (2) and (3) in one state "marbled" with note (2) and example varieties "Stuttgart" and "Cleopatra"; to be indicated as QL
Ad. 9	keep both pictures of states (2) and (3) for new state (2) "marbled"

Echinacea (*Echinacea* Moench)	TG/ECNCE(proj.6)

(a) Changes to document TG/ECNCE(proj.5), proposed by the Enlarged Editorial Committee at its meeting on January 11 and 12, 2012, which are already incorporated in the draft Test Guidelines TG/ECNCE(proj.6), submitted to the TC:

Alternative names	to add Spanish name "Equinácea" *Leading Expert agrees*
4.1.5	to delete quotation mark at the end of before last paragraph
4.2	to delete headings (a) and (b) paragraph on cross-pollinated varieties to read: "The assessment of uniformity of seed-propagated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction." *Leading Expert agrees* *Office added numbering instead of headings*
Char. 3	state (7): According to Ad. 3 state 7 looks more like a state 9 or 8. To consider to change the photo. *Leading Expert agrees that the photograph for 7 does look more like state 9 and provided a new photograph for state 7*
Chars. 7, 8, 9, 20, 21, 22, 27, 28, 29, 40 to 45, 53, 54	to delete MG *Leading Expert agrees*
Char. 16	to replace breeder's reference by ex. variety "Pineapple Sundae" (check spelling) *Leading Expert: agrees, spelling is correct*
Chars. 24, 25, 26	to add an explanation to what "relative" relates *Leading Expert provided explanation for Ad. 24, 25 and 26*
Char. 33	to be indicated as PQ *Leading Expert agreed*
Chars. 34, 35	to be indicated as QN *Leading Expert agreed*
Char. 35	to check scale and add ex. varieties *Leading Expert: to remove state 5 "very strong". Cannot provide another example variety – there is a variety with quite strong twisting but we have not grown it, and so cannot confirm which state it would fall into.*
Char. 51	to read "Only varieties with disc type: daisy: Disc: presence of ray florets within the disc" *Leading Expert agreed*
Char. 52	to read : "Only varieties with disc type: daisy: with ray florets within the disc: Disc: number of ray florets within the disc" *Leading Expert agreed*
Ad. 44	to correct title
Ad. 47, 48	to be checked *Leading Expert provided combined Ad. 47, 48*
Ad. 52	to be added from proj. 4 *Leading Expert provided corrected Ad. 51 and Ad. 52*
Ad. 55	to correct spelling of "reflexed"
9.	to check the number of pages and the form of citations

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

Char. 45	to underline the first part of the characteristic up to the end of the word 'anemone'
Ad. 56	Illustration for (3) should be improved, otherwise (1) would hardly be possible.

Hemp (*Cannabis sativa* L.)	TG/CAN_SAT(proj.6)

(a) Changes to document TG/CAN_SAT(proj.5), proposed by the Enlarged Editorial Committee at its meeting on January 11 and 12, 2012, which are already incorporated in the draft Test Guidelines TG/CAN_SAT(proj.6), submitted to the TC:

General remark	to check format of numbers (e. g. 0.22 instead of 0,22) *Leading Expert agreed*
Char. 4	to delete state (9) – no example varieties *Leading Expert agreed*
Char. 7	English to read "Leaf" instead of "Hoja"
Ad. 11	stamiate = male pistillate = female It is sufficient to have "male flowers" and "female flowers"; "staminate" and "pistillate" should be deleted (alternatively, to delete male and female). to read "Monoecious varieties: 50% of all plants with first male flower open. Other varieties: 50% of all male plants with first male flower open. First male flowers mostly appear from the axils of the leaves on the main stem. Male flowers usually appear about 2 weeks before the styles of female flowers are visible." *Leading Expert agreed to delete "staminate" and "pistillate"*
Ad. 13	under "4. *Gas chromatography"* to check with Leading Expert whether "25 m" is correct (2.5m?) *Leading Expert: 25 m is correct*
Ad. 14, 15, 16	table of proportions note (1) to read "<= 5 %", note (5) to read ">= 96 %" to add to sentence under table "…vegetatively propagated varieties (numbers are rounded to whole numbers)." *Leading Expert agreed*
Ad. 22	sentence to be deleted, see 8.1 (c). *Leading Expert agreed*

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

TQ 9.3	to be deleted

Heuchera and Heucherella (*Heuchera* L.; x*Heucherella* H. R. Wehrh.)	TG/HEUCH(proj.6)

(a) Changes to document TG/HEUCH(proj.5), made on the basis of comments received from members of the Enlarged Editorial Committee in January 2012, which are already incorporated in the draft Test Guidelines (document TG/HEUCH(proj.6)), submitted to the TC:

Botanical names	to read "x*Heucherella* H. R. Wehrh., *Heuchera* x *Tiarella"*
Alternative names	to add Spanish name "Coralito" and "Flor de Coral"
1.	to add a space: "These Test Guidelines apply to all varieties of *Heuchera* L. and x *Heucherella* H. R. Wehrh.."
4.1.5	to delete quotation mark at the end of before last paragraph
Char. 32	to have notes (1), (3), (5), (7)

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

Box on cover page	- to add French common name: “Heucherella” - to add German common name: “Bastardschaum” - to add botanical name as common name in Spanish
Chars. 23, 24, 25	to replace MG by MS
Chars. 56, 57, 58	to replace MG by MS
Chars. 62, 63	to replace MG by MS
Ad. 62, 63, 64	to move text and diagram on one page

Oncidium (*Oncidium* Sw.)	TG/ONCID(proj.6)

(a) Changes to document TG/ONCID(proj.5), made on the basis of comments received from members of the Enlarged Editorial Committee in January 2012, which are already incorporated in the draft Test Guidelines (document TG/ONCID(proj.6)), submitted to the TC:

Alternative names	to add Spanish name “Dama Danzante” *Leading Expert agreed*
4.1.5	to delete quotation mark at the end of before last paragraph
Char. 29	to have states (1), (3), (5), (7), (9)
Chars. 37, 57, 77 of (proj.4)	to add “(if present)”
Chars. 65, 66 of (proj.4)	to be indicated as VG/MG
Char. 75 of (proj.4)	to read “Petal: size of spots (if present)” and to delete “absent or” in state (1)
Char. 83 of (proj.4)	to read “Petal: size of macule (if present)” and to delete “absent or” in state (1)
Chars. 95, 96, 98, 99 of (proj.4)	to be deleted
Chars. 105, 106, 107, 108 of (proj.4)	to be deleted
Ad. General remark	to delete spaces before colon in titles of ads.
Ad. 31, 51, 71, 92, 97	to replace current explanation with the following definition: “GROUND COLOR: The first color to appear chronologically during the development of the plant part. Other colors may develop in time in the form of spots, blotches, or a color flush or blush. The ground color is not always the color occupying the largest surface area of the plant part concerned. The ground color can be the main color of the lower side of an organ.”
Ad. 32, 52, 72, 93	to replace current explanation with the following definition: “OVER COLOR: In the case of a plant part which has a ground color upon which a second color such as a flush develops over time, the flush is considered the over color. The over color is not always the color occupying the smallest surface area of the plant part concerned.”
Ad. 37, 57, 77	to add illustration
Ad. 40, 60, 80	to add illustration
Ad. 42, 62, 82	to add illustration

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

Botanical names	last botanical name in table: to read: "x *Zelenkocidium…"*
1.	- to delete "Cochlioda Lindle., Cyrtochilum" - some botanical names should be changed to Italic.
2.2	to read "The material is to be supplied in the form of plants with a developing inflorescence that have not previously flowered."
General remark T.o.C.	to review denomination of example varieties
Char. 5, Ad. 5	to have states (1) "very narrow oblate", (2) "narrow oblate", (3) "oblate", (4) "circular"
Chars. 6, 7, 8, 9, 14, 15, 16, 17, 18, 22, 25, 26	to be indicated as VG/MS
Char. 46	state (4) to read "medium obovate"
Char. 34, 35, 37, 38, 39, 41, 42, 43, 52, 54, 55, 57, 58, 59, 61, 62, 63, 72, 74, 75, 77, 78, 79, 81, 82, 83, 93, 94, 95, 96	to delete "if present" if there is a preceding characteristic
Char. 44, 45, 64, 65	to be indicated as VG/MS
Char. 88 to 97	to read "Apical lobe of lip: …" (e.g. "Apical lobe of lip: shape")
Char. 98	to read: "Lip: color of callus"
Ad. 15	to delete extra colon before "inflorescence"
Ad. 27, 46 and 66	to add legend on both sides of grid as stated in TGP/14
Ad. 46	to put state (4) and (6) together in the grid
Ad. 71	to correct name of Ad.
8.3	to be deleted
TQ 1	to add a section "Others"

Pineapple (*Ananas comosus* (L.) Merr.)	TG/PINEAP(proj.9)

The TC-EDC recommended that the draft Test Guidelines for Pineapple should be referred back to the TWF in order to resolve technical issues as presented in the comments by the TC-EDC.

(a) Changes to document TG/PINEAP(proj.8) made on the basis of comments received from members of the Enlarged Editorial Committee in January 2012, which are already incorporated in the draft Test Guidelines (document TG/PINEAP(proj.9)), submitted to the TC:

1.	to correct 2nd sentence: "The characteristics in these Test Guidelines…"
3.3.2	to correct reference to chapter 8.3 (instead of 8.4)
5.4	to read "…document TGP/9 "Examining Distinctness"
Before char. 10	The line that divides the characteristic is missing.
Char. 10	to change the title of the char. to „ Only varieties with spines visible: Leaf: density of spines" and the same for the char. 12 and 13 to include the type of char. and method of observation *Leading Expert: to be indicated as QN, VS, 1-7, (a)*
Chars. 12, 13	see char. 10
Char. 19	state (5) to read "red" instead of "medium red" *Leading Expert agreed*
Char. 24	to read "Plant: number of aerial suckers on stem (cloves)"
Char. 25	to read "Plant: size of aerial suckers on stem (cloves)"

Char. 27	to indicate type of char. and method of observation *Leading Expert: to be indicated as QN, VG/MS, (e)*
Char. 28	to read “Crown: number” (to delete “with states”)
Char. 42	to delete (+)
8.1 (c), (d), (e)	to delete colon after brackets “(Characteristics…)÷ ”
8.2	to correct spaces in the list of synonyms of example varieties
Ad. 2	to add full stop at the end of the sentence
	to improve explanation *Leading Expert provided improved explanation*
Ad. 26	to correct quotation marks to read ‘Raised margins’
Ad. 37, 38	to correct position of “floral bract” and “eye” to correspond to the respective arrows
Ad. 43	to add „Can be assessed using a penetrometer or manually.“ or „to be assessed using a penetrometer“. *Leading Expert: to read “To be assessed using a penetrometer.”*
9.	Collins and Kerns (1946) should be added since is cited in Ad. 8. *Leading Expert provided literature reference*

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

2.2	to read “The material is to be supplied in the form of aerial suckers, crowns, slips or young plants as specified by the authority.”
3.1.2	to read “The growing cycle is considered to be the period ranging from the beginning of active vegetative growth, continuing through active vegetative growth and fruit development and concluding with the harvesting of fruit.”
4.1.4	to read “Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 10 plants or parts taken from each of 10 plants and any other observations made on all plants in the test, disregarding any off-type plants.”
5.3/TQ 5	Grouping characteristics: 6 ,9, 34 and 39 TQ characteristics: 1, 8, 9, 11, 26, 31, 34, 37 and 39. They should be the same.
6.5	to add reference to growth stages
Char. 10	- to replace VS by VG - to read "Only varieties with spines: Leaf: density of spines"
Char. 11	to read "Only varieties with spines: Leaf: position of spines at margin"
Char. 12	to read "Only varieties with spines: Leaf: color of spine"
Char. 13	to read "Only varieties with spines: Leaf: size of the spine"
Chars. 21, 27	to add (+)
Char. 24, 25	- to delete "(cloves)" - to add “(cloves)” behind “7. Aerial suckers” in Ad. 21, 24, 27, 29
Char. 25	to add VG
Char. 28	to delete MS
8.1	- to delete growth stages - (b) should leaf be in italics ?
8.1 (a)	to be deleted
8.2	presentation of example varieties and synonyms to be improved
Ad. 2	to read “Leaves produced between planting and floral induction.”
Ad. 7	Not clear. Does it mean: "The density of trichomes including hairs should be observed."?
Ad. 8	Rather: “The meaning of piping is that ……the upper surface to produce a narrow silvery stripe.”
Ad. 11	illustrations must be improved
Ad. 14	How can observations on the fruit be made before fruit development?
Ad. 26	to be deleted and to delete (+) in table of characteristics
Ad. 43	to check whether explanation should be improved
Ad. 47	to read "Free acid content is determined by titration of 10 ml filtered juice with 0.1 NaOH with phenolphtaleine as indicator." The dimension is not relevant for description and DUS.
Ad. 48	is “recorded with a” not “via refractometer”
8.3	- 1-T to read “1-T: At fully vegetative growth stage, immediately before floral induction” - to provide explanation for “floral induction” - to review other growth stages

9.	to add “Bartholomew, D. P., Paul, R. E., and Rohrbach, K. G., eds. (2002): The Pineapple: Botany, Production and Uses; editors., University of Hawaii, Manoa, Honolulu, USA. 320 p.“ are two different references

Sesame (*Sesamum indicum* L.)	TG/SESAME(proj.7)

In response to a number of technical questions raised by interested experts after the TWA session, it was agreed by the Chairperson and former Chairperson of the TWA, and the Leading Experts to consider a new draft of TG/SESAME at the forty-first session of the Technical Working Party for Agricultural Crops to be held in Angers, France, from May 21 to 25, 2012.

Changes to document TG/SESAME(proj.7) made on the basis of comments received from members of the Enlarged Editorial Committee in January 2012, which are to be included in the draft Test Guidelines (document TG/SESAME(proj.8)), to be submitted to the TWA.

Char. 2	see Ad. 2
Char. 6	to delete (c)
Char. 15	(a), not (b)
Char. 16	It is necessary to indicate on which leaf this observation must be done
Char. 17	(a), not (b)
8.1	(a), (b) and (c) should be revised. The time of observation could be better indicated by growth stages e.g. 65 – Full flowering: 50% of flowers open 89 – Fully ripe: fruit shows fully-ripe color, beginning of fruit abscission (other definition to be provided by leading expert e.g. see Ad. 30). Then, only (a) is necessary as follows: All observations on the leaf, the capsules and the seed should be made on the lower part of the plant.
8.1 (a)	to indicate when observations should be made, at the beginning of flowering or when?
Ad. 2	The explanations results in: (1) 0-1 (2) 2 (3) 3-4 (4) 5 (5) >5 Is the scale appropriate?
	to read “…and very many means more than five branches per plant.”
Ad. 4	Drawing to be improved or to be deleted. Not the nodes bur the internodes are indicated. According to Ad. 1, determinate plants have no main stem.
Ad. 6	To be replaced by growing stage in table of char.
Ad. 18	the illustrations are not very relevant
	Images are not appropriate: flower in the first photo are much darker than as shown for state (4) dark
Ad. 21	Photo to be improved. It is not useful to have 3 identical flowers for (9) but no for (1).
Ad. 29	In general, the first flower in the plot is not a stable characteristic. Usually we use more stable stages, e.g. at least one open flower on 10 % of plants.

Shiitake (*Lentinula edodes* (Berk.) Pegler)	TG/SHIITK(proj.5)

(a) Changes to document TG/SHIITK(proj.4) made on the basis of comments received from members of the Enlarged Editorial Committee in January 2012, which are already incorporated in the draft Test Guidelines (document TG/SHIITK(proj.5)), submitted to the TC:

General	there is no information on (B) or (S) type except example varieties for chars. 34 and 35 *Leading Expert: to change wording of chapter 6.4*
Alternative names	to add German name “Shiitake”

4.1.4	It should be clarified that it is one fruit body from each of 60 blocks (see 3.4.1). *Leading Expert: The following should be added after "Unless … part taken from each of 60 first bodies": "which are taken from bed-logs or sawdust blocks respectively one by one"*
4.2.2	Sample size for uniformity not clear. Why less than for distinctness? Does the sample refer to single fruit bodies only or also to "blocks", e.g. char. 34 + 35? *Leading Expert: "50" is a mistake. "50" is corrected to "60"*
5.3	to delete (a)
6.5	to check if indication of (B) and (S) necessary. *Leading Expert: to delete (B) and (S) from Chapter 6.5*
Char. 12	to be indicated as VG/MS instead of MS – to be consistent with char. 10
Char. 13	to be indicated as VG instead of VS (see char. 30)
Char. 14	probably "scales" instead of scale? *Leading Expert: change to "scales"*
	According to char. 16 and Ad. 16 it seems doubtful that char. 14 is appropriate. To check if 14 and 16 should be merged. *Leading Expert: to combine Char.14 with Char.16. So, "State 1" of Char. 16 is made "absent or very small" and the example variety of state 1 is made "KX-S034". Therefore, Capter5.3 grouping character "(d) Cap: presence of scale (characteristic 14)" is deleted.*
Char. 16	See char. 14
Char. 20	to read "Gill: arrangement"
Char. 22	to read "Gill: density"
Chars. 25, 26, 31, 32	to be indicated as VG/MS - to be consistent with chars. 10, 12
Char. 31	to delete (+)
	The diameter can be smaller or larger than a length, but not shorter or longer. *Leading Expert: "shorter or longer" should be corrected to "smaller or larger"*
8.1 (a)	Information on "observation" to be moved to Ad. 1 and Ad. 2 respectively. "Number of plates: ~~more than two~~ at least 3"??? *Leading Expert agreed:* *to delete sentence "Observation (Hyphae)…" from 8.1 (a)* *Ad. 1 to read "The density of hyphae should be observed when it has developed on about 70% of the diameter of the plate (see 8.1 (a))"* *Ad. 2: to change see "8.1 (b)" to "8.1 (a)"* If ± 2°C results in different growing rates (see char. 3) a condition of 25±2°C is not appropriate to observe char. 1. I can hardly imagine that density of hyphae is stable between 23 and 27°C and that G x E interaction can be excluded. *Leading Expert: "25±2°C" to be corrected to "25±1 °C ".*
8.1 (b)	"Number of tubes/plates: ~~more than five~~ at least 6"? *Leading Expert agreed*
Ad. 10, 12, 21	Explanation not clear. Clarification necessary. *Leading Expert provided combined illustration for Ad. 10, 11, 26, 27, 31, 32*
Ad. 10, 12, 21, 25, 26	to be put together *Leading Expert provided combined illustration for Ad. 10, 11, 26, 27, 31, 32*
Ad. 16	How looks state 1 - having in mind that "very small" shall be clearly different from absent (see char. 14) *Leading Expert: see char. 14, L.E provided improved photographs*
Ad. 17	tinting of scale is not clear from pictures *Leading Expert: to add explanation*
Ad. 19	to delete lower drawings. *Leading Expert agreed*
Ad. 27, 29	not clear to which characteristic pictures belong to add Ad. 31 and Ad. 32 – together with Ad. 21, 25 and 26 *Leading Expert: see above, new illustration for Ad. 10, 11, 26, 27, 31, 32*
	These photos are not useful. Difference is obviously due to the quality of the photo but not to a different expression of the varieties. In the second it is hardly possible to see any stipe under the fluff. *Leading Expert provided new illustration and added an explanation*
Ad. 33	to read "The fruiting body should be dried at 60°C until a constant weight."
Ad. 34, 35	Explanation to be improved. It seems that the conditions are very important but no conditions are defined. *Leading Expert provided new explanation and illustration*

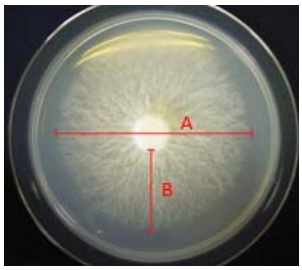
8.3	"Bed-long cultivation" to read either "the cultivation period is very long" and to delete a rest of the sentence or "the cultivation is longer than the sawdust cultivation types" *Leading Expert: to read "the cultivation period is longer than the sawdust cultivation type" and to put "Bed-log cultivation type" and "Sawdust cultivation type" in singular*
	Reference to 3.3.1 is not correct. Rewording necessary in order to focus on the information which is necessary to test DUS having in mind that the applicant has to indicate the type in the TQ. *Leading Expert: to add the following to Chapter 3.3: "In particular, it may be necessary for separate growing trials to be established for bed-log cultivation type and sawdust cultivation type in order to ensure the satisfactory growth of varieties of those types (see Chapter 8.3). These Test Guidelines provide information to cover such situations."*
TQ 5.1	to be deleted because covered in TQ 7.3.1 and update other characteristics

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

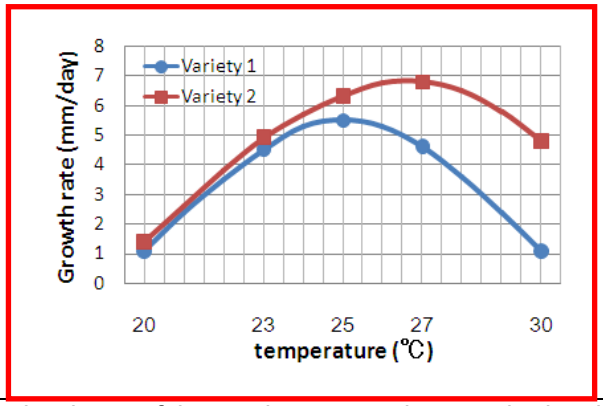
Char. 31 (old 32)	to be deleted
Ad. 3	to read as follows:

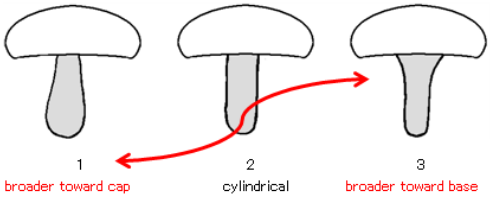
Ad. 3: Mycelium: optimum temperature for growth
Ad. 4, 5, 6, 7, 8: Mycelium: growth rate at 10°C, 15°C, 20°C, 25°C, 30°C

The incubation temperature of mycelium which combined the char. 3 to 8 is examined about 10 °C, 15°C, 20 °C, 23 °C, 25 °C, 28 °C and 30 °C. Measure the length or diameter (see 8.1(b) tube/plate) that grew up on the 14th day from the 4th day of mycelium cultured at each temperature. Amount of mycelium growth per day at each temperature are considered to be the growth rate. The optimal temperature of mycelium is the incubation temperature which shows the highest growth rate. These characteristics should be evaluated by drawing of mycelium growth curve (see following graph).



A: diameter of mycelium
B: length of colony

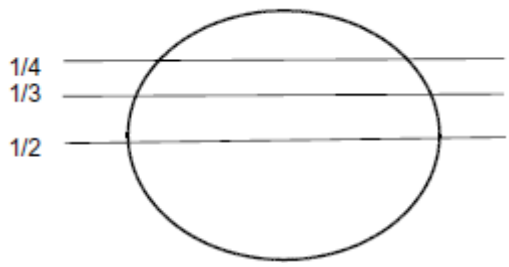


Ad. 13	to read "Determined by hand. The hardness of the cap is compared to standard varieties."
Ad. 24	to have states (1) "broader toward base", state (3) "broader toward cap". example variety: state (1) "JMS 7H-1", state (3) "Susono 360", and to delete "Kinko 115" (state 2)  to correct number, should be Ad. 23

Tomato rootstocks (*Solanum lycopersicum* L. x *Solanum habroichaites* S. Knapp & D.M. Spooner)	TG/TOM_ROOT(proj.2)

In response to a number of technical questions concerning disease resistance raised by interested experts after the TWV session, it was agreed by the Chairperson and former Chairperson of the TWV, and the Leading Expert to consider a new document for Tomato Rootstocks at the forty-sixth session of the Technical Working Party for Vegetables to be held near the city of Venlo, Netherlands, from June 11 to 15, 2012.

Changes to document TG/TOM_ROOT(proj.2) made on the basis of comments received from members of the Enlarged Editorial Committee in January 2012, which are to be included in the draft Test Guidelines (document TG/ TOM_ROOT(proj.3)), to be submitted to the TWV:

General remark	All characteristics which correspond to Tomato should be presented in the same way as in TG/44/11 (proj.5). Currently there are many unnecessary deviations in EN as well as in the translations (e.g. char. 4, 7, 9, 10, 11, 13, 22).
Botanical name and 1.	To clarify if the names refer to synonyms or different interspecific crosses. Cover page and/or sect. 1 to be adopted.
1.	Reference should be made to TG/44/11, not to TG/44/10.
2.3	2.3 is the only section where vegeatively propagated varieties are mentioned. Not considered in 4.2 Uniformity and in diseases resistance methods. If vegetatively propagated varieties exist the TG has to be amended accordingly. If it is only a possibility for the future it should be deleted in 2.3
2.3	" … ~~For disease resistance testing, additional plant material may be requested~~." Not appropriate for seed and already covered above for vegetatively propagated varieties.
4.2.2	Species Solanum (Lycopersicum) is usually considered self-pollinated ???
Chars. 4, 7, 15, 16, 17, 18	to delete explanations in brackets
Char. 4	to delete brackets (see +).
Chars. 5, 6	to be indicated as MS instead of MG
Char. 7	to delete either the text in parenthesis or the explanation
	to delete brackets (see +)
Char. 9	to check if "as for 7" is appropriate. In Tomato these char. are not observed just in the middle leaflets but in the middle of the plant.
Chars. 9, 10	either to condense scales 1 to 5 – or to add example varieties
Char. 11	Is it the pedicil (stipe of inflorescence) or the peduncle (stipe of flower)? Translations are different.
Char. 13	(2) ~~slightly flatted~~ oblate (DE: breitrund)
Char. 14	to read "two and three" instead of "two or three"
Char. 15	Is it appropriate to have 15. And 16.? Example variety of 15. should also be used in 16..
Chars. 15 to 17	Reference to "before maturity" to be deleted – see (c)
Char. 16	proposal to add explanation (from CPVO draft protocol for tomato)  3: small (1/4) 5: medium (1/3) 7: large (1/2)
Char. 18	Reference to "before maturity" to be deleted and to add (c)
Char. 22	susceptible – moderately resistant – highly resistant (… as for Tomato)

8.1 (c)	"All observations on the green shoulder and meridian stripes of the fruit should be made on the plant before maturity.
Ad. 1	To be deleted because not useful. Redundant.
Ad. 3	Second part of last sentence is very confusing and makes the whole characteristic doubtful. Photos to be deleted. Photos are in bad quality and in contradiction to wording, if intensity of expression is variable due to environment.
Ad. 4	to read "In case of measurements, this measure is divided…" instead of "When this observation/measure is divided …" because observation cannot be divided
Ad. 7	either to delete text in parenthesis or to delete explanation
Ad. 13	To use images from TG/44/11 (proj.5) char. 28 state 1, 2 and 3.
Ad. 21	Is it a separate test?
Ad. 22 to 32	The presentation of the methods is confusing and partly imprecise. In general, more stringent wording is necessary. I will not comment on all details but give only some examples: - All methods refer to seed or seedlings. How to deal with vegetatively propagated varieties? - Indication of host is unclear, at least the species covered by the TG must be hosts as well – otherwise no susceptibility possible - Repetitions in sect. 8 and 10 should be prevented, sometimes information is not conform in sect 8 and 10 - Relation between time(s) of observation and end of test is not clear, e.g. Ad. 22 10.7 or Ad. 23 10.5 to 10.7 etc. - … - Title of par. 12 should be reworded: "Interpretation of data in terms of ~~UPOV characteristic~~ states of expression" I wonder if the presented document was agreed by TWV because chapter 8 is completely different to the draft considered by TWV 2011.
Ad. 22	to check if 11.4 really refers to off-types For resistant varieties there seems to be a contradiction between 11.4 and 12. Note 3
Ad. 23	According to the last sentence in par. 13 it is questionable if absent-present is appropriate.
Ad. 24	According to the last sentence in par. 13 it is questionable if absent-present is appropriate.
Ad. 25	11.1 Method: not very clear
Ad. 26	6. Establishment of isolate identity to read "with genetically defined differentials from GEVES (FR): race 0 and race 2-4-5 or from Naktuinbouw: A (Cf-2), B (Cf-4), C (Cf-2-4), D (Cf-5), E (Cf-2-4-5)"
Ad. 27	Remark in par. 11.2: IT is not clear to which type of varieties the remark refers.
Ad. 31	Par. 13: If there exists another method than using the pathogen this method should be mentioned.
Ad. 32	Par. 13: If resistance is race specific but it is not possible to test race specific, the characteristic does not seem to be appropriate for DUS.

Tree Paeony (*Paeonia* Sect. *Moutan*)	TG/PAEON(proj.6)

The TC-EDC recommended that the draft Test Guidelines for Tree Paeony should be referred back to the TWO in order to resolve technical issues as presented in the comments by the TC-EDC.

(a) Changes to document TG/PAEON(proj.5), made on the basis of comments received from members of the Enlarged Editorial Committee in January 2012, which are already incorporated in the draft Test Guidelines (document TG/PAEON(proj.6)), submitted to the TC:

Ad. 5, 19, 21, 33, 38	The legend of length/width should be placed separately

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

General remark	Because of many fundamental changes/open questions on characteristics and in section 8, in my opinion the document is not ready for adaptation by the TC and should go back to the TWO.
Box on front page, Botanical names, Chapter 1	to review consistency of coverage of Test Guidelines
Cover page	- to correct Spanish name to “Peonia” - to correct French name to “Pivoine arbustive” - to add space after comma in third line of botanical names
4.1.4	to read "Unless otherwise indicated, for the purposes of distinctness, all observations should be made on 5 plants or parts taken from each of 5 plants. In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 2."
5.3	Number and quality of grouping characteristics should be checked.
Char. 2	to be indicated as VG/MS
Char. 10	to be indicated as VG/MS
Char. 12	to delete MG
Char. 13	to be indicated as PQ
Char. 14	to be indicated as MS
Char. 15	to be indicated as MS
Char. 16	to be indicated as VG
Char. 23	- to read “Flower: form” and to add explanation that the most complex flower within a plant should be observed - to check if high number of states is appropriate
Chars. 24	VG or MS, but not MG
Char. 25, 29, 30, 31, 46, 47, 48	to delete reference to “most complex form” and add explanation in 8.1 that observation should be done on flowers with most complex form
Chars. 26 and 27	to check whether to add color groups to chapter 5.3 and/or TQ 5.11 and 5.12
Char. 27	explanation missing.
Char. 33	Differences between the forms are not clear. Too many states?
Char. 34	to be indicated VG/MS
Char. 50	to read "Time of beginning of the first flowering"
8.1 (a)	- to delete 8.1(a) and remove (a) from char. 1 - to add to Ad. 1: “Observed after leaf fall in the winter” - to add (+) to char. 2 and create the following Ad. 2: “Ad. 2: Plant height Observed when plants are in flower.”
8.1 (b)	reword to read “Observations on the mixed bud shape and color should be made on the first lateral bud from the apex on a current year branch during after leaf fall in the autumn. A current year branch is a branch which is current or belongs to the present year.”
8.1 (c)	- to delete 8.1 (c) and remove (c) from char. 8 - to add (+) to char. 8 and create following Ad. 8: “Ad. 8: One year old branch: length Observed after leaf fall on current year branches, excluding basal shoots.” - to add (+) to char. 9 and create following Ad. 9: “Ad. 9: Two-year-old branch: number of flowering branches Two year old branches are those developed and flower buds differentiated on last year.” [should this be “on last year’s branches”?]
8.1 (d)	- to move to Ad. 7 and reword to read “Very young shoots are less than 10 cm in length. The color of very young shoots excludes that of flower buds.” - to remove (d) from char. 7
8.1 (e)	- to amend to read “Except for leaf color, all observations on the petiole, leaf and leaflet should be made on the third and fourth fully developed leaves from the base on current year’s branch in flower.” - to add (e) to char. 13

8.1 (f)	- to delete 8.1 (f) - char. 16: to delete (f) and add (+) - char. 17: to change (f) to (e) - char. 18: to change (f) to (e) - to create following Ad. 16: "Ad16: Leaf: color of upper side Observed at the beginning of flowering."
8.1 (g)	to read "All observations on flower, petal, stamen and pistil should be made on the terminal flower on a primary branch. Observations on the shape of flower bud should be made when the bud is beginning to show the color. All observations on the petal should be made when the flower is fully open, except for the observations on the petal color which are made on the middle part of the petal at the time of flower opening."
8.1 (h)	to read "Blotch: an irregularly shaped and sized spot at the base of the petal. All observations on the blotch should be made on the first inner 1~2 wheel petals when the flower is fully open."
8.2	several explanations are missing
Ad. 3, 4	current Ad. 3, 4, 5 does not cover chars. 3 and 4; Ad. 3 and 4 should be added
	to add Ad. 3 and 4 according to TWO report and as provided by Leading Expert: Ad. 3    1 upward 2 outward 3 downward Ad. 4    3 within 5 same level or nearly same level 7 above
Ad. 5	presentation in table not appropriate
Ad. 10, 14, 15	to delete small arrows.
Ad. 19, 20	Presentation to be improved. Difficult to identify which illustration shall show what.
Ad. 21	presentation in table not appropriate
Ad. 22	could be deleted
Ad. 23	See char. 23 - What is the "most complex form"?
Ad. 27	to be provided
Ad. 38	Presentation in table not appropriate.
Ad. 42	Images not clear.
Ad. 44	Shall it be texture? Photos do no tprovide useful information
Ad. 47	Difference between (1) and (2) not clear
Ad. 50	- to read "The beginning of flowering is determined when 10% of all flower buds have opened." - (d) is not correct, to be deleted?
TQ 1.3	to add "(Please indicate)"
TQ 5	- to check if all requested characteristics are appropriate. - to add char. 13 and 24 (grouping chars.)

2. REVISIONS

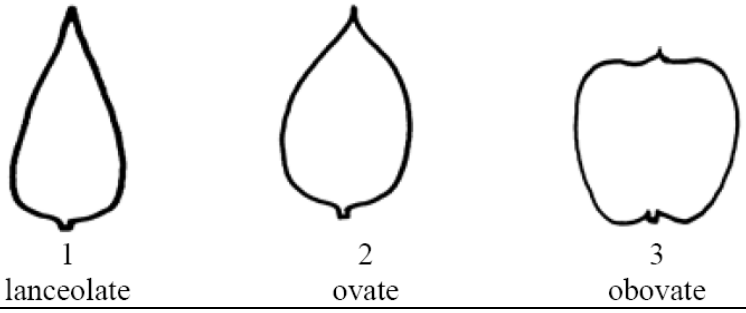
Actinidia (*Actinidia* Lindl.)	TG/98/7(proj.5)

(a) Changes to document TG/98/7(proj.4), made on the basis of comments received from members of the Enlarged Editorial Committee in January 2012, which are already incorporated in the draft Test Guidelines (document TG/98/7(proj.5)), submitted to the TC:

Cover page	to read UPOV Code: ACTIN (to delete full stop at the end)
3.1	to justify paragraph
3.1.2	to delete quotation mark at the end of the sentence
3.4.1	to add full stop at the end of the sentence
Char. 70	to read “Fruit: general shape of core in cross section” *Leading Expert: Since it can be seen in Ad. 67 that in some cases the shape is not uniform (see State 4 that is more like an oblong), or to consider having more States.*
Char. 76	state (3): to delete example variety “Hongyang (A)”
8.1 (a)	The wording is confusing. Should read “Observations on the young shoot should be made during active vegetative growth. Observation of hairs should be made on internodes from the middle third of growing shoots”
Ad. 19	to correct numbering: rounded = 5, retuse = 6
TQ 5	Now that ploidy is in TQ 7, the numbering should be: 5.1 (75) Time of beginning of flowering For female and hermaphrodite varieties 5.2 (46) Fruit weight 5.3 (50) Fruit shape 5.4 – 5.8
TQ 7	to have only one table for “Plant: ploidy” as the character applies to all varieties

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

2.3	to read “The minimum quantity of plant material, to be supplied by the applicant, should be: 5 plants on their own roots or, 5 plants on the clonal rootstock as specified by the authority”
2.2	- to read “The material is to be supplied in the form of plants on their own roots or plants on a clonal rootstock. The competent authorities should specify the form of material to be supplied and select the most appropriate rootstock.” - to move last sentence “For female varieties, the competent authorities should ensure that an appropriate male variety is available for adequate pollination.” to Chapter 3.3
4.1.4	to read "Unless otherwise indicated, for the purposes of distinctness, all observations should be made on 5 plants or parts taken from each of 5 plants. In the case of observations of parts taken from single plants, the number of parts to be taken from each of the plants should be 2."
Char. 18	to delete (+)
Char. 27	to delete "if present”
Chars. 47, 48	to be indicated as VG/MS
Char. 49	to be indicated as VG/MG
Char. 54	states to read (1) absent or weakly expressed, (2) medium expressed, (3) strongly expressed
Chars. 56, 57	to delete MG
Char. 59	state (1): to delete example variety “Shouwa (B)” and add “a-Shouwa (B)”
Char. 67	to delete “(if present)”
Char. 69	to delete MG
Char. 72	to be indicated as MS only
Char. 73	to delete VG
8.1	to read "(1) Applies to Group A type varieties only" "(2) Applies to Group B type varieties only"

Ad. 16	to replace photographs with explanation “Lamellate: The pith consists of layers of thin plates, one against an other Solid: The pith consists of a dense mass”
Ad. 17	to replace with new illustration:  1 lanceolate 2 ovate 3 obovate
Ad. 67	to use new illustration provided by Leading Expert
TQ 7.1	- state (4): example variety “Kaimutu (A)” to be replaced by “Kuimi (A)” - state (6): “Mitukou (B)” to be replaced by “Mitsukou (B)”

Durum wheat (*Triticum turgidum* L. subsp. *durum* (Desf.) Husn.)	TG/120/4(proj.5)

(a) Changes to document TG/120/4(proj.4), proposed by the Enlarged Editorial Committee at its meeting on January 11 and 12, 2012, which are already incorporated in the draft Test Guidelines TG/120/4(proj.5), submitted to the TC:

3.3.2	to read “… The stages of development denoted by each number are described in the descriptions of the growth stages of the Zadoks decimal code for cereals ~~at the end of~~ in Chapter 8.3.”
3.4.3	to be divided: new sub-chapter 3.4.4 from the sentence “In case of hybrids…”
4.2.3	to correct first sentence and to separate paragraph to read “4.2.3 For the assessment of uniformity ~~of~~ in a sample of 100 plants or parts of plants and ear-rows, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 100 plants, parts of plants or ear-rows, 3 off-types plants/ear-rows are allowed. An ear-row is considered to be an off-type if there is more than one off-type plant within that ear row. Characteristics which should be observed on a sample size of 100 plants are indicated by an “A” in the Table of Characteristics. “4.2.4 For these “A” characteristics, with the exception of characteristic 1, the assessment of uniformity can be done in 2 steps. In a first step, 20 plants or parts of plants are observed. If no off-types are observed, the variety is declared to be uniform. If more than 3 off-types are observed, the variety is declared not to be uniform. If 1 to 3 off-types are observed, an additional sample of 80 plants or parts of plants must be observed.”
Char. 4	to replace VG by MG, to delete states (1) and (9)
Chars. 7, 8, 10, 11, 17, 27	to delete state (9)
Char. 14, Ad. 14	to have states (2) medium oblong and (3) narrow oblong
Chars. 22, 24	to delete states (1) and (9)
Char. 23	to read “Ear: coloration”
Char. 26	- to have states (1) slightly elongated, (2) moderately elongated (3) strongly elongated - to be indicated as QN
General remark on Ads.	to delete states (1) and/or (9) when necessary (see comments on chars. above)
Ad. 2	to read “The growth habit ~~at tillering stage (growth stages 25-29)~~ should be assessed visually from the attitude of the leaves and tillers at tillering stage (growth stages 25-29). The angle formed by the outer leaves and the tillers with an imaginary middle axis should be used.”
Ad. 26	to correct states to (1), (2), (3); to add “To be observed in dorsal view.”
8.3	to add “Zadoks et al, 1974)” format: less lines in the table

9.	first reference to read "…Genetic Resources and Crop Evolution 41: 47-54." third reference to read "…Weed Research 14: 415-421."
	to check literature
TQ 7	to delete request for photograph.

Papaya (*Carica papaya* L.)	TG/264/2(proj.3)

The TC-EDC, at its session held in Geneva, on January 11 and 12, 2012, considered documents TG/264/2(proj.2) and TC-EDC/Jan12/7 "DUS Examination of Seed-Propagated Varieties of Papaya" and noted the progress in the development of the draft of the Test Guidelines. It noted that it would be difficult to assess the proportion of male plants, hermaphrodite plants and female plants (Chars. 17-19) on the basis of the proposed sample sizes: 5 plants and 20 plants. Therefore, the TC-EDC recommended that the draft Test Guidelines for Papaya be referred back to the TWF for further consideration in that regard.

(a) Changes to document TG/264/2(proj.2) made on the basis of comments received from members of the Enlarged Editorial Committee in January 2012, which are to be included in the draft Test Guidelines (document TG/264/2(proj.4)), to be submitted to the TWF:

4.1.4	to read "Unless otherwise indicated, for the purpose of distinctness, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants in the case of seed-propagated varieties and 5 plants or parts taken from each of 5 plants in the case of vegetatively propagated varieties, in both types of propagation disregarding any off-type plants."
4.2.4	to be deleted
Char. 12	- to move after char. 15 - to delete VG - to add (+) and explanation
Chars. 17 to 19	to delete VG, to be reconsidered by the Leading Expert (How to be assessed on 5, 20 plants?)
Char. 21	to add example varieties for state (2) and/or (3)
Char. 33	to add (f)
Char. 37	to delete VG
Chars. 43 to 38	Leading Expert to check order of seed characteristics
Chars. 42, 44, 45, 46	to be indicated as VG/MS
8.1 (b)	to read "…or single flower has appeared."
8.1 (c)	to add "In seed-propagated varieties" before last sentence
8.1 (d)	to be deleted, text to be improved and moved to Ad. 22 and 23
8.1 (e)	to add "In seed-propagated varieties" before last sentence
8.1 (f)	to read "Fruit: …"

(b) Changes proposed by the TC-EDC in March 2012, which are to be included in the Test Guidelines submitted to the TC:

4.1.4	to read "Unless otherwise indicated, for the purpose of distinctness, all observations on single plants should be made on 20 plants or parts taken from each of 20 plants in the case of seed-propagated varieties disregarding any off-type plants. In the case of vegetatively propagated varieties all observations on single plants should be made on 5 plants or parts taken from each of 5 plants."

Parsnip (*Pastinaca sativa* L.)	TG/218/2(proj.3)

(a) Changes to document TG/218/2(proj.2), proposed by the Enlarged Editorial Committee at its meeting on January 11 and 12, 2012, which are already incorporated in the draft Test Guidelines TG/218/2(proj.3), submitted to the TC:

4.2.3	"In addition, for hybrids, the same population standard and acceptance probability should be applied to clearly recognizable inbred plants. In the case of a sample size of 200 plants, 7 clearly recognizable inbred plants are allowed." to check with Leading Expert whether these additional sentences is necessary *Leading Expert: 4.2.3 should read as follows:* *"(b) Hybrid varieties/Inbred lines* *4.2.3 For the assessment of uniformity of single cross hybrids and self-pollinated varieties (inbred lines), a population standard of 2% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 200 plants, 7 off-types are allowed. In the case of of a sample size of 30 plants, 2 off-types are allowed."*
Ad. 9	to read "Leaflet size refers to the area of the leaflet. Assessment should be made on the second leaflet from the bottom on one side of the midrib for each leaf recorded (see Ad. 11). *Leading Expert: to read:* *"~~Leaflet size refers to the area of the leaflet~~. Assessment should be made on the second leaflet from the bottom on one side of the midrib for each leaf recorded."*
Ad. 23	to improve explanation *Leading Expert: to read after "…presence or absence of pollen.":* *"At least 30 roots of each variety to be assessed should be grown on to flowering."*
TQ 5.2 (Char. 12)	to delete ex. variety "MS2"

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

Char. 17	state (2) to read "medium obtriangular", state (4) to read "medium obovate"

Radish, Black Radish (*Raphanus sativus* L.)	TG/63/7(proj.7)-TG/64/7(proj.6)

(a) Changes to document TG/63/7(proj.6)-TG/64/7(proj.5), made on the basis of comments received from members of the Enlarged Editorial Committee in January 2012, which are already incorporated in the draft Test Guidelines (document TG/63/7(proj.7)-TG/64/7(proj.6)), submitted to the TC:

Box on front page	to delete bracket and to read *"Raphanus sativus* L. var *sativus*; *Raphanus sativus* L. var. *niger* (Mill.) S. Kerner"
Botanical name	to read *"Raphanus sativus* L. var. *sativus* = (S)"
Spanish name	to read "Rábano de invierno, Rábano negro" and to include the name "Rábano" in "*Raphanus sativus* L. var. *sativus* = (S)"
1.	name to read "*Raphanus sativus* L. var. *sativus"*
3.4.1	Reference should be made to chapter 8.1, not to 5.3. *Leading Expert agrees*
6.4 and 6.5	The way to indicate the type of example varieties should follow TG/46 Onion/Shallot or TG/57 Flax/Linseed. *Leading Expert agrees*
All Chars.	To use consistently "Only N-type varieties" <u>or</u> "Only **for** N-type varieties" (respectively S-type) *Leading Expert: Use: Only N-type varieties*
Char.1, Ad.1, TQ 5.1	to read "<u>Only for N-type varieties</u>: Ploidy" *Leading Expert: "to read <u>Only ~~for~~ N-type varieties</u>: Ploidy" (see comment above)*

Char. 6	The term blunt is unsharpened or rounded; it is not defined in TGP/14 and in Ad. 6 like obtuse. In 1 “slightly pointed” should be “acute”. *Leading Expert agrees*
Char. 7	to check whether is applicable for “S” type - there is only one “S” type variety example *Leading Expert: Colors can be observed in one scale for both types, even though there might be less variation in S-type. There have been two leaf blade color char. in the fomer small radish guideline, which have been merged into Char. 7*
Char. 9	to add explanation for blade with leaflets – which leaflets should be observed (see Ad. 6) *Leading Expert: The depth of incision of margin is the same for all leaflets of a leaf. To avoid confusion, I provided a new illustration for Ad. 6 (only one photograph per state)*
Char. 10	to delete notes (2), (4), (6), (8) *Leading Expert agreed*
	To delete “Only for N-type varieties”. Example varieties for (9) have to be checked (were taken over from old TG where it was absent / present in N-type). *Leading Expert agreed*
Char. 17	to reorder the stage 9 and 10 - to read medium oblate 9, narrow oblate 10 (from elongated to compressed) *Leading Expert agreed*
Char. 19	if considered as lateral view to have states (1) truncate, (3) obtuse *Leading Expert agrees*
Char. 26	To delete “very” in (1) and (5) *Leading Expert agreed*
Char. 28	States should be renamed or to separate in to characteristic for each type (S and N) *Leading Expert agreed*
Ad. 1	“The ploidy status … • and length of stomata on the lower side of the cotyledon (tetraploid varieties have more and longer stomata than diploid varieties) …”
Ad. 2	to add: “S-type should be observed at the time of harvest maturity” *Leading Expert agreed*
Ad. 3, 4, 5	to delete and should be explained 8.2 (b)
	The same explanation applies probably also to characteristics 6 to 9. It should be checked if it is more appropriate to move the wording to 8.2 and to add a letter. *Leading Expert agrees:* *8.2 (c) to read “All observations on the leafs should be made on fully developed leaves”, to add (c) to chars. 3 to 9*
Ad. 17	to read “medium oblate” (9), “narrow oblate” (10) (from elongated to compressed)
Ad. 20	to use improved illustrations provided by Leading Expert (drawings are improved in respect of the position of the dotted lines)
Ad. 22	to use improved illustration provided by Leading Expert (drawings are improved in respect of the position of the dotted lines)
Ad. 25	to use improved illustration provided by Leading Expert (drawings are improved in respect of the position of the dotted lines)
Ad. 27	Observation in longitudinal section? *Leading Expert: to add “To be observed in longitudinal section.“*
Ad. 28	“Time of harvest maturity is reached ~~should be observed~~ at growth stage 48 (see Chapter 8.4).”
8.4	first sentence to read “… (radish = *Raphanus sativus* L. ssp.) Feller et al. (1995).”
	to add literature source: “(Meyer, 1997)”
8.4, 41:	to read (diameter > 0.5 cm)
9.	to include Feller et al. (1995). in the literature since is cited in 8.4
TQ 1.1.1	*Raphanus sativus* L. var. *longipinnatus* L.H. Bailey should be deleted. According to cover page it is a synonym. (Otherwise 1. Subject of these Test Guidelines needs modification.)
TQ 5.10 (17)	to revise notes 9 and 10 to add “grid” *Leading Expert agreed*
TQ 7.2	Chapter 7.2 should follow TGP/7 strictly. “Use” to be moved to 7.3 *Leading Expert agreed*
TQ 7.3	7.3.1 Type of use … 7.3.2 Other information *Leading Expert agreed*

(b) Changes proposed by the TC-EDC in January and March 2012, which are to be included in the Test Guidelines submitted to the TC:

Botanical names	to delete "(N)" and "(S)" in botanical name.
6.4	to delete 6.4.2 and numbering of 6.4.1
6.5	"(S) S- type varieties: see Chapter 8.1" "(N) N- type varieties: see Chapter 8.1"
Char. 7	to add (N) after ex. var. “Miura”
Char. 13	to add (N) after ex. var. “Minowase Summer Cross No. 3”
Char. 17	state (12) in French to read “en cloche”
Char. 21	to be indicated as QL
Char. 23	to delete (+)
8.4	to read “Phenological growth stages and BBCH-Identification keys of non-thickened root and stem vegetables (radish = *Raphanus sativus* L.) Feller et al., 1995 (Meier, 1997)”
9.	fourth reference to read “Meier” instead of “Meyer”

[End of Annex IV and of document]