



TC/51/39

ORIGINAL: English

DATE: March 25, 2015

**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**

Geneva

**TECHNICAL COMMITTEE****Fifty-First Session  
Geneva, March 23 to 25, 2015**

## REPORT

*adopted by the Technical Committee**Disclaimer: this document does not represent UPOV policies or guidance*Opening of the session

1. The Technical Committee (TC) held its fifty-first session in Geneva from March 23 to 25, 2015. The list of participants is reproduced in Annex I to this report.
2. The session was opened by Mr. Alejandro Barrientos Priego (Mexico), Chairman of the TC, who welcomed the participants.
3. The Chairman reported that the African Intellectual Property Organization (OAPI) had deposited its instrument of accession to the 1991 Act of the UPOV Convention on June 10, 2014, and had become the 72<sup>nd</sup> member of UPOV on July 10, 2014.
4. The Chairman reported that observer status had been granted to the South Centre in the Council and the Administrative and Legal Committee (CAJ); and to the World Farmers' Organization (WFO) in the Council, the CAJ and the TC.
5. The Chairman confirmed that the report of the fiftieth session of the TC, held in Geneva from April 7 to 9, 2014 (document TC/50/37), had been adopted by correspondence and was available on the UPOV website.
6. The TC noted that paper copies of documents to be discussed during the TC would not be produced and that participants were requested to bring their own paper copies, if needed. The TC also noted that the list of participants would be simplified and would not contain photographs of the participants.

Adoption of the agenda

7. The TC adopted the agenda as presented in document TC/51/1 Rev.

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)

8. The TC considered document TC/51/10 and received and oral report by the Vice Secretary-General.

9. The TC noted the developments in UPOV including relevant matters discussed in the last sessions of the Administrative and Legal Committee, the Consultative Committee and the Council, as set out in paragraphs 3 to 35 of document TC/51/10.

10. The Delegation of Spain reported that, in Spain, the UPOV distance learning courses were being used for the training of government officials outside of the PVP Office, such as the police and border control agents. The Vice Secretary-General welcomed the report from Spain and recalled that the UPOV distance learning courses were free for government officials of members of the Union that were nominated by the relevant representative to the UPOV Council. He also expressed his thanks to the experts from members of the Union that voluntarily acted as tutors in the UPOV distance learning courses, without which it would not be possible to operate the distance learning courses on such a basis.

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

11. The TC received oral reports from the Chairpersons 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 Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT). A summary of the work provided by the Chairpersons is provided below.

*Technical Working Party for Agricultural Crops*

12. The TWA held its forty-third session in Mar del Plata, Argentina, from November 17 to 21, 2014 under the Chairmanship of Mrs. Robyn Hierse (South Africa). The detailed report of the meeting can be found in document TWA/43/27 "Report".

13. The session was attended by 45 participants from 23 member states of the Union, 6 observer states and 3 observer organizations. The preparatory workshop was held on the afternoon of June 16 and was attended by 24 participants from 13 members of the Union and 5 observer states.

14. The TWA was welcomed by Mr. Raimundo Lavignolle, President of the Directorate of the National Seed Institute (INASE). The TWA received a presentation on plant variety protection in Argentina by Mr. Alberto Ballesteros, Examiner for cereal, cotton, rice and forage crops.

15. The TWA adopted the agenda as presented in document TWA/43/1 Rev.

16. The TWA noted that the information on developments in plant variety protection from members and observers was provided in document TWA/43/25. This was then followed by a presentation from the Office of UPOV on the latest developments within UPOV (document TWA/43/24).

17. The TWA considered document TWA/43/11, which considered the effectiveness of Technical Committee, Technical Working Parties and Preparatory workshops. The TWA considered the proposals concerning possible means of improving the effectiveness of these bodies presented in the document TWA/43/11 and made a number of comments. The TWA comments are available in TWA/43/27 "Report".

18. The TWA noted the revisions to documents TGP/0 "List of TGP Documents and Latest Issue Dates", TGP/2 "List of Test Guidelines Adopted by UPOV", TGP/5 "Experience and Cooperation in DUS Testing", TGP/7 "Development of Test Guidelines" and TGP/8 "Trial Design and Techniques Used in the Examination of Distinctness, Uniformity and Stability" which had been adopted by the Council at its forty-eighth ordinary session, as set out in paragraphs 5 to 21 of document TWA/43/3. The TWA also noted that the proposals for future revisions of TGP documents would be dealt with under separate documents.

19. The TWA considered document TWA/43/12, concerning the revision of document TGP/7: Plant Material Submitted for Examination. The TWA noted there were many factors that could affect plant material submitted for examination and agreed that documents TG/1/3 "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of new Varieties of Plants" and TGP/9 "Examining Distinctness" provided a good basis for authorities to prevent and address

most of the problems. The TWA agreed that there would be no need to develop further guidance on plant material submitted for examination.

20. The TWA considered document TWA/43/13, concerning the revision of document TGP/7: Coverage of the Test Guidelines. It agreed that the new proposed paragraph in Approach 3, with guidance on procedures in case varieties are developed in the future with other types of propagation, would become repetitive if Test Guidelines were developed on the basis of varieties with more than one type of propagation and agreed that ASW 8 should be amended.

21. With regard to document TWA/43/15 “Minimizing the Variation Due to Different Observers”, the TWA considered the draft guidance in the Annex to document TWA/43/15, for inclusion in a future revision of document TGP/8, on minimizing the variation due to different observers, including guidance on PQ and QN/MG characteristics.

22. The TWA considered document TWA/43/19 “Guidance for Blind Randomized Trials”. The TWA agreed that the guidance to be developed should explain the importance of sample size and how to minimize biases in the methodology.

23. With regard to document TWA/43/20 “Examining Characteristics using Image Analysis”, the TWA agreed on the importance of precise definition of characteristics to be assessed using image analysis. The TWA noted the proposal from the expert from the European Union to prepare a new draft for New Section “Examining Characteristics Using Image Analysis” for inclusion in document TGP/8 for consideration by the TC and the TWPs at their sessions in 2015.

24. The TWA considered document TWA/43/21 “Statistical Methods for Visually Observed Characteristics”. The TWA noted the developments concerning a possible New Section: “Statistical Methods for Visually Observed Characteristics” to be introduced in document TGP/8: Part II: Techniques Used in DUS Examination, in a future revision of document TGP/8. The TWA agreed to request the TWC to clarify whether the COYD method for ordinal characteristics was recommended for any ordinal data, or whether other conditions should also be considered when selecting the appropriate analysis method.

25. The TWA considered document TWA/43/22 and the proposed example of a single record for a group of plants (MG) taken on plant parts for inclusion in a future revision of document TGP/9. The TWA agreed with the comment made by the TWO, TWF and TWV on the example of a single record for a group of plants (MG) taken on plant parts for inclusion in a future revision of document TGP/9.

26. With regard to document TWA/43/9 “Assessing uniformity by off-types on basis of more than one sample or sub-samples”, the TWA agreed with the TWC that the guidance provided in document TGP/10 was sufficient to address the situation C “More than one sample or subsample for a characteristic in the same growing trial” presented in the Annex III to document TWA/43/9.

27. On experience with new types and species, the TWA received a presentation by electronic means by an expert from New Zealand on experiences with fungal endophytes from the genus *Neotyphodium* and a presentation by an expert from Argentina on experiences with *Cyamopsis tetragonoloba*.

28. The TWA received a presentation by an expert from Brazil on a project to harmonize example varieties in wheat, soy bean and rice among Argentina, Brazil, Bolivia, Chile, Colombia, Paraguay and Uruguay, a copy of which is provided in document TWA/43/25.

29. The TWA discussed 9 draft Test Guidelines and agreed to submit to the TC five of those: namely, Adlay; Adzuki/Red bean; Cassava; Sorghum; and Urochloa. It was agreed to discuss the following draft Test Guidelines in 2015: Castor Bean; Cotton (revision); Elytrigia; Field Bean (revision); Finger Millet; Oats (revision); Quinoa; Red Clover; Scorpion Weed; Soya Bean (revision); and Wheat (revision).

30. The TWA agreed to discuss 11 Test Guidelines in 2015 and expressed its interest to revise the Test Guidelines for Ginseng (document TG/224/1) and Barley (document TG/19/7) in 2016.

31. At the invitation of Japan, the TWA agreed to hold its forty-fourth session in Obihiro, Japan, from July 6 to 10, 2015, with the preparatory workshop on July 5, 2015.

32. The TWA proposed to discuss the following items at its next session:
1. Opening of the Session
  2. Adoption of the agenda
  3. Short reports on developments in plant variety protection
    - (a) Reports from members and observers
    - (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. Uniformity assessment
  9. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee (if appropriate)
  10. Discussion on draft Test Guidelines (Subgroups)
  11. Recommendations on draft Test Guidelines
  12. Guidance for drafters of Test Guidelines
  13. Date and place of the next session
  14. Future program
  15. Report on the session (if time permits)
  16. Closing of the session

33. On November 19, 2014, the TWA visited the agricultural experimental station of the National Institute of Agricultural Technology (INTA) in Balcarce. The TWA also visited a seed processing facility for maize, wheat, sunflower and soya bean seeds of the Nidera Seeds Company and the growing trials for the wheat breeding program.

34. Mrs. Robyn Hierse was awarded a UPOV bronze medal in recognition of her chairmanship of the TWA from 2012 to 2014.

#### *Technical Working Party on Automation and Computer Programs*

35. The TWC held its thirty-second session in Helsinki, Finland, from June 3 to 6, 2014, under chairmanship of Mr. Sami Markkanen (Finland), Chairperson of the TWC.

36. The TWC session was attended by 27 participants from 15 members of the Union. The preparatory workshop was held during the afternoon on Monday, June 2, and was attended by 15 participants from 9 members of the Union.

37. The TWC was welcomed by Mrs. Riitta Heinonen, Deputy Director General, Ministry of Agriculture and Forestry of Finland and by Mrs. Marja Savonmaki, Senior Specialist, Ministry of Agriculture and Forestry of Finland. The TWC received a presentation on the plant variety protection (PVP) system in Finland from Mrs. Tarja Hietaranta, Senior Officer, Seed Certification Unit Finnish Food and Safety Authority.

38. The TWC noted that the information on developments in plant variety protection from members and observers was provided in document TWC/32/26 "Reports on Development in Plant Variety Protection from Members and Observers". The TWC also received a presentation from the Office of the Union on the latest developments within UPOV (document TWC/32/24).

39. The TWC considered documents TWC/32/16 "Revision of Document TGP/8: Part II: Selected Techniques used in DUS Examination, Section 3: Method of Calculation of COYU" and TWC/32/16 Add. "Addendum to Development of the Combined-Over-Year Uniformity Criterion". A presentation was received from an expert from the United Kingdom. It was recalled that the present method of calculation of COYU was

overly strict due to the method of smoothing used and that very low probability levels were used in compensation. At its thirty-first session, the TWC agreed that the bias in the present method of calculation of COYU could be addressed by a change of smoothing method from “moving average” to “cubic smoothing splines”. The expert from the United Kingdom gave a demonstration of a module for the DUST software incorporating a modified version of COYU using smoothing splines. The TWC agreed to invite other experts to evaluate the new method and software. Software would be made available to interested experts both in DUST and also using the “R” software package. The TWC agreed that participants would seek to identify probability levels to match decisions using the previous COYU method for continuity in decisions. The TWC agreed that participants of this practical exercise should send a report on their experiences to the expert from the United Kingdom by March 15, 2015, and that the expert from the United Kingdom should compile a report for the thirty-third session of the TWC.

40. The TWC considered document TWC/32/18 “Revision of Document TGP/8: Part II: Selected Techniques used in DUS Examination, New Section: Data Processing for the Assessment of Distinctness and for Producing Variety Descriptions”. The addendum to that document reported on a practical exercise using a single quantitative characteristic for flax to demonstrate different methods for producing variety description. Experts from France, Germany, Italy, Japan and the United Kingdom participated. The TWC agreed to request an expert from France to use the information to clarify the steps used in each method and the differences between them. The TWC agreed that this should be presented for consideration at the thirty-third session of the TWC. The TWC received a presentation by an expert from Italy explaining the Italian method for developing variety descriptions (Annex III to TWC/32/18). An expert from Germany also gave a verbal explanation of Annex II “Different forms that variety descriptions could take and the relevance of scale levels”, describing the relationship between scale levels and variety descriptions. The TWC agreed that this could be used as an introduction to future guidance to be developed on variety descriptions.

41. The TWC received a presentation from an expert from China on “Variation of variety descriptions over years in different locations”, as presented in Annex I to document TWC/32/6. The TWC agreed that the information provided was useful to demonstrate the robustness of some characteristics and for defining grouping characteristics.

42. The TWC received a presentation by an expert from the Netherlands on the use of the characteristic content of Glycoraphanin in broccoli based on bulk samples, as set out in the Annex to document TWC/32/17. The TWC agreed that validation of characteristics based on bulk samples should consider analysis of individual plants but noted that it could have cost implications.

43. The TWC considered document TWC/32/21 “Revision of Document TGP/8: Part II: New Section: Statistical Methods for Visually Observed Characteristics”. The TWC received a presentation by an expert from Finland comparing distinctness decisions for meadow fescue using two methods: the Chi-square test; and a new method presented previously to the TWC by an expert from Denmark. This method is similar in approach to COYD but is suitable for ordinal data. The TWC agreed that the new method was tailored for the analysis of visually observed characteristics and had a better fundamental basis when compared to the chi-square test. The TWC agreed that further development was required, particularly with regard to software. In addition, the TWC agreed to invite an expert from China to make a presentation at the thirty-third session of the TWC on the analysis of visually observed characteristics using the DUST China (DUSTC) software package using the same data set for meadow fescue provided by Finland.

44. The TWC considered document TWC/32/9 “Assessing uniformity by off-types on basis of more than one sample or sub-samples”. The TWC agreed that values of Type I and Type II errors should be included in each of the examples described in the situations A and B for the development of guidance in document TGP/10. The Type I error is associated with a decision for non-uniformity (rejection of the true null hypothesis) and the Type II error is associated with a decision for uniformity (acceptance of the alternative hypothesis). The TWC agreed that guidance currently provided in TGP/10 was sufficient to address situation C. Annex V of document TWC/32/9 gave an example of a sequential approach applied a single growing cycle and was introduced by an expert from Germany. That included information on Type I and Type II errors. The TWC agreed wording for the guidance for situation D.

45. The TWC received a presentation by electronic means by an expert from Mexico on the SISNAVA software proposed by Mexico for inclusion in document UPOV/INF/16 “Exchangeable software” and agreed that discussion on its conclusion should be continued further. The TWC noted the explanation of the software “Information System (IS) used for Test and Protection of Plant Varieties in the Russian Federation”, as prepared in Annex IV of the document TWC/32/7.

46. The TWC received a presentation from China on "PVP Database in China", as set out in Annex II to document TWC/32/6. The TWC noted that the new software included modules for the management of applications, variety description database, data analysis and image analysis.

47. The TWC received a presentation by an expert from Germany, included in document TWC/32/25, on the development and features of a document management system for variety files used in Germany.

48. The TWC noted the summary of information from an updated survey on hand-held data capture devices provided in Annex I of document TWC/32/27 and that this information might be included in UPOV/INF/22 "Software and equipment used by members of the Union". An expert from Germany gave a presentation on the use of hand-held data capture devices in DUS tests in Germany (document TWC/32/27, Annex II).

49. The TWC considered document TWC/32/11, considering improvements to the effectiveness of the Technical Committee, Technical Working Parties and Preparatory Workshops. Proposals for possible means for improvement were considered and comments were made.

50. Mr. Sami Markkanen was awarded a UPOV bronze medal in recognition of his chairmanship of the TWC from 2012 to 2014.

51. The TWC agreed to hold its third-third session in Natal, Brazil, from June 30 to July 3, 2015, with the preparatory workshop on June 29, 2015.

52. The TWC planned to discuss the following items during the thirty-third 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. Improving the effectiveness of the Technical Committee, Technical Working Parties and Preparatory Workshops
6. TGP documents
7. Information and databases
  - (a) UPOV information
  - (b) Variety description databases
  - (c) Exchangeable software
  - (d) Electronic application systems
8. Variety denominations
9. Uniformity assessment by off-types
10. Experience with new types and species
11. Information on the methods used for data processing for the assessment of distinctness and for producing variety descriptions in China
12. Statistical methods for visually observed characteristics using the DUSTC software package
13. Analysis of variance for "variety x location" (environment) interaction of QN
14. Image analysis system in China
15. Method of calculation of COYU: analysis of the practical exercise
16. Comparison of methods used for producing variety descriptions
17. Information on bulk samples on the routine measurement of Glyceraphanin content in broccoli
18. Weighting matrix in the GAIA software for soybean
19. A rationale for excluding varieties of common knowledge from the second growing cycle when COYD is used
20. Date and place of the next session
21. Future program
22. Report on the session (if time permits)
23. Closing of the session

53. On the afternoon of June 4, the TWC visited the testing station of the Finnish Food Safety Authority (Evira) at Loimaa and viewed field trials of barley, wheat, rye, white clover, red clover and meadow fescue.

#### *Technical Working Party for Fruit Crops*

54. The TWF held its forty-fifth session in Marrakesh, Morocco, from May 26 to 30, 2014. The session was opened by Mrs. Carensa Petzer (South Africa), Chairperson of the TWF.

55. The TWF session was attended by 39 participants from 18 members of the Union, 3 observer States and 2 observer organizations. The Preparatory Workshop was attended by 17 participants from 9 members of the Union and 3 observer States.

56. The TWF was welcomed by Mr. Mohammed Sadiki, Secretary General, Ministry of Agriculture and Marine Fisheries of Morocco and Mr. Amar Tahiri, Chief, Division of Seeds and Plant Control, National Office of Sanitary Food Safety (ONSSA). Mr. Amar Tahiri made a presentation on plant variety protection in Morocco.

57. The TWF considered the proposals concerning possible means of improving the effectiveness of the TWPs and the Preparatory Workshops and made comments, as provided in document TWF/45/32 "Report", paragraph 9.

58. The TWF considered document TWF/45/27 "The duration of DUS test in the fruit sector" and received a presentation from an expert from the European Union on a Community Plant Variety Office of the European Union (CPVO) project on "Reducing the number of obligatory observation periods in DUS testing for candidate varieties in the fruit sector". The TWF requested the leading experts to propose suitable wording for minimum duration period and the number of growing cycles for their draft Test Guidelines in 2015 and requested the expert from the European Union to collate the options developed by the leading experts and to seek to develop possible new standard wording options.

59. The TWF received a presentation from the experts from Germany and New Zealand on the previous work done on harmonized variety descriptions for apple for an agreed set of varieties, as reproduced in document TWF/45/28. The TWF received information from an expert from the European Union on a ring test project on Apple for the management of variety description, to be launched in 2015. The aim of the project will be to identify the reason for differences in variety descriptions in Europe, when using similar varieties and the same rootstock. The TWF requested an expert from the European Union to report on progress with the project at its forty-sixth session.

60. The TWF considered document TWF/45/2 "Molecular Techniques". The TWF also received a presentation by the expert from France on the study concerning molecular techniques and DUS testing made by the Group for Study and Control of Varieties and Seeds (GEVES), explaining how those techniques are being used in France, especially in relation to the detection of resistance genes, as well as the use of molecular tools on fruit trees. The TWF agreed that it would be useful to receive more information on the use of molecular techniques in DUS examination and, in that regard, invited the experts from Spain to provide information on the use of such tools by the *Oficina Española de Variedades Vegetales* (OEVV). The TWF also invited other participants to present their experience on the use of biochemical and molecular techniques in fruit crops at the TWF session in 2015.

61. The TWF received a presentation from Mr. Jean Maison (European Union), the coordinator of the Subgroup as presented in document TWF/45/31 Rev. "Partial Revision of the Test Guidelines for Mandarins". The Leading expert presented the proposal for the partial revision of the Test Guidelines for Mandarin. The TWF agreed to amend characteristic 25 "Anther: viable pollen".

62. The TWF considered document TWF/45/12 "Revision of document TGP/7: Plant Material Submitted for Examination". The TWF considered the examples presented by the experts from the European Union and Germany, on their experiences with regard to plant material submitted for examination, and the solutions that had been developed to address problems. The TWF noted that, in the examination of fruit species, the "cyclophysis" effect, which means the effect of the place where the scion is taken from within the mother plant due to different degrees of maturity could have an impact on the expression of a particular characteristic. If, for example, graftwood material is taken from older trees to produce young trees for comparing with plants of a candidate variety at same age, the fresh grafting will immediately produce

inflorescences that need to be removed during the establishment period, in order to produce a proper tree, with a central leader and sufficient side shoots attached to it.

63. The TWF noted the actions taken to avoid the influence of the method of propagation on the outcome of the DUS examination in certain crops in the European Union and Germany. It was also noted that, in the case of blueberry and grapevine, plant material resulting from meristematic tissue could not be accepted for examination due to the risk of somaclonal variation. The TWF agreed that authorities in charge of receiving plant material for examination should provide guidance on the requirements of material submitted such as quality and age.

64. The TWF agreed that the following draft Test Guidelines should be submitted to the TC for adoption: Acca; Apple rootstocks; Mandarins; and Pecan nut. The TWF agreed to discuss 12 draft Test Guidelines at its forty-sixth session.

65. At the invitation of South Africa, the TWF agreed to hold its forty-sixth session in Mpumalanga, South Africa, from August 24 to 28, 2015, with the preparatory workshop on August 23.

66. 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. Improving the effectiveness of the Technical Committee, the Technical Working Parties and the Preparatory Workshops
5. Molecular Techniques
6. TGP documents
7. Variety denominations
8. Information and databases
  - (a) UPOV information databases
  - (b) Variety description databases
  - (c) Exchangeable software
  - (d) Electronic application systems
9. Uniformity assessment
10. Experiences with new types and species
11. Management of variety collections for DUS examination
12. Duration of DUS tests in the fruit sector
13. Harmonized example varieties for Apple: historical data and possible new developments
14. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee
15. Proposals for partial revision/corrections of Test Guidelines
16. Discussion on draft Test Guidelines (Subgroups)
17. Recommendations on draft Test Guidelines
18. Guidance for drafters of Test Guidelines
19. Date and place of the next session
20. Future program
21. Adoption of the Report of the session (if time permits)
22. Closing of the session

67. On May 29, the TWF visited the Domain Tabouhanit, a 425 hectare orchard cultivated with citrus (mainly oranges, lemons and clementines), nectarines, olives and grapevine, in the neighborhood of Marrakesh. The TWF was welcomed by Mr. Ben Arirou Lahcen, Manager. The TWF also visited Essnoussi Nurseries, founded by Mr. Essnoussi, and managed by his son Nouredine Essnoussi, who welcomed the TWF. Essnoussi Nurseries produce certified plants of olive trees and almonds as well as carob and pomegranate plantlets. The owner explained the procedure for producing certified plants. The TWF visited the Laboratory of Plant Biotechnology of the Regional Center of the *Institut National de Recherche Agronomique* (INRA) in Marrakesh. It was welcomed by Mr. Mohamed Anjarne, Deputy Director, who

explained the main task of the Laboratory for multiplication of date palm tree using organogenesis techniques (somatic embryogenesis and flowering techniques used for research) and the breeding program for disease resistance.

68. Mrs. Carensa Petzer was awarded a UPOV bronze medal in recognition of her chairmanship of the TWF from 2012 to 2014.

#### *Technical Working Party for Ornamental Plants and Forest Trees*

69. The TWO held its forty-seventh session in Naivasha, Kenya, from May 19 to 23, 2014. The session was chaired by Mr. Nik Hulse (Australia), Chairman of the TWO. The detailed report is provided in document TWO/47/28.

70. The meeting was attended by 45 participants, from 16 members of the Union, three observer states and one observer organization. The preparatory workshop was held during the morning of May 18 and was attended by 40 participants.

71. The TWO was welcomed by Mr. James Onsando, Managing Director, Kenya Plant Health Inspectorate Service (KEPHIS), who made a presentation on "Status of plant variety protection in Kenya". Mrs. Jane Ngige, Secretary-General, Kenya Flower Council, also welcomed the participants and made a presentation on "Kenya Flower Council".

72. The TWO considered document TWO/47/11 "Improving the effectiveness of the Technical Committee, Technical Working Parties and Preparatory Workshops" and made comments on the proposals concerning possible means of improving the effectiveness of the TWPs and the preparatory workshops. The TWO agreed that E-workshops, including the use of the web-based TG template and guidance on the presentation of Test Guidelines, should be recorded and made available on the UPOV website and repeated during the preparatory workshops to improve preparation of Test Guidelines and presentation of Test Guidelines at TWPs by the Leading Expert.

73. The TWO considered document TWO/47/12 "Revision of Document TGP/7: Plant Material Submitted for Examination". The TWO received presentations by the experts from the European Union and the Netherlands on experiences with regard to plant material submitted for examination, and the solutions that had been developed to address problems. It noted that a copy of the presentations would be provided as an addendum to document TWO/47/12. The TWO agreed that authorities in charge of receiving plant material for examination should provide guidance on the requirements of material submitted, such as quality and age.

74. The TWO considered document TWO/47/13 "Revision of Document TGP/7: Coverage of the Test Guidelines" and agreed that Approach 3 "Specify existing type of propagation and anticipate future developments" was the most appropriate guidance for Test Guidelines that are developed on the basis of varieties with one type of propagation when varieties may be developed in the future with other types of propagation.

75. The TWO considered document TWO/47/14 "Revision of Document TGP/7: Drafter's Kit for Test Guidelines" and noted the plans for a revision of document TGP/7 and the TG Drafter's webpage for consistency with the introduction of the web-based TG Template in 2014, as set out in document TWO/47/14, paragraphs 6 to 8.

76. The TWO considered document TWO/45/15 "Revision of Document TGP/8: Part I: DUS Trial Design and Data Analysis, New Section: Minimizing the Variation due to Different Observers" and agreed that the draft guidance in the Annex to document TWO/47/15 should continue to be developed for inclusion in a future revision of document TGP/8 on minimizing the variation due to different observers, including guidance on PQ and QN/MG characteristics, in conjunction with the points raised by the expert from Australia. The TWO agreed that the document should focus on variation between observers at the authority level and not on minimizing observer variation between authorities.

77. The TWO considered document TWO/47/19 "Revision of Document TGP/8: Part II: Techniques Used in DUS Examination, New Section: Guidance of Data Analysis for Blind Randomized Trials". The TWO agreed that blind randomized trials were rarely used. The TWO noted that blind randomized trials were used: in Brazil to confirm, in some cases, the assessment of distinctness under a breeder-based testing system for agricultural crops and vegetables; in New Zealand, for some fruit crops and in cases of dispute

regarding distinctness; and in the United Kingdom and the Netherlands to confirm lack of distinctness between varieties.

78. The TWO considered document TWO/47/22 "Revision of Document TGP/9: Section 2.5: Photographs" and agreed with the proposed guidance on photographs for inclusion in document TGP/9, Section 2.5 "Photographs".

79. The TWO considered document TWO/47/9 "Assessing Uniformity by Off-Types on Basis of more than one Sample or Sub Samples" and the situations described in the Annexes I to IV as a basis to develop guidance in document TGP/10. The TWO agreed that clarification should be provided on the decision to be taken in Situation B, Alternative (a) "the trial is repeated at both locations for a second year", in case after repeating a trial for the second year a variety is within the uniformity standard in one growing location but is not within the uniformity standard in the other growing location.

80. The TWO considered document TWO/47/23 "Revision of Document TGP/14: Section 2.4: Apex/Tip Shape Characteristics" and considered the proposal to develop an explanation on the inclusion of a state of expression based on a differentiated tip in shape of apex characteristics and proposed that document TGP/14, section 2.4 be amended accordingly. The TWO agreed that the approach in document TGP/14 for shape of apex and tip characteristics was most suitable for leaves or larger structures and should be used in particular cases only.

81. The TWO considered document TWO/47/10 and received a presentation on a web-based Test Guidelines Template (TG Template) for drafters of Test Guidelines by electronic means from the Office of the Union. The TWO noted the request for Leading Experts to participate in the testing of Version 1 of the web-based TG Template. The TWO agreed that the web-based TG Template should allow the printing of comments made by interested experts, sorted by interested expert or characteristic, and noted that assistance would be provided by the UPOV Office for Leading Experts on the use of the web-based TG Template, if requested.

82. The TWO considered document TWO/47/25 "Partial revision of the Test Guidelines for Buddleja (document TG/263/1)" and document TWO/47/26 "Partial revision of the Test Guidelines for Gladiolus (document TG/108/4)". The TWO agreed that these Test Guidelines, as amended by the TWO, should be put forward for adoption by the Technical Committee.

83. The TWO agreed to submit six Test Guidelines to the Technical Committee for adoption: Aloe; Campanula; Carnation (Revision); China Aster; Cosmos; and Regal Pelargonium (Revision). At its forty-eighth session to be held in 2015, the TWO planned to discuss 13 Test Guidelines, consisting of 4 revisions and 9 new Test Guidelines.

84. At the invitation of the United Kingdom, the TWO agreed to hold its forty-eighth session in Cambridge, from September 14 to 18, 2015, with the preparatory workshop on September 13, 2015.

85. 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. Uniformity assessment
9. Experience with new types and species

10. Improving the effectiveness of the Technical Committee, the Technical Working Parties and the Preparatory Workshops
11. Influence of different sources on vegetatively propagated material used in DUS examination
12. Examples of different growing practice in DUS testing
13. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee
14. Discussion on draft Test Guidelines
15. Recommendation on draft Test Guidelines
16. Guidance for drafters of Test Guidelines
17. Date and place of the next session
18. Future program
19. Report on the session (if time permits)
20. Closing of the session

86. On the afternoon of May 21, 2014, the TWO visited the facilities of Nini Limited, a cut rose company based in Naivasha. The TWO was welcomed by Mr. Philip Kuria, Post-harvest and Export Supervisor, and Ms. Faith Ndunge, Officer-in-Charge, KEPHIS, Naivasha, and received a presentation by Mr. Moses Wachira, Senior Production Supervisor. It was explained that rose production in Nini began in 1998 and had expanded to the current 44 hectares of greenhouses and 600 permanent employees, 70% of which were women. Currently, 25 varieties from seven different breeders were being produced with 8 different colors on a scale of production of 2 million cut flowers per week. Mr. Kuria reported on the collaboration for market development with the breeders of the varieties used and highlighted the important role of plant variety protection for the success of the activities of the company.

87. Mr. Nik Hulse was awarded a UPOV bronze medal in recognition of his chairmanship of the TWO from 2012 to 2014.

#### *Technical Working Party for Vegetables*

88. The forty-eighth session of the TWV was held from June 23 to 27, 2014 in Paestum, Italy close to CRA-SCS Seed Testing and Certification Centre, the Italian DUS testing station for vegetables in Battipaglia.

89. To commemorate the sad loss of Mr. Francois Boulineau, the TWV Chairman, participants observed a minute of silence at the beginning of the Session.

90. The TWV elected Mr. Kees van Ettehoven (the Netherlands) and Mrs. Swenja Tams (Germany) as joint *ad hoc* Chairpersons.

91. The preparatory workshop, held on June 22, 2014, was attended by 19 participants from 8 members. The TWV Session was attended by 32 participants, representing 17 members and 3 observer organizations.

92. The TWV was welcomed by Mr. Pier Giacomo Bianchi, Head of Agricultural Research Council – Centre (CRA-SCS) in a video message. Mrs. Anna Giulini, Researcher, CRA-SCS made a presentation on “PBR at glance in Italy” on behalf of Mr. Bianchi.

93. On the afternoon of June 26, 2014, the TWV visited the CRA-SCS Seed Testing and Certification Centre in Battipaglia, where it received a presentation by Mrs. Romana Bravi, Head of the Battipaglia Office, CRA-SCS. The TWV visited DUS trials for tomato, melon, zucchini, cucumber and other species.

94. The TWV considered the revisions of TGP documents. During the discussion of the TGP documents, the TWV considered document TWV/48/12 “Revision of Document TGP/7: Plant Material Submitted for Examination” and discussed the implication of applications for vegetatively propagated varieties in a commonly seed-propagated species. Another important issue for the TWV was the use of disease resistance in DUS examination regarding the obligatory testing of those characteristics.

95. A number of new Test Guidelines were finalized to be put forward to the TC: namely, Bottle Gourd, Calabash (*Lagenaria siceraria* (Molina) Standl.); and also '*Cucurbita maxima* x *Cucurbita moschata*'. Both species are used as rootstocks for vegetative propagated varieties. Cassava (*Manihot esculenta* Crantz.), was also finalized.

96. Partial revisions of the Test Guidelines for Cucumber, French Bean, Shiitake, Spinach and for a number of Test Guidelines covering *Brassica* species were agreed. The revision of Lentils was also finalized.
97. For the forty-ninth session, it is planned to discuss 2 new Test Guidelines, 6 revisions and 4 partial revisions.
98. At the invitation of the European Union, the TWV agreed to hold its next meeting in Angers, France, from June 15 to 19, 2015, with the preparatory workshop on June 14, 2015.
99. 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
    - (a) Reports from members and observers
    - (b) Reports on developments within UPOV
  4. Molecular Techniques
    - (c) Developments in UPOV
    - (d) Presentation on the use of molecular techniques in DUS examination
  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. Uniformity assessment
  9. Management of reference collections
  10. New issues arising for DUS examination
  11. Use of disease resistance characteristics in DUS examination
  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

*Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular*

100. The BMT held its fourteenth session in Seoul, Republic of Korea, from November 10 to 13, 2014. The BMT was welcomed by Mr. Hyun Kwan Shin, Director General, Korea Seed & Variety Service (KSVS) and received a presentation on plant variety protection in the Republic of Korea from Mr. Moo Kyung Yoon, Director of Plant Variety Protection Division, KSVS. The session was opened by Mr. Alejandro F. Barrientos Priego (Mexico), Chairman of the BMT.
101. A preparatory workshop was held on November 9, 2014, and attended by 20 participants from 7 members of the Union, 1 observer State and 1 observer organization. The BMT session was attended by 44 participants from 10 members of the Union, 1 observer State and 5 observer organizations.
102. The BMT received the following presentations concerning new developments in biochemical and molecular techniques by DUS experts, biochemical and molecular specialists, plant breeders and relevant international organizations:

- The Use of Reference Varieties in Varietal Distinctness: An Approach under Investigation in the United States of America for Potential Application in Plant Variety Protection
- Identification of Rice Varieties Using Genic Markers for Three DUS Characteristics
- The use of Molecular Markers (SNP) for Maize DUS Testing
- Potential Uses of Molecular Markers in Management of Rose Varieties for the PVP System
- Development of EST-SSR Markers of Lettuce and Variety Identification Using EST-SSR Markers
- Construction of DNA Profile Database of Strawberry Varieties Using SSR Markers
- Use of Molecular Marker Techniques for Selection of 'Similar Variety' about 'Candidate Variety'
- Improving Efficiency of DUS Testing of Perennial Ryegrass by Combining Morphological and Molecular Variety Distances
- A European Potato Database as Centralized Collection of Varieties of Common Knowledge
- Molecular Markers as Predictors for 'Traditional' Characteristics
- Ownership and Use of DUS Samples and of DNA and DNA Data During and After the DUS Tests

103. The BMT received the following presentation concerning the use of molecular techniques in examining essential derivation:

- Identification of SNP Markers to aid Assessment of Essential Derivation in Maize

104. The BMT received the following presentations concerning the use of molecular techniques in variety identification:

- Use of DNA Variety Identification Technique for Measures Against the Infringement of Plant Breeders' Rights in Japan
- Determining a Threshold for Genetic Conformity In Potato Seedlings

105. On November 12, 2014, OECD, UPOV, ISTA held a Joint Workshop (Workshop) in Seoul, Republic of Korea, in conjunction with the BMT session, under the chairmanship of Mr. Kees van Ettehoven (Netherlands). The Workshop received the following presentations on the use of DNA techniques in OECD, UPOV, ISTA and ISO:

- Introduction to the OECD Seed Scheme and the situation with regard to molecular techniques
- Introduction to UPOV and the situation with regard to molecular techniques
- Introduction to ISTA and the situation with regard to molecular techniques
- Introduction to ISO and the situation with regard to molecular techniques
- Existing areas of cooperation between OECD, UPOV and ISTA
- Opportunities for cooperation between OECD, UPOV, ISO and ISTA with regard to molecular techniques

106. The Workshop agreed that it would be useful to develop a joint document explaining the principle features (e.g. DUS, variety identification, variety purity, etc.) of the systems of OECD, UPOV and ISTA. It was also agreed that it would be useful for mutual understanding, to repeat the joint workshop at relevant meetings of the OECD and ISTA.

107. The Workshop agreed to propose an inventory by UPOV, OECD and ISTA of the use of molecular marker techniques, by crop, with a view to developing a document containing that information, in a similar format to UPOV document UPOV/INF/16 "Exchangeable Software". It was noted that OECD had already collected some information regarding the use of molecular techniques by its designated authorities.

108. In response to the invitation received from Russian Federation, the BMT agreed to hold its fifteenth session and a preparatory workshop in Moscow, Russian Federation, in May 2016.

109. The BMT planned to discuss the following items at its fifteenth session:

1. Opening of the session
2. Adoption of the agenda
3. Reports on developments in UPOV concerning biochemical and molecular techniques

4. Short presentations on new developments in biochemical and molecular techniques by DUS experts, biochemical and molecular specialists, plant breeders and relevant international organizations
5. Report of work on molecular techniques in relation to DUS examination
6. International guidelines on molecular methodologies
7. Variety description databases
8. Methods for analysis of molecular data
9. The use of molecular techniques in examining essential derivation<sup>1</sup>
10. The use of molecular techniques in variety identification<sup>1</sup>
11. Cooperation between OECD, UPOV, ISTA and ISO
12. Date and place of next session
13. Future program
14. Report of the session (if time permits)
15. Closing of the session

110. Mr. Alejandro Barrientos Priego was awarded a UPOV bronze medal in recognition of his chairmanship of the BMT from 2012 to 2014.

#### Matters arising from the Technical Working Parties

111. The TC considered document TC/51/3 and noted the developments in the TWP's concerning:

- (a) Duration of DUS tests in the fruit sector;
- (b) Use of disease resistance characteristics in DUS examination;
- (c) Data loggers;
- (d) Experiences with new types and species;
- (e) Management of variety collections for DUS examination; and
- (f) Use of statistical approaches in DUS examination

112. The TC noted that the Community Plant Variety Office (CPVO) of the European Union would make a presentation on the results of a study to assess the possible effects of endophyte infection in ryegrass and tall fescue on the expression of DUS characteristics to the TWA in 2016. The TC also noted that experts from the European Union would collate the options developed by the leading experts and seek to develop possible new standard wording options for the minimum period of DUS testing and the number of growing cycles for some fruit Test Guidelines. The European Union suggested that this would be a useful exercise in other TWP's as well.

#### TGP documents

##### *Matters for adoption by the Council in 2015*

##### *TGP/0: List of TGP Documents and Latest Issue Dates*

113. The TC considered document TC/51/5 "TGP Documents" and noted that the Council would be invited to adopt document TGP/0/8, in order to reflect the adoption of TGP documents.

##### *TGP/9: Examining Distinctness*

114. The TC noted the new section on "Guidance on number of plants to be examined (for Distinctness)" already agreed by the TC for document TGP/9, as set out in Annex I to document TC/51/5.

115. The TC considered document TC/51/23 and the proposals of the following sections of TGP/9:

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<sup>1</sup> Breeders-Day

(i) Revision of document TGP/9: Section 1.6: Schematic Overview of TGP Documents Concerning Distinctness

116. The TC agreed that the flow diagram in TGP/9, Section 1.6 “Schematic overview of TGP documents concerning distinctness”, should be revised as set out in Annexes I and II to document TC/51/23.

(ii) Revision of document TGP/9: Section 2.5: Photographs

117. The TC considered the proposed guidance on photographs for inclusion in document TGP/9, Section 2.5 “Photographs”, and agreed the guidance to read as follows:

“2.5.3 The suitability of photographs for the identification of similar varieties is strongly influenced by the quality of the photographs taken by the authority for the varieties in the reference collection and the photograph of the candidate variety provided by the applicant with the Technical Questionnaire. Comprehensive guidance for taking suitable photographs is provided in document TGP/7, GN 35. The guidance was developed in particular for the applicants to provide suitable photographs of the candidate variety. The same instructions are important and useful for the authorities to take photographs of the varieties in the variety collection under standardized conditions.”

118. The TC noted that editorial changes needed to be made to the draft text in German and recalled that the language experts of the editorial committee would be requested to check the translations in French, German and Spanish of all documents before they were prepared for adoption by the Council.

119. The German translation should read as follows:

„2.5.3 Die Eignung von Fotos für die Identifikation ähnlicher Sorten wird durch die Qualität der von der Behörde für die Sorten in der Sortensammlung erstellten Fotos und der vom Antragsteller zusammen mit dem Technischen Fragebogen eingereichten Fotos stark beeinflusst. Eine ausführliche Anleitung für die Aufnahme geeigneter Fotos wird in Dokument TGP/7, GN 35, erteilt. Die Anleitung wurde insbesondere für die Antragsteller ausgearbeitet, damit sie geeignete Fotos der Kandidatensorte einreichen. Dieselben Anweisungen sind auch für die Behörden wichtig und zweckdienlich, um Fotos der Sorten in der Sortensammlung unter genormten Bedingungen zu erstellen.“

(iii) Revision of document TGP/9: Sections 4.3.2 “Single record for a group of plants or parts of plants (G)” and 4.3.4 “Schematic summary”

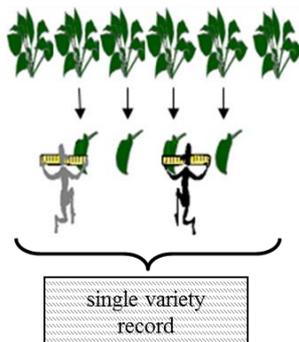
120. The TC considered the proposed example of a single record for a group of plants (MG) taken on plant parts for inclusion in document TGP/9, Section 4.3.2 “Single record for a group of plants or parts of plants (G)” and Section 4.3.4 “Schematic Summary”, and agreed the guidance to read as follows:

“Example (MG)

“Measurement (MG): ‘Leaf blade: width’ in *Hosta* (vegetatively propagated): a representative measurement in the plot.”

121. The TC agreed that the illustration for inclusion in Subsection 4.3.4, should be amended to appear as follows:

*Section 4.3.2.3*  
*Example (MG):* Leaf blade:  
width  
(*hosta*: vegetatively  
propagated)



*TGP/14: Glossary of Terms Used in UPOV Documents:*

(i) Section 2.4: “Apex/tip shape characteristics”

122. The TC considered the revision of document TGP/14 Section 2.4 as presented in document TC/51/25 and agreed that the wording should read as follows:

*“2.4 Apex/Tip Shape Characteristics*

“2.4.1 The APEX (apical or distal part) of an organ or plant part is the end furthest from the point of attachment. In some cases, the distal extremity of the apex may be differentiated into a ‘TIP’.

“2.4.2 In considering the approach to describe the apex, the size of the organ and the number of apex shapes should be taken into account. Apex characteristics can be described in simple terms and if a differentiated tip is present it could be further described as a separate characteristic. Generally, it is not necessary to separate the apex shape characteristic into differentiated tip and apex characteristics.

“2.4.3 In cases where it is appropriate to separate into differentiated tip and apex characteristics, the shape of the apex is taken as the general shape, excluding any differentiated tip (if present) and the separation of tip and apex should be indicated in the explanation of the characteristic. For example:

[...]”

123. The TC noted that editorial changes needed to be made to the draft text in German and recalled that the language experts of the editorial committee would be requested to check the translations in French, German and Spanish of all documents before they were prepared for adoption by the Council.

124. The German translation should read as follows:

*„2.4 Merkmale für die Form des Apex/der Spitze*

2.4.1 Der APEX (apikaler oder distaler Teil) eines Organs oder eines Pflanzenteils ist das am weitesten von der Ansatzstelle entfernte Ende. In einigen Fällen kann das distale Ende des Apex in eine ‚AUFGESETZTE SPITZE‘ differenziert sein.

2.4.2 Die Vorgehensweise zur Beschreibung des Apex sollte die Größe des Organs und die Anzahl der Formen für den Apex berücksichtigen. Die Merkmale für den Apex lassen sich in einfachen Begriffen beschreiben. Wenn eine differenzierte Spitze vorhanden ist, könnte diese als getrenntes Merkmal näher beschrieben werden. In der Regel ist es jedoch nicht notwendig, die Merkmale für die Apex-Form in aufgesetzte Spitze und Apex aufzuteilen.

2.4.3 Wenn es angebracht ist, differenzierte Spitze und Apex in getrennte Merkmale aufzuteilen, wird die Form des Apex als allgemeine Form, ohne differenzierte Spitze (sofern vorhanden), angenommen, und die Aufteilung von aufgesetzter Spitze und Apex sollte in der Erläuterung des Merkmals angegeben werden, beispielsweise:

[...]“

(ii) Subsection 3: “Color”

125. The TC noted the correction to the French translation of the color group “dark purple red” to read “rouge pourpre foncé” in document TGP/14 Subsection 3: “Color”.

*Future Revision of TGP Documents*

*TGP/7: Development of Test Guidelines*

(i) Revision of document TGP/7: Drafter’s Kit for Test Guidelines

126. The TC agreed that a detailed proposal for a revision of document TGP/7 be presented to the TWPs, at their sessions in 2015 to reflect the introduction of the web-based TG Template.

(ii) Revision of document TGP/7: Plant Material Submitted for Examination

127. The TC noted the information provided in document TC/51/14 Rev.

128. The TC agreed that it would not be necessary to develop further guidance to address issues relating to plant material submitted for examination beyond that already provided in documents TG/1/3 "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of new Varieties of Plants", TGP/7 "Development of Test Guidelines" and TGP/9 "Examining Distinctness".

129. The TC agreed that authorities should provide guidance on the requirements of material submitted for DUS examination to the avoid possible effect of the method of propagation (e.g. micropropagation ) in the expression of DUS characteristics.

(iii) Revision of document TGP/7: Coverage of the Test Guidelines

130. The TC considered document TC/51/15.

131. The TC agreed with the proposal to amend document TGP/7 to add new standard wording in the TG template, Chapter 4.2 "Uniformity", and amend ASW 8 (c) to provide guidance for Test Guidelines that are developed on the basis of varieties with one type of propagation when varieties may be developed in the future with other types of propagation, as follows:

"New standard wording: TG template, Chapter 4.2:

"These Test Guidelines have been developed for the examination of [*type or types of propagation*] varieties. For varieties with other types of propagation the recommendations in the General Introduction and document TGP/13 'Guidance for new types and species', Section 4.5: 'Testing Uniformity' should be followed."

"ASW 8 (c)

"(c) *Uniformity assessment by off-types (all characteristics observed on the same sample size)*

"For the assessment of uniformity of [self-pollinated] [vegetatively propagated] [seed-propagated] varieties, a population standard of { x } % and an acceptance probability of at least { y } % should be applied. In the case of a sample size of { a } plants, [{ b } off-types are] / [1 off-type is] allowed."

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

(i) Revision of document TGP/8: Part I: DUS Trial Design and Data Analysis, New Section: Minimizing the Variation due to Different Observers

132. The TC considered document TC/51/16 and the draft guidance for inclusion in document TGP/8 on minimizing the variation due to different observers of the same trial, as reproduced in the Annex to document TC/51/16, in conjunction with the comments of the TWPs at their sessions in 2014.

133. The TC agreed to request the expert from Australia to continue developing the document to be presented to the TWPs at their sessions in 2015, and to amend the title to that used in the Annex to document TC/51/16 "Minimizing the variation due to different observers of the same trial".

(ii) Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, Section 9: the Combined-Over-Years Uniformity Criterion (COYU)

134. The TC considered document TC/51/17 on developments concerning the method of calculation of COYU and a practical exercise using real data to compare decisions made using the current and the proposed improved method.

135. The TC noted that participants of the exercise to test the software on the new method for the calculation of COYU should:

- (i) seek to define probability levels to match decisions using the previous COYU method;
- (ii) run the test for rejection probabilities of 1, 2 and 5% levels; and
- (iii) assess whether the results are consistent in all crops

136. The TC noted that the expert from the United Kingdom had distributed the software module for calculation of COYU and the guidance document to participants of the exercise.

137. The TC noted that the experts from Czech Republic, France, Finland, Germany, Kenya, Poland and United Kingdom would participate in the exercise to test the new software on COYU.

138. The TC noted that a report on the practical exercise and the development of DUST module would be presented at the thirty-third session of the TWC.

(iii) Revision of document TGP/8: Part II: Selected Techniques used in DUS Examination, New Section: Examining DUS in Bulk Samples

139. The TC considered document TC/51/18.

140. The TC agreed to request the experts from the Netherlands to provide further information on the routine measurement of glycoraphanin content, as presented in the Annex to document TC/51/18.

141. The TC agreed that further information on fulfilling the requirements of a DUS characteristic should be provided in the example of a characteristic examined on the basis of a bulk sample, as presented in the Annex to document TC/51/18.

142. The TC agreed to consider further whether the analysis of individual plants to validate characteristics examined on the basis of bulk samples was necessary, and the possible cost implications, and invited the TWPs to propose alternative approaches for the examination of uniformity. In that regard, it proposed that the previous work of the TWC, on the use of sub-samples, be reviewed as a starting point.

143. The TC agreed to consider further whether characteristics examined on the basis of bulk samples should be assessed on the basis of the number of plants recommended in the Test Guidelines under Chapter 4.1.4.

144. The TC agreed that the determination of states of expression should be based on existing variation between varieties and considering environmental influence.

145. The TC welcomed the offer of France to provide other examples of characteristics based on bulk samples and invited other members to provide examples.

(iv) Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, New Section: Data Processing for the Assessment of Distinctness and for Producing Variety Descriptions

146. The TC noted the information provided in document TC/51/19.

147. The TC welcomed the proposal made by the TWC, as presented in paragraph 32 of document TC/51/19, to compare the results of the practical exercise presented by the different participants to identify differences in the results obtained for further understanding of the different methodologies, for consideration at the thirty-third session of the TWC, to be held in Natal, Brazil.

148. The European Union reported that the project on a ring test on Apple for the management of variety description to be launched in 2015 had been suspended because of the high costs involved..

(v) Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, New Section: Guidance for Blind Randomized Trials

149. The TC considered document TC/51/20.

150. The TC noted that blind randomized trials were not routinely used and agreed that the existing guidance in documents TGP/8: Part I: "DUS trial design and data analysis" and TGP/9 "Examining distinctness" was sufficient to address the matter.

(vi) Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, New Section: Examining Characteristics Using Image Analysis

151. The TC considered document TC/51/21 and the proposed draft guideline on “Examining Characteristics Using Image Analysis”, as presented in the Annex to document TC/51/21, in conjunction with the comments made by TC-EDC at its meeting in 2015, as set out in paragraph 16 of document TC/51/21.

152. The TC agreed with the proposed guidance on “Examining Characteristics Using Image Analysis”, subject to the following amendments:

Annex, paragraph 5	to add “in cases where image analysis is automated” at the end of the first sentence
Annex, paragraph 14	to delete heading above paragraph
Annex, paragraph 18	to read “RHS colour chart”
Annex, paragraph 19	to be deleted
Annex, paragraph 20	to replace “home-made” by “in-house”
Annex, paragraph 22	to read “...possible to use it for a wider range of <u>standard UPOV</u> characteristics in future.”

(vii) Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, New Section: Statistical Methods for Visually Observed Characteristics

153. The TC considered document TC/51/22.

154. The TC encouraged members of the Union to present to the TWPs the ways in which they intended to use the new statistical method for visually observed characteristics in DUS examination.

155. The TC agreed to remove the document “Statistical methods for visually observed characteristics” from the program for the revision of document TGP/8 for the time being, and to consider the matter under a separate agenda item.

156. The TC noted that an expert from China had been invited to make a presentation at the next session of the TWC on the analysis of visually observed characteristics using the DUST China (DUSTC) software package using the data set of meadow fescue provided by Finland.

*TGP/10: Examining uniformity*

Revision of document TGP/10: New section: Assessing Uniformity by Off-Types on Basis of More than One Sample or Sub-Samples

157. The TC considered document TC/51/24.

158. The TC agreed with the proposals made by the TWPs at their sessions in 2014 and the TC-EDC at its meeting in January 2015, on the draft guidance for inclusion in a future revision of document TGP/10, as presented in Annexes I to IV to document TC/51/24.

159. The TC agreed that the title of the document should be amended to read: “Assessing uniformity by off-types on basis of more than one growing cycle or on the basis of sub-samples”;

160. The TC agreed that situations A and B as presented in Annexes I and II to document TC/51/24 should be combined, with an explanation that two independent growing cycles could take place in a single location in different years, or in different locations in the same year, according to document TGP/8 Part I, Sections 1.2 and 1.3

161. The TC agreed to invite members of the Union to present to the TWPs and the TC information on the risks, benefits, cost implications and other relevant aspects in their choice of Approach 1 and 2 when assessing uniformity by off-types on basis of more than one sample or sub-sample, as set out in Annexes I and II to document TC/51/24.

162. The TC agreed to clarify the possibility to reject a variety on the basis of a lack of uniformity after a single growing cycle. It further agreed to review the fifth example to be more realistic, given that a variety with 10 off-types in the first growing cycle would probably be rejected after the first growing cycle. .

*Possible future revision of TGP documents*

*TGP/5: Experience and cooperation in DUS testing*

(i) Revision of document TGP/5: Section 3: Technical Questionnaire to be Completed in Connection with an Application for Plant Breeders' Rights

163. The TC agreed that document TGP/5: Section 3 should read as follows:

“A model Technical Questionnaire is provided in document TGP/7 ‘Development of Test Guidelines’: Annex 1: TG Template: Chapter 10. The UPOV Test Guidelines ([http://www.upov.int/edocs/tgpdocs/en/tgp\\_7.pdf](http://www.upov.int/edocs/tgpdocs/en/tgp_7.pdf)) contain, in Chapter 10, a specific Technical Questionnaire for varieties covered by those Test Guidelines.”

(ii) Revision of document TGP/5: Section 8: Cooperation in Examination

164. The TC agreed that document TGP/5: Section 8 should read as follows:

“A synopsis of cooperation in examination between authorities is provided in the form of a Council document:

“C/[session]/5 (e.g. C/49/5), ([http://www.upov.int/meetings/en/topic.jsp?group\\_id=251](http://www.upov.int/meetings/en/topic.jsp?group_id=251)).”

(iii) Revision of document TGP/5: Section 9: List of Species in which Practical Knowledge has been Acquired or for which National Test Guidelines have been Established

165. The TC agreed that document TGP/5: Section 9 should read as follows:

“A list of genera and species in which practical knowledge has been acquired or for which national test guidelines have been established is provided in the Technical Committee document:

“TC/[session]/4 (e.g. TC/51/4), ([http://www.upov.int/meetings/en/topic.jsp?group\\_id=254](http://www.upov.int/meetings/en/topic.jsp?group_id=254)).

*TGP/7: Development of Test Guidelines*

(i) Use of proprietary photographs and illustrations in Test Guidelines

166. The TC agreed that guidance for drafters of Test Guidelines should be developed in relation to text, photographs or illustrations that could be subject to third party rights.

(ii) Regional sets of example varieties

167. The TC agreed that guidance should be developed on the term “region” and the basis for selecting example varieties in a region in relation to the establishment of regional sets of example varieties for Test Guidelines.

*TGP/14: Glossary of terms used in UPOV documents*

(i) Definition of color groups from RHS Colour Charts

168. The TC agreed to invite members of the Union to present to the TWPs, at their sessions in 2015, how varieties were allocated to color groups.

169. The TC also agreed that representatives of the Royal Horticultural Society (RHS) should be invited to participate in discussion on this matter during the next session of the TWO, to be held in Cambridge, the United Kingdom, in 2015, with a view to possible harmonization on terminology.

170. The TC agreed that discussions on this matter should be under a separate agenda item, outside the context of revision of document TGP/14.

*Program for the development of TGP documents*

171. The TC agreed the program for the development of TGP documents, as set out in the Annex II to document TC/51/5, subject to its conclusions above.

Molecular techniques

*Discussion on molecular techniques*

172. The TC received the following presentations on molecular techniques (in order of presentation):

Reports on developments in UPOV Concerning Biochemical and Molecular Techniques	UPOV Office
Marker-Assisted Selection of "Similar Variety" in DUS Testing	Republic of Korea (Mr. Seung-In Yi)
The Use of Reference Varieties in Varietal Distinctness: An Approach under Investigation in the United States of America for Potential Application in Plant Variety Protection	United States of America (Mr. Paul Nelson)
A European Potato Database as Centralized Collection of Varieties of Common Knowledge	United Kingdom (Mr. Alex Reid)
Development of EST-SSR Markers of Lettuce and Application for Variety Identification	Republic of Korea (Mr. Seung-In Yi)
Ownership and Use of DUS Samples and of DNA and DNA Data During and After the DUS Tests	Netherlands (Mr. Kees van Ettehoven)
Existing Areas of Cooperation Between OECD, UPOV and ISTA	UPOV Office

173. The TC noted that a copy of the presentations would be made available on the UPOV website.

174. The TC considered document TC/51/11 Rev. "Molecular techniques".

175. The TC noted the report on developments in the TC, TWPs and BMT, as set out in paragraphs 4 to 22 of document TC/51/11 Rev.

176. The TC approved the program for the fifteenth session of the BMT, to be held in 2016, including the dedication of a particular date ("Breeders' Day"), for the items on the use of molecular techniques in the consideration of essential derivation and in variety identification, as set out in paragraph 22 of document TC/51/11 Rev.

177. The TC agreed to develop a joint document explaining the principal features of the systems of OECD, UPOV and ISTA (e.g. DUS, variety identification, variety purity, etc.), subject to the approval of the Council and in coordination with OECD and ISTA.

178. The TC noted that the OECD/UPOV/ISTA Joint Workshop on Molecular Techniques had agreed that it would be useful to repeat the joint workshop at relevant meetings of the OECD and ISTA and, in that regard, that the Technical Working Group Meeting of the OECD Seed Schemes, had agreed that another OECD/UPOV/ISTA Joint Workshop on Molecular Techniques should be organized either back-to-back with the Annual Meeting of the OECD Seed Schemes, to be held in Paris, in June, 2015, or in conjunction with the Technical Working Group Meeting to be held in January, 2016.

179. The TC agreed to develop an inventory on the use of molecular marker techniques, by crop, with a view to developing a joint OECD/UPOV/ISTA document containing that information, in a similar format to UPOV document UPOV/INF/16 "Exchangeable Software", as set out in paragraph 26 of document TC/51/11, subject to the approval of the Council and in coordination with OECD and ISTA. It agreed that it would be necessary to establish criteria and a process for information to be added to the document.

180. The TC agreed that the BMT, at its fifteenth session, should develop lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques, for consideration by the TC.

181. The TC considered the development of a draft question and answer concerning the information on the situation in UPOV with regard to the use of molecular techniques for a wider audience, including the public in general. The TC agreed to request the TWPs, at their sessions in 2015, to consider the following initial draft discussed during the TC session:

“Is it possible to obtain protection of a variety on the basis of its DNA-profile?”

“For a variety to be protected, it needs to be clearly distinguishable from all existing varieties on the basis of characteristics that are physically expressed, e.g. plant height, time of flowering, fruit color, disease resistance etc. [Molecular techniques (DNA profiles) may be used as supporting information].

“A more detailed explanation is provided in the FAQ ‘Does UPOV allow molecular techniques (DNA profiles) in the examination of Distinctness, Uniformity and Stability (“DUS”)?’

“See also:

“What are the requirements for protecting a new plant variety?”

### Variety denominations

182. The TC considered document TC/51/12.

183. The TC noted the work on the possible development of a UPOV similarity search tool for variety denomination purposes by the Working Group for the Development of a UPOV Denomination Similarity Search Tool (WG-DST), including the test study, as set out in paragraphs 4 to 15 of document TC/51/12. The TC also noted that the result of the test study would be reported to the second meeting of the WG-DST and the most effective search tool would be described and documented.

184. The TC noted the proposed revision of document UPOV/INF/12 in relation to changes of registered variety denominations, as set out in paragraph 20 of document TC/51/12, and that, subject to agreement by the CAJ, that revision would be proposed for adoption by the Council at its forty-ninth ordinary session, to be held on October 28, 2015.

185. The TC noted that the CAJ, at its seventy-first session, may invite the WG-DST to consider the comments by the CAJ-AG, at its ninth session, on the proposals in document UPOV/INF/12/5 Draft 2 concerning Sections 2.2.2 (b), 2.3.1 (c) and (d), and 2.3.3, as set out in paragraph 26 of document TC/51/12.

186. The TC noted that the CAJ, at its seventy-first session, may suggest that the proposals of the CAJ-AG under Sections 2.2.2 (c), 4 (a) and 4 (e)(i) be considered by the CAJ, at its seventy-second session, as set out in paragraph 27 document TC/51/12.

187. The Delegation of Argentina reported that it was conducting a study on variety denominations that would be presented to the CAJ at its session on October 2015.

### Information and databases

#### *(a) UPOV information databases*

188. The TC considered document TC/51/6.

#### *GENIE database*

#### Information on type of crop

189. The TC noted the information on allocation of crop type(s) for UPOV codes currently used in the PLUTO database, as set out in paragraphs 12 and 13 of document TC/51/6.

190. The TC noted that information on crop type(s) would be introduced in the GENIE database and the GENIE database would be modified to show the crop type(s) for each UPOV Code by the end of March 2015.

191. The TC noted that a standard report for TWP allocations for UPOV codes would be introduced on the GENIE webpage by the end of March 2015.

192. The TC agreed that the Office of the Union would prepare tables of allocation of crop type(s) for UPOV codes used in the PLUTO database for the first time for checking by the relevant authorities, for each of the TWP sessions in 2015.

*UPOV code system*

193. The TC considered the developments concerning UPOV codes, as set out in document TC/51/6, paragraph 17. The TC noted that in 2014, 577 new UPOV codes had been created and amendments made to 37 existing UPOV codes. The TC also noted that the total number of UPOV codes in the GENIE database at the end of 2014 was 7,808.

194. The TC agreed that the Office of the Union would prepare tables of UPOV codes additions and amendments, for checking by the relevant authorities, for each of the TWP sessions in 2015, as set out in document TC/51/6, paragraph 18.

*PLUTO database*

195. The TC noted the summary of contributions to the PLUTO database from 2012 to 2014 and the current situation of members of the Union on data contribution, as presented in document TC/51/6, Annex II.

196. The TC noted that the number of submissions to the PLUTO database in Annex II to document TC/51/6 did not include all of the submissions made by the CPVO during transitional arrangements for online uploading of data and noted that the Office would provide a corrected version of Annex II.

197. The TC noted that an additional column in the PLUTO search screen, showing the date on which the information was provided, would be introduced by the end of March 2015.

198. The TC agreed to make both the "Denomination" and "Breeder's Ref" fields searchable, independently or in combination, by denomination search tools on the "Denomination Search" page of the PLUTO database, as set out in document TC/51/6, paragraphs 28 and 29, and noted that the conclusions of the TC on that matter would be reported to the CAJ at its seventy-first session, to be held in Geneva, on March 26, 2015.

199. The TC noted the information concerning the training course "Contributing data to the PLUTO database", held in Geneva in December 2014, as set out in document TC/51/6, paragraphs 31 to 34, and the plans to organize three further courses, in English, French and Spanish, in 2015.

*(b) Electronic application systems*

200. The TC considered document TC/51/7 "Electronic Application Systems".

201. The TC noted the developments concerning the development of a prototype electronic form as set out in document TC/51/7.

202. The European Union requested additional time to provide comments on the development of the prototype electronic form. The UPOV Office clarified that all comments received could be addressed in the subsequent versions of the prototype and invited all UPOV members and breeders to join the project.

*(c) Exchangeable software*

203. The TC considered document TC/51/8.

*Document UPOV/INF/16 "Exchangeable Software"*

Revision of document UPOV/INF/16

204. The TC noted that the Council, at its forty-eighth ordinary session, held in Geneva, on October 16, 2014, had adopted the revision of document UPOV/INF/16 "Exchangeable Software" (document UPOV/INF/16/4).

Software proposed for inclusion in document UPOV/INF/16 “Exchangeable software”

205. The TC noted that the discussions on the inclusion of the SISNAVA software in document UPOV/INF/16 would be continued in the TWC, subject to the conclusion on discussions on the variation of variety descriptions over years in different locations.

Information on use by members

206. The TC approved the revision of document UPOV/INF/16/4 concerning the inclusion of information on the use of software by members of the Union, as set out in Annex I to document TC/51/8.

207. The TC noted that the comments of the TC, at its fifty-first session, concerning the use of software by members of the Union, would be reported to the CAJ at its seventy-first session, to be held in Geneva on March 26, 2015, and if agreed by the CAJ, a draft document UPOV/INF/16/5 would be presented for adoption by the Council at its forty-ninth ordinary session, to be held on October 29, 2015.

*Document UPOV/INF/22 “Software and Equipment used by members of the Union”*

Adoption of document UPOV/INF/22/1

208. The TC noted that the Council, at its forty-eighth ordinary session, held in Geneva, on October 16, 2014, had adopted document UPOV/INF/22/1 “Software and equipment used by members of the Union”.

*Software/Equipment proposed for inclusion in document UPOV/INF/22*

209. The TC agreed the information in Annex II to document TC/51/8 for inclusion in document UPOV/INF/22, subject to corrections to be provided by Germany and to checking of the data provided by Uruguay.

210. The TC noted that, subject to agreement by the TC at its fifty-first session, the comments of the TC concerning the use of software by members of the Union would be reported to the CAJ at its seventy-first session, and if agreed by the CAJ, a draft of document UPOV/INF/22/2 will be presented for adoption by the Council at its forty-ninth ordinary session, to be held on October 29, 2015.

*(d) Variety description databases*

211. The TC considered document TC/51/9 “Variety description databases”.

212. The TC noted the developments on variety description databases, as set in document TC/51/9 and, in particular, that:

- (a) the TWO agreed that it would not be appropriate to develop a database for an ornamental species at this time; and
- (b) the TWC had invited an expert from China to present the analysis of variance for the interaction “variety x location” (environment) of the QN characteristics considered in the study using the statistical module of the new software “DUSTC” developed by China for presentation at its thirty-third session.

213. The TC noted the importance of databases for UPOV members and agreed that it would be useful to include a discussion item on facilitating the development of databases at the fifty-second session of the Technical Committee.

Matters concerning variety descriptions

214. The TC considered document TC/51/38 “Matters concerning variety descriptions”.

*Verifying the maintenance of the variety*

215. The TC agreed to invite experts to present to the TWPs, at their sessions in 2015, their experiences with regard to the use of information, documents or material provided by the breeder for verifying the maintenance of the variety and the use of versions of Test Guidelines for verifying the maintenance of the variety that were different from the version of the Test Guidelines used for the examination of DUS.

*Matters concerning variety descriptions*

216. The TC noted the existence of different approaches for generating variety descriptions and verifying the maintenance of varieties in different UPOV members and under different DUS testing systems.

217. The TC noted the information in document TC/51/38, paragraphs 9 to 12, in relation to the matters concerning variety description presented in document TC/51/38, paragraph 8.

218. The TC agreed to invite experts to present to the TWPs, at their sessions in 2015, how variety descriptions were generated in DUS examination, how were they used after the granting of a breeders' right and how variety maintenance was verified. In particular, the TC noted the possible impact of the interaction genotype x environment in generating the variety description.

219. The TC agreed that experts should also be invited to present to the TWPs, at their sessions in 2015, the role of the plant material used as basis for the DUS examination in relation to matters presented in document TC/51/38, paragraph 8.

Discussion on possible ways of improving the effectiveness of the Technical Committee, Technical Working Parties and Preparatory Workshops

220. The TC considered document TC/51/37 "Possible ways of improving the effectiveness of the Technical Committee, Technical Working Parties and Preparatory Workshops" and received a presentation by the UPOV Office.

221. The TC noted the participation in the survey of participants at the TWP sessions in 2014, as presented in document TC/51/37, paragraph 20.

222. The TC noted the results of the surveys in 2014, presented in document TC/51/37, Annex I.

223. The TC noted the comments made by the TWPs at their sessions in 2014 on proposals that could imply cost or timing changes, as presented in document TC/51/37, Annex II.

224. The TC agreed with the following proposals concerning possible means of improving the effectiveness of the TWPs, as set out in document TC/51/37, paragraph 24:

GENERAL	
	<p>To be more specific for each TWP, e.g.:</p> <ul style="list-style-type: none"> <li>- Technical visit,</li> <li>- Matters to be discussed,</li> <li>- Workplan (e.g. time allocated for TGPs vs. TGs)</li> </ul>
	<p>To Update document: "Guidance Note: UPOV Technical Working Party arrangements" (meeting arrangement and technical visit):</p> <ul style="list-style-type: none"> <li>- Name badges</li> <li>- Participant lists on large poster board</li> <li>- Notice board for announcement</li> </ul>
	<p>To review the document: "Guidance Note: UPOV Technical Working Party arrangements" and include the key points in a cover letter (e.g. encourage national workshop in conjunction with the session to take advantage of international experts presence in the country; indicate earliest date for the first TWP to be organized after the TC)</p>

	To announce the next TWP venue on the first day of the session so participants have sufficient time to reflect on suggestion for the agenda and the technical visit (invite the host to explain the intended program, e.g. technical visit)
	To introduce a session for open discussion in a similar way to the session in the TC
<b>WORKPLAN</b>	
	To circulate the proposed TWP schedule of the week in advance
	To provide links to the documents in the program of the week on the UPOV website
<b>DOCUMENTS</b>	
	Decision paragraph to be continued in TWP documents
	Executive summary to be added to TWP documents
<b>TEST GUIDELINES</b>	
	To add information on the responsible TWP for Test Guidelines on the UPOV website
	To consider a multi-annual working plan for Test Guidelines
<b>PREPARATORY WORKSHOP</b>	
	To invite/ encourage experienced experts from members of the Union to participate in the preparatory workshop
	To organize small groups of participants with different levels of experience for the group exercises (as far as practical)
	To renew exercises for the preparatory workshops on a regular basis
	To organize E-workshops and workshop in conjunction with preparatory workshop on the use of the Web-based TG template, and guidance on the presentation of Test Guidelines at the sessions
	Pre-recorded e-workshops to be made available on the website

225. The TC agreed that the following proposals should not be considered further:

Survey in 2015
Change in the invitation and its distribution
Presentation of documents (already improved since 2014)
Request for participants to provide their comments in advance for TGP documents
Separate annual meeting to discuss TGP documents
Change on the day of the preparatory workshop (Sunday)

#### Preparatory workshops

226. The TC considered document TC/51/13 “Preparatory Workshops”.

227. The TC noted the report of the preparatory workshops held in 2014.

228. The TC agreed the program for preparatory workshops for 2015, as set out in paragraphs 10 and 11 of document TC/51/13.

#### Test Guidelines

229. The TC considered documents TC/51/2, TC/51/26, TC/51/27, TC/51/28, TC/51/29, TC/51/30, TC/51/31, TC/51/32, TC/51/33, TC/51/34 and TC/51/35.

230. According to the procedures established in document TGP/7, the TC adopted 12 new Test Guidelines for the Conduct of Tests for Distinctness, Uniformity and Stability, five revised Test Guidelines and nine partially revised Test Guidelines, as listed in the table below, on the basis of the amendments specified in Annex II to this document 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. No. du document Dokument-Nr. No del documento	English	Français	Deutsch	Español	Botanical name
<b>NEW TEST GUIDELINES / NOUVEAUX PRINCIPES DIRECTEURS D'EXAMEN / NEUE PRÜFUNGSRICHTILINIEN / NUEVAS DIRECTRICES DE EXAMEN</b>							
NZ	TWF	TG/ACCA(proj.5)	Feijoa, Pineapple Guava, Guavasteen	Feijoa	Feijoa	Feijoa	Acca sellowiana (Berg) Burret
JP	TWA	TG/ADZUK (proj.4)	Adzuki Bean; Azuki Red Bean; Chinese Red Bean	Haricot Adzuki	Adzukibohne	Judía adzuki	Vigna angularis (Willd.) Ohwi & H. Ohashi, Phaseolus angularis (Willd.) W. Wight
ZA	TWO	TG/ALOE(proj.5)	Aloe	Aloès	Aloe	Aloe, Sabila	Aloe L.
JP	TWO	TG/CALSP (proj.5)	China Aster, Annual Aster	Aster; Aster de Chine; Reine- marguerite	Sommeraster	Aster de China	Callistephus chinensis (L.) Nees
GB	TWO	TG/CAMPA (proj.6)	Campanula, Bell Flower	Campanule	Glockenblume	Campánula	Campanula L.
KE/ BR	TWA/ TWV	TG/CASSAV (proj.6)	Cassava	Manioc	Maniok	Mandioca, Yuca	Manihot esculenta Crantz
JP	TWA	TG/COIX(proj.6)	Adlay, Job's tears	Larmes de Job	Hiobsträne	Lágrimas de San Pedro	Coix lacryma-jobi L.
JP	TWO	TG/COSMOS (proj.8)	Cosmos	Cosmos	Kosmee, Schmuckkörb- chen	Mirasol, Cosmos	Cosmos Cav.
FR	TWV	TG/CUCUR_MMO (proj.4)	Cucurbita maxima X Cucurbita moschata	Cucurbita maxima X Cucurbita moschata	Cucurbita maxima X Cucurbita moschata	Cucurbita maxima X Cucurbita moschata	Cucurbita maxima Duch. x Cucurbita moschata Duch.
FR	TWV	TG/LAGEN (proj.5)	Bottle Gourd; Calabash; Calabash Gourd; White- flower Gourd	Calebassier; Gourde bouteille	Flaschenfrucht; Flaschenkürbis; Gewöhnlicher Flaschenkürbis	Acocote; Cajombre; Calabaza; Guiro amargo	Lagenaria siceraria (Molina) Standl.
MX	TWF	TG/PECAN (proj.12)	Pecan Nut	Noix de pécan	Pekan, Pekannuß	Nuez pecán, Pecan, Nogal pecanero	Carya illinoensis (Wangenh.) K. Koch
BR	TWA	TG/UROCH (proj.9)	Bread Grass, Palisade Grass, Palisade Signal Grass, Signal Grass; Basilisk Signal Grass, Signal Grass, Spreading Liverseed Grass, Surinam Grass; Creeping Signal Grass, Koronivia Grass; Congo Grass, Congo Signal Grass, Ruzi Grass	Signal; Koronivia;	Palisadengras; Surinamgras;	Pasto alambre, Pasto señal, Zacate señal, Zacate signal; Zacate Surinam, Pasto chontalpo, Pasto de la palizada, Pasto de las orillas, Pasto peludo, Pasto prodigio, Zacate prodigio; Braquiaria dulce, Kikuyu de la Amazonía, Pasto humidícola, Pasto humidícola dulce; Congo señal, Gambutera, Kenia, Pasto Congo, Pasto ruzi	Urochloa brizantha (Hochst. ex A. Rich.) R. D. Webster (Brachiaria brizantha (Hochst. ex A. Rich.) Stapf); Urochloa decumbens (Stapf) R. D. Webster (Brachiaria decumbens Stapf); Urochloa dictyoneura (Fig. & De Not.) Veldkamp P. (Brachiaria dictyoneura (Fig. & De Not.) Veldkamp P.); Urochloa humidicola (Rendle) Morrone & Zuloaga (Brachiaria humidicola (Rendle) Schweick.); Urochloa ruzi- ensis (R. Germ. & C. M. Evrard) Morrone & Zuloaga (Brachiaria ruziensis R. Germ. & C. M. Evrard)

**	TWP	Document No. No. du document Dokument-Nr. No del documento	English	Français	Deutsch	Español	Botanical name
<u>REVISIONS OF TEST GUIDELINES / RÉVISIONS DE PRINCIPES DIRECTEURS D'EXAMEN ADOPTÉS / REVISIONEN ANGENOMMENER PRÜFUNGSRICHTLINIEN / REVISIONES DE DIRECTRICES DE EXAMEN ADOPTADAS</u>							
NL	TWO	TG/25/9(proj.9)	Carnation, Clove Pink, Pink, Sweet William	Œillet	Nelke	Clavel	Dianthus L.
DE	TWO	TG/109/4(proj.4)	Large-flower Pelargonium; Regal Pelargonium; Crisped-leaf Pelargonium	Pélargonium des fleuristes	Edelpelargonie; Zitronenduft-Pelargonie	Pelargonio;	Pelargonium grandiflorum (Andrews) Willd.; P. xdomesticum L. H. Bailey; P. crispum (P.J. Bergius) L'Hér. and P. crispum x P. xdomesticum
ES	TWA	TG/122/4(proj.4)	Broomcorn, Durra, Feterita, Forage Sorghum, Grain sorghum, Great Millet, Kaffir-corn, Milo, Shallu, Sorghum, Sweet sorghum; Chicken-corn, Shattercane, Sordan, Sorghum x Sudan Grass, Sorghum-sudangrass, Sudan grass	Gros mil, Sorgho; Sorgho menu, Sorgho x Sorgho du Soudan	Mohrenhirse; Mohrenhirse x Sudangras, Sudangrass	Daza, Sorgo, Sorgo forrajero; Pasto del Sudán, Pasto Sudán, Sorgo x Pasto del Sudán, Sudangrass	Sorghum bicolor (L.) Moench; Sorghum xdrummondii (Steud.) Millsp. & Chase
ZA	TWF	TG/163/4(proj.7)	Apple Rootstocks	Porte-greffes du pommier	Apfel-Unterlagen	Portainjertos de manzano	Malus Mill.
FR	TWV	TG/210/2(proj.4)	Lentil	Lentille	Linse	Lenteja	Lens culinaris Medik.
<u>PARTIAL REVISIONS OF TEST GUIDELINES / RÉVISIONS PARTIELLES DE PRINCIPES DIRECTEURS D'EXAMEN ADOPTÉS / TEILREVISIONEN ANGENOMMENER PRÜFUNGSRICHTLINIEN / REVISIONES PARCIALES DE DIRECTRICES DE EXAMEN ADOPTADAS</u>							
NL	TWV	TG/12/9 Rev. and document TC/51/27	French Bean	Haricot	Gartenbohne	Judía común, Alubia	Phaseolus vulgaris L.
NL	TWV	TG/55/7 Rev. 2 and document TC/51/29	Spinach	Épinard	Spinat	Espinaca	Spinacia oleracea L.
ES	TWV	TG/61/7 Rev. and document TC/51/26	Cucumber, Gherkin	Concombre, Cornichon	Gurke	Pepino, Pepinillo	Cucumis sativus L.
NL/ FR	TWV	TG/76/8 and document TC/51/30	Sweet Pepper, Hot Pepper, Paprika, Chili	Piment, Poivron	Paprika	Aji, Chile, Pimiento	Capsicum annum L.
NL	TWO	TG/108/4 and document TC/51/32	Gladiolus	Glaieul	Gladiole	Gladiolo	Gladiolus L.
ES	TWF	TG/201/1 and document TC/51/33	Mandarins	Mandariner	Mandarinen	Mandarino	Citrus; Grp 1
FR	TWO	TG/263/1 and document TC/51/31	Buddleia, Butterfly-bush	Buddleia, Arbre aux papillons	Buddleie, Schmetterlingsst rauch	Budleya, Mariposa	Buddleja L.

**	TWP	Document No. No. du document Dokument-Nr. No del documento	English	Français	Deutsch	Español	Botanical name
UA	TWV	TG/268/1 and document TC/51/34	Garden Sorrel	Grande oseille	Wiesensauerampfer	Acedera común	Rumex acetosa L.
JP	TWV	TG/282/1 and document TC/51/28	Shiitake	Shiitake	Pasaniapilz	Shiitake	Lentinula edodes (Berk.) Pegler

231. The TC adopted the Test Guidelines for Adlay, subject to the addition of asterisks to Characteristics 1, 13, 14 and 20 being approved by the TWA by correspondence, as set out in Annex II to this report.

232. The TC adopted the Test Guidelines for Bottle Gourd subject to the deletion of Characteristics 17 “Neck: creasing at base” being approved by the TWV by correspondence, as set out in Annex II to this report.

233. UPOV has adopted 313 Test Guidelines, all of which are freely available on the UPOV website ([http://www.upov.int/test\\_guidelines/en/](http://www.upov.int/test_guidelines/en/)).

#### *Corrections to Test Guidelines*

234. The TC noted the corrections made to the adopted Test Guidelines for Carrot (document TG/49/8), on the basis of document TC/51/35.

#### *Draft Test Guidelines Discussed by the Technical Working Parties in 2014*

235. The TC noted the draft Test Guidelines discussed by the Technical Working Parties at their sessions in 2014, as listed in document TC/51/2, Annex II.

#### *Draft Test Guidelines to be discussed by the Technical Working Parties in 2015*

236. The TC agreed the program for the development of new Test Guidelines and for the revision of Test Guidelines, as shown in document TC/51/2, Annex III.

237. The TC noted, that the Leading Expert for the Test Guidelines for Red Clover had requested that the drafting of this TG be postponed until 2016 and be withdrawn from the agenda of the forty-seventh session of the TWA in 2015.

238. The TC noted the status of the existing Test Guidelines, as listed in document TC/51/2, Annex IV.

#### *Test Guidelines on the UPOV Website*

##### *Superseded versions of Test Guidelines*

239. The TC noted the list of superseded Test Guidelines, as presented in document TC/51/2, Annex V.

240. The TC noted that all superseded Test Guidelines were now available on the UPOV website ([http://upov.int/test\\_guidelines/en/list\\_supersede.jsp](http://upov.int/test_guidelines/en/list_supersede.jsp)).

#### Web-based TG Template

241. The TC considered document TC/51/36 “Web-based TG template”.

242. The TC received a demonstration of Version 1 of the web-based TG template by the UPOV Office.

243. The TC noted the developments concerning the web-based TG Template and, in particular, that:

- (a) e-workshops and a tutorial demonstrating the use of the new web-based TG template were conducted, recorded and made available to Leading and Interested Experts of Test Guidelines; and
- (b) the development of Version 2 of the web based TG template was planned to start in 2016, subject to available resources.

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

244. The TC considered document TC/51/4 and noted the number of genera and species for which members of the Union indicated their practical experience in the examination of DUS had increased from 3,305 in 2014 to 3,382 in 2015 (+ 2.3%). Information on members of the Union with practical experience in DUS examination is freely accessible via the GENIE database.

Program for the fifty-second session

245. The following draft agenda was agreed for the fifty-second session of the TC, to be held in Geneva in 2016:

1. Opening of the session
2. Adoption of the agenda
3. Discussion on:
  - (a) Variety descriptions and the role of plant material, including minimum number of growing cycles for DUS examination
  - (b) Quality parameters for DUS examination
  - (c) Facilitating development of databases
  - (d) Minimum distance between varieties
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
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)
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) Electronic application systems
  - (c) Exchangeable software
  - (d) Variety description databases
11. Assessing uniformity by off-types on the basis of more than one sample or sub-samples
12. Statistical methods for visually observed characteristics
13. Preparatory workshops
14. Test Guidelines
15. List of genera and species for which authorities have practical experience in the examination of distinctness, uniformity and stability
16. Program for the fifty-third session

17. Adoption of the report (if time permits)
18. Closing of the session

*246. The TC adopted this report at the close of its session on March 25, 2015.*

[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 French names of the Members /  
in alphabetischer Reihenfolge der französischen Namen der Mitglieder /  
por orden alfabético de los nombres en francés de los miembros)

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

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

## 1. PARTIAL REVISIONS

<b>TC/51/26</b>	<b>PARTIAL REVISION OF THE TEST GUIDELINES FOR CUCUMBER (DOCUMENT TG/61/7 Rev.)</b>
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in document TC/51/26, submitted to the TC:

Char. 51	for names of disease resistance characteristics to use scientific names according to ISF pathogen codes in quotation marks and add abbreviation in brackets
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(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

Char. 51	to remove quotation marks and use italics instead for names of disease resistance characteristics
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<b>TC/51/27</b>	<b>PARTIAL REVISION OF THE TEST GUIDELINES FOR FRENCH BEAN (DOCUMENT TG/12/9 Rev.)</b>
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in document TC/51/27, submitted to the TC:

Cover page, (a)	the reference to the report of the TWV should be 49-52 instead of 69-76
Chars. 49 to 52	for names of disease resistance characteristics to use scientific names according to ISF pathogen codes in quotation marks and add abbreviation in brackets
Char. 50	to check whether the race should be precised <i>Leading Expert: No change. We think the wording in section 5 of Ad. 50 is the most adequate: the inoculum used should be of Pathogenicity group VI and the two denominated strains are mentioned</i>
Ad. 49 – 11.3	to replace “standards” with “control varieties” (check in all Ads.) <i>Office: “standards” replaced with “control varieties” in point 11.3 in Ads. 49, 50 and 51</i>

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

Chars. 49 to 52	to remove quotation marks and use italics instead for names of disease resistance characteristics
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<b>TC/51/29</b>	<b>PARTIAL REVISION OF THE TEST GUIDELINES FOR SPINACH (DOCUMENT TG/55/7 Rev.2)</b>
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in document TC/51/29, submitted to the TC:

Char. 18	for names of disease resistance characteristics to use scientific names according to ISF pathogen codes in quotation marks and add abbreviation in brackets
TQ 7.3	heading to read “Other information” in all 4 languages

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

Char. 18	to remove quotation marks and use italics instead for names of disease resistance characteristics
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**TC/51/30 PARTIAL REVISION OF THE TEST GUIDELINES FOR SWEET PEPPER, HOT PEPPER, PAPRIKA, CHILI (DOCUMENT TG/76/8)**

(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in document TC/51/30, submitted to the TC:

Chars. 48, 49, 50, 51, 52, 53	for names of disease resistance characteristics to use scientific names according to ISF pathogen codes in quotation marks and add abbreviation in brackets
Ad. 48 – 10.1	to read “Juice: PBS (1:9). To obtain the juice, it is preferable to use a mortar for grinding infected leaves.”
Ad. 50 – 12.	to read “Based on the stem necrosis increase...”

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

Chars. 48, 49, 50, 51, 52, 53	to remove quotation marks and use italics instead for names of disease resistance characteristics
Ad. 48 – 9.4	to clarify meaning of “blank” (throughout document) (standard or control variety or an untreated plant?)

**TC/51/32 PARTIAL REVISION OF THE TEST GUIDELINES FOR GLADIOLUS (DOCUMENT TG/108/4)**

(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in document TC/51/32, submitted to the TC:

Char. 42	to check whether states 3 and 4 to read “moderately recurved” and “strongly recurved” instead of “reflexed” (From TGP 14 section 2 subsection 2 (2.2) the state reflexed appears sharply defined. The illustration of Ad. 42 indicates a more gradual tendency as what is referred to in document TGP 14 as recurved) <i>Leading Expert: agreed</i>
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(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

Ad. 42	state 1 in Spanish to read “moderadamente incurvado”
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**TC/51/33 PARTIAL REVISION OF THE TEST GUIDELINES FOR MANDARIN (DOCUMENT TG/201/1)**

(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in document TC/51/33, submitted to the TC:

Ad. 25	to check with L.E. whether second paragraph to read “The percentage of pollen <u>fertility</u> <del>fertilization</del> is calculated as the average of germinated pollen grains <del>observed with a binocular in 15 visual fields from 2 different microscope slides.</del> ” to check with the L.E. whether the scale could be reduced (to 5 or 3 notes) <i>The amended proposed new wording for Characteristic 25 provided by the Leading Expert is presented in the Annex to document TC/51/33.</i>
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(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

Char. 25	to keep original proposal as agreed by the TWF
Ad. 25	to keep original proposal as agreed by the TWF, but to replace “fertilization” by “fertility”

<b>TC/51/34</b>	<b>PARTIAL REVISION OF THE TEST GUIDELINES FOR GARDEN SORREL (DOCUMENT TG/268/1)</b>
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The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in document TC/51/34, submitted to the TC:

Ad. 15 to 18	to correct position of arrow (a) width
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## 2. NEW TEST GUIDELINES

Acca ( <i>Acca sellowiana</i> (Berg) Burret)	TG/ACCA(proj.5)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/ACCA(proj.5)), submitted to the TC:

3.1.2	to check whether ASW 3 (b) can be used or to explain why ASW was changed <i>Leading Expert: ASW 3 (b) can be used</i>
Char. 3	- to read “Current season’s shoot: length of internode” - to check whether to be indicated MS instead of MG <i>Leading Expert: We use MG but MS could be an option. Propose VG/MG/MS</i>
Char. 8	state 2 to read “at middle”
Chars. 7, 8	to check whether to delete Char. 7 or 8 (duplication) <i>Leading Expert: Keep both characters. A variety with state 2 in 8 could be state 2 or 3 in 7, not a complete duplication.</i>
Char. 15	- to check whether QL is correct <i>Leading Expert: QL is correct, either one type or the other.</i> - to have example varieties for more than one state of expression <i>Leading Expert: Using GN28 as a guide, this characteristic does not have an asterisk or is influenced by environment there is no need for an example variety for state 1.</i>
Char. 16	to have example varieties for more than one state of expression <i>Leading Expert: to add “Arhart” and “Tharfiona” for state 1</i>
Char. 19	to have example varieties for more than one state of expression <i>Leading Expert: Using GN28 as a guide, this characteristic does not have an asterisk or is greatly influenced by environment, there is no need for an example variety for state 1, 2</i>
Chars. 20, 21	- to check whether different example varieties can be provided for the two characteristics or to combine the characteristics <i>Leading Expert: to combine Chars. 20 and 21 to have one Char. “Anthers: color”</i> - to check whether “reddish white” to be replaced by “light red” <i>Leading Expert: “reddish white” is correct</i>
Char. 23	to provide example variety for state 1 <i>Leading Expert: state 1 to read “same level to slightly above” and to add example variety “Arhart”</i>
Char. 24	to add (+) and explanation and to check whether to be indicated as MS <i>Leading Expert: provided explanation. Keep MG because the combined result is a single calculated recording from the plot. It is not necessary to record combined fruit weight from each individual tree.</i>
Chars. 24 to 27	to provide more example varieties (e.g. states 1 and 3 of Char. 25) <i>provided by Leading Expert</i>
Char. 34	states to read “smooth or very slightly rugose”, “slightly rugose”, “moderately rugose”, “strongly rugose”

Char. 36, 37	to add example varieties <i>Leading Expert: to add "Arhart" as example variety for state 1 for both Chars.</i>
Char. 40	state 1 to read "none" <i>Leading Expert: no change. Using of the state none is misleading and inaccurate. Transparent specifically describes the absence of color. None could be confused with whitish because white is not precisely a color. Transparent or clear should be kept.</i>
Char. 41	to add (+) and explanation to clarify what size refers to <i>provided by Leading Expert</i>
Char. 42	to check whether to delete VG <i>Leading Expert: VG is possible with the use of example varieties.</i>
Ad. 1	to add illustration <i>provided by Leading Expert</i>
Ad. 6 to 8	to move illustrations for states 1 and 4 up
Ad. 25, 26	the figure should be turned so the base to be at the bottom length should be measured without calyx; to correct arrow <i>improved illustration provided by Leading Expert</i>
Ad. 27, 28	to be illustrated separately and illustration to be improved states 2 and 3 only differ by ratio length/width <i>Leading Expert: No change. A combine table has been used in other TGs for shape and length/width ratio. State 2 and 3 do not differ by size alone; circular and elliptic.</i>
Ad. 29	to be improved <i>Leading Expert: provided explanation to be added to illustrations</i>
Ad. 30	to add explanation to clarify what to be observed and check whether to replace photos by drawings or to improve position of arrows <i>Leading Expert: provided explanation to be added to illustrations</i>
Ad. 34	to read "Rugosity of the fruit is defined as the number and intensity of wrinkles. The wrinkles are irregular and net like."
Ad. 36 to 39	to improve position of arrow indicating the skin
TQ 1	to keep main botanical name only

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Chars. 7, 8	to invert order
Char. 8	to delete (*)
TQ 7.3	to update ASW 16 (where a photograph of the variety is to be provided) according to new wording in TGP/7/4) and to become 7.4

Adlay ( <i>Coix lacryma-jobi</i> L. var. <i>ma-yuen</i> (Rom. Caill.) Stapf)	TG/COIX(proj.4)
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The TC-EDC recommended to the TC that the Test Guidelines for Adlay be adopted subject to the addition of asterisks to Characteristics 1, 13, 14, 20 being approved by the TWA by correspondence.

Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected <i>Leading Expert: confirmed that all IP rights have been respected</i>
General	to check whether to add more (*) (4/20) <i>Leading Expert: to add (*) to the following characteristics</i> <i>1 Seedling: anthocyanin coloration</i> <i>13 Grain: ratio length/width</i> <i>14 Grain: weight of 100 seeds</i> <i>20 Endosperm: type</i>
Char. 8	to delete MG
Char. 9	to read "Bract: length of sheath"
Char. 11	to delete MS

Char. 15, Ad. 15	to check whether to read “Grain: color” and to delete or modify explanation <i>Leading expert: to read “Grain: color” and to delete (+) and explanation. We had a characteristic “Grain: secondary color” in a previous draft, which was deleted. Therefore we don’t need “main color” anymore.</i>
Char. 15	- to delete states “white” and “grey” as there are no example varieties available for these states - to check whether to order colors according to TGP/14 <i>Leading Expert: to have the following order of states: white, purple, light brown, dark brown, grey, black</i>

Adzuki Bean ( <i>Vigna angularis</i> (Willd.) Ohwi & H. Ohashi)	TG/ADZUK(proj.4)
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Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected <i>Leading Expert: Photos were taken by me and illustrations were drawn by me or used from national TG of Adzuki bean. They have no problem about IP rights.</i>
Char. 1	to check whether state 1 to read “bushy” (According to Ad. 1 state 1 should read “bushy”. Usually “dwarf” is used for another situation. Dwarf types can be climbing as well. <i>Leading Expert: Varieties of state 1 are not climbing. So “bushy” is appropriate.</i>
Char. 2	to move example variety “Kuro-shozu” from state 2 to state 3
Char. 3	to add illustrations of low, medium and high ratio <i>Leading Expert: illustrations will be provided</i>
Char. 5	to remove “(a)”
Char.14	to check whether to replace MS by VG <i>Leading Expert: yes, to replace MS by VG</i>
Char. 15	to check whether to read “Seed: ground color” and change Ad. 15 accordingly <i>Leading Expert: yes, to read “Seed: ground color”</i>
Chars. 16, 17	to check whether to have “over color” instead of “secondary color” <i>Leading Expert: yes, to have “over color” instead of “secondary color”</i>
Char. 17	to check whether to delete state 1 “none” and to be indicated as QL <i>Leading Expert: no, to keep state one as most varieties have only one color</i>
8.1 (b)	to read “Observations on terminal leaflets should be made on <del>terminal leaflets</del> <u>leaves</u> from the middle part of the plant.”
Ad. 1	to be deleted if state 1 to read “bushy” <i>Leading Expert: agreed with deletion</i>
Ad. 17	to check whether improved illustrations can be provided, particularly for state 3 (see also comment on Char. 17; “over color” instead of “secondary color” <i>Leading Expert: new illustrations will be provided</i>
Literature	to delete extra space after “legume”

Aloe ( <i>Aloe L.</i> )	TG/ALOE(proj.5)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/ALOE(proj.5)), submitted to the TC:

Char. 12	to add (+) and illustration <i>provided by Leading Expert</i>
Char. 14	to add (+) and illustration <i>provided by Leading Expert</i>
Char. 16	to add (+) and illustration <i>provided by Leading Expert</i>
Char. 16	to have states “absent”, “on upper side only”, “on upper and lower side”, “on lower side only”

Char. 18	to check whether really QL (or QN?) <i>Leading Expert: QL</i>
Char. 19	to check whether to be indicated as VG/MS <i>Leading Expert: yes, to be indicated as VG/MS</i>
Char. 21	to read "Peduncle: length"
Char. 23	state 1 to read "erect", state 2 to read "semi-erect"
Char. 25	to check whether to simplify wording of states (from 3D to 2D) and state 1 to read "oblate", state 2 to read "circular", state 3 to read "ovate" <i>Leading Expert: characteristic name to read "Terminal raceme: type" and to keep current states of expression</i>
Char. 26	- to add (+) and illustration <i>provided by Leading Expert</i> - to check whether to replace asymmetric scale by "very low" (1) to "very high" (9) <i>Leading Expert: to keep asymmetric scale</i>
Char. 37	example variety for state 1 to read "Leo8544" (to delete "Bi-color")
Char. 44	example variety for state 3 to read "Leo8544" (to delete "Bi-color")
Char. 46	to check if VG should be deleted <i>Leading Expert: yes, delete VG</i>
Ad. 24	graphic improvement of indication of length by replacing photo with illustration <i>provided by Leading Expert</i>
Ad. 25	to be presented in a grid <i>Leading Expert: not applicable, see change to Characteristic 25</i>
Ad. 44	to check whether a better illustration for state 1 can be provided (difference between 1 and 2 not clear) or to add explanation (what does protrusion mean? size or number?) <i>Leading Expert: provided new illustration for state 1</i>

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Char. 25	to change name of characteristic back to read "Terminal raceme: shape"
Char. 26	to replace asymmetric scale by "very low" (1) to "very high" (9)
TQ 7.4	to update ASW 16 (where a photograph of the variety is to be provided) according to new wording in TGP/7/4)

Campanula ( <i>Campanula</i> L.)	TG/CAMPA(proj.6)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/CAMPA(proj.6)), submitted to the TC:

Chars. 3, 6, 7, 8, 26, 27, 42, 44, 47, 48	to check whether to delete MG <i>Leading Expert: MG is used to describe a possible method of observation which is in accordance to the definition of MG prepared for the Editorial Committee by the TWO, we therefore believe it is correctly applied and should be kept.</i>
Char. 7	to read "Leaf blade: width" <i>Leading Expert: to move deleted part "at broadest part" to Ad. 7</i>
Char. 13	to delete (+) and explanation to add note (c) <i>Leading Expert: It is not correct to apply the explanatory note (c) to this characteristic as it only applies to color characteristics of the corolla. The document must retain (+) and explanation at this characteristic at Ad. 13.</i>
Chars. 29, 32, 35, 38	to clarify the use of the terms "midribs" and "veins", which is confusing (see Ad. 29, states 7/8 and 9 – does state 9 include the midribs?) <i>Leading Expert: The central vein of a corolla lobe forms a rib, the corolla itself has five lobes and therefore five of these 'midribs'. In some varieties a different color can be found along these ribs (state 7), or sometimes in combination with other parts such as the margin (state 8). In other varieties the area of color may be found more widely distributed in the veins of each lobe, this would include the midrib (state 9).</i>

Char. 35	state 8 to read “longitudinal zone”
8.1	sentence on top to read “Observations should be made at the time of full flowering.”
Ad. 26, 27	to check position of arrows (indication of length) <i>Leading Expert: provided improved illustration</i>
Ad. 42, 43	to check whether to delete explanation or whether it can be simplified <i>Leading Expert: The explanation is essential in its full text to ensure that these characteristics are observed in a harmonized way. It was developed for the document when it became apparent that there was significant and repeated misunderstanding within the subgroup.</i>

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Chars. 3, 6, 7, 8, 26, 27, 42, 44, 47, 48	to check whether MG is really used by experts; if not, delete it
Ad. 29	to add explanation in state 9 “along veins” in the addendum only to read: “along veins (including midrib)”
TQ 7.4	to update ASW 16 (where a photograph of the variety is to be provided) according to new wording in TGP/7/4)

Cassava ( <i>Manihot esculenta</i> Crantz.)	TG/CASSAV(proj.6)
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Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected <i>Leading Expert: confirms that all IP rights have been respected</i>
Char. 15	to read “Stem: color of inner side of bark”
Char. 17	to check whether to add (c) <i>Leading Expert: yes, to add (c)</i>
Char. 19	to clarify time of assessment whether (b) or (c) <i>Leading Expert: to be indicated as (c)</i>
Char. 19	to check whether to read “Stem: color of end of branches” (see Ad. 19) <i>Leading Expert: agreed</i>
Char. 20 to 26	to check if “root” should be replaced by “tuber” <i>Leading Expert: “root” is correct</i>
Char. 20	“Peduncle” normally refers to the flower. To check if “stipe” is more appropriate. <i>Leading Expert: yes, to replace “peduncle” with “stipe”</i>
Chars. 23, 24	state (1) to read “white”; state (2) to read “yellowish”
8.1	Reference to days is critical. Provided that indication of time is appropriate for all growing areas reference to month might be sufficient. to check whether to read “(a) Observations should be made about 5 months after planting. (b) Observations should be made 6-9 months after planting and at the middle third of the plant unless otherwise specified. (c) Observations should be made about 12 months after planting.” <i>Leading Expert: agreed</i>
Ad. 12	to improve photos <i>Leading Expert: will be provided</i>
Ad. 26	to read “The adherence should be assessed by removing the cortex by hand from the middle third of freshly harvested root tubers. Weak adherence = without any breakage of cortex Medium adherence = minimal breakage of cortex Strong adherence = a lot of breakage of cortex”

9.	- to check whether to delete the following literature reference, as the relevant characteristic was deleted from the TG: "Williams, H. J. and Edwards, T. G. (1980). Estimation of cyanide with alkaline picrate. J. Sci. Food Agric. 31: 15-22." - to read: "Alves, A.A.C., ..." (remove extra space) - to read : "...caracterização de ..." (add space) <i>Leading Expert: agreed</i>
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China Aster ( <i>Callistephus chinensis</i> (L.) Nees)	TG/CALSP(proj.5)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/CALSP(proj.5)), submitted to the TC:

4.2	to introduce ASW for uniformity assessment for hybrids
Char. 16	to deleted underlined part
Chars. 23, 30	to replace "reflexed" by "recurved"
Char. 27	to add state "none"
Char. 29	to check whether to be indicated as QL <i>Leading Expert: These states could be influenced by growing situation with the environments, PQ should be kept.</i>
Char. 34	to add state "none"
Char. 36	to add explanation on how to distinct daisy and anemone types (e.g. petaloid stamens, etc.) and to improve photos <i>provided by Leading Expert</i>
Char. 38	to add (+) and explanation on what is the central part <i>provided by Leading Expert</i>
8.1 (f)	to check whether to clarify that all varieties should be examined for this characteristic. This instruction causes confusion (observation only when inner ray florets are different from outermost row) <i>modified explanation provided by Leading Expert</i>
Ad. 3, 4	to provide different dotted line to indicate the main stem (different than primary and secondary lateral shoots) <i>provided by Leading Expert</i>
Ad. 24, 31	to add arrows to indicate which side is upper side/ventral <i>provided by Leading Expert</i>
TQ 7.3.1 (b)	to remove italics

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
8.1 (f)	- to check whether to delete (f) <i>Leading Expert: agreed</i>
TQ 7.3.2	to update ASW 16 (where a photograph of the variety is to be provided) according to new wording in TGP/7/4)

Cosmos ( <i>Cosmos</i> Cav.)	TG/COSMO (proj.8)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/COSMO(proj.8)), submitted to the TC:

Cover page	to add Spanish common name "Mirasol" to GENIE
Ad. 3	to read "The primary branches are indicated by arrows in the following diagram." arrows should be better indicated
Ad. 24	to delete indications of ray floret length and width

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
TQ 7.4	to update ASW 16 (where a photograph of the variety is to be provided) according to new wording in TGP/7/4)

<i>Cucurbita maxima</i> Duch. X <i>Cucurbita moschata</i> Duch.	TG/CUCUR_MMO(proj.4)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/CUCUR\_MMO(proj.4)), submitted to the TC:

Cover page	to delete “interspecific hybrids” (but to keep in Chapter 1)
2.3	to read “200g or 1,500 seeds”
3.4.1	to check consistency with Chapter 2.3 (1,500 seeds but 20 plants only?) <i>Leading Expert: In 2.3 we have also to consider the quantity of material to supply the two DUS cycles, but also the supplying of the reference collection. 20 plants to observe for a DUS cycle, is a common number (same proposal in Melon Squash...guidelines).</i>
3.4.2	to be deleted
4.1.1	to delete second paragraph
4.2.2	to read “For the assessment of uniformity of hybrid varieties, a population standard...”
4.2.3	to read “In case of single-cross hybrids, an additional tolerance of off-types can be accepted for clear cases of plants obviously resulting from the selfing of a parent line. An additional population standard of 3% and an acceptance probability of at least 95% should be applied for plants obviously resulting from the selfing of a parent line. In the case of a sample size of 20 plants, 2 inbred plants are allowed.”
Char. 3	French to read “absentes ou faibles”, “moyennes”, “fortes” to check whether state 1 to read “absent or weak”, state 2 to read “medium”, state 3 to read “strong” <i>Leading Expert: No, the technical experts agreed the proposal “absent or shallow”, “weak”, “medium”. The “medium” stage is identified as a maximum. To keep the proposed levels.</i>
Char. 5	to check whether state 1 to read “absent or weak”, state 2 to read “medium”, state 3 to read “strong” <i>Leading Expert: No, the technical experts agreed the proposal “absent or shallow”, “weak”, “medium”. The “medium” stage is identified as a maximum. To keep the proposed levels.</i>
Char. 7	to delete (a) <i>Leading Expert: to replace with (b)</i>
Char. 8	to delete (b) <i>Leading Expert: to keep (b)</i>
Char. 10 to 12	to be indicated as MS/VG
Char. 16	to read “Fruit: surface”
Ad. 9, 12	in the legend of the grid to read “width (ratio length/diameter)” (as in name of char.)
8.3	to read “(1) official denomination registered under the previous law in Japan in 1951 (2) former denomination of Shintosa, which corresponds to a type rather than to the variety”
9.	to read “Rakha, M.T., Metwally, E.I., Moustafa, S.A., Etman, A.A., Dewir, Y.H., 2012: Evaluation of regenerated strains from six <i>Cucurbita</i> interspecific hybrids obtained through anther and ovule <i>in vitro</i> cultures. Australian Journal of Crop Science, 6(1), AU, pp. 23 to 30 <a href="http://www.cropj.com/dewir_6_1_2012_23_30.pdf">http://www.cropj.com/dewir_6_1_2012_23_30.pdf</a> ”
TQ 4.1.1	to delete “Species of” <i>Leading Expert: No, because the species of the female parent which is particularly informative.</i>
TQ 5	to add Char. 17

TQ 6	to delete "To include"
TQ 7.3	to use ASW wording related to photographs

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Char. 5	to add states 4 "strong" and 5 "very strong"

Bottle Gourd, Calabash ( <i>Lagenaria siceraria</i> (Molina) Standl.)	TG/LAGEN(proj.5)
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The TC-EDC recommended to the TC that the Test Guidelines for Bottle Gourd be adopted subject to the deletion of Characteristics 17 "Neck: creasing at base" being approved by the TWV by correspondence.

(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/LAGEN(proj.5)), submitted to the TC:

2.3	to read "200g or 1,500 seeds"
3.4.1	to check consistency with Chapter 2.3 (1,500 seeds but 20 plants only?) <i>Leading Expert: In 2.3 we have also to consider the quantity of material to supply the two DUS cycles, but also the supplying of the referece collection. 20 plants to observe for a DUS cycle, is a common number (same proposal in Melon Squash...guidelines).</i>
4.1.1	to delete second paragraph
4.2	Should be modified as follows (conformity with TGP/7) to read  "4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines:  "4.2.2 The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.  "4.2.3 The assessment of uniformity for hybrid varieties depends on the type of hybrid and should be according to the recommendations for hybrid varieties in the General Introduction.  "4.2.4 For the assessment of uniformity, a population standard of 2% for cross-pollinated varieties and of 1% for hybrid varieties with an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 plants, the maximum number of off-types allowed is 1 for hybrid varieties and 2 for cross-pollinated varieties"
Char. 1	to read "Cotyledon: length" with states "short", "medium", "long"
Char. 5	to check whether state 1 to read "absent or weak", state 2 to read "medium", state 3 to read "strong" <i>Leading Expert: No, the technical experts agreed the proposal "absent or shallow", "weak", "medium". The "medium" stage is identified as a maximum. To keep the proposed levels.</i>
Char. 10	to read "Fruit: shape of fruit excluding neck" state 1 to read "obovate" to review and check whether to include "elliptic" and "ovate" <i>Leading Expert: agreed with proposed changes and the addition of states "elliptic" and obovate"</i>
Char. 14	to delete state 1 to read "Neck: shape"
Char. 15	to read "Neck: length in relation to length of fruit"
Char. 16	to read "Neck: diameter in relation to diameter of fruit"
8.1 (d)	to read "Observations should be made on fully developed dry seeds, after washing and leaving to dry in a shaded area."

Ad. 2	second sentence to be completed (end is missing) to add "stem" as last word? <i>Leading Expert: to add "stems"</i>
Ad. 6, 8	to read "The widest part of the flower should be assessed."
Ad. 10	- to improve grid according to changes to Char. 10 and add illustrations for possible new states - legend to read according to TGP/14 <i>provided by Leading Expert</i>
Ad. 11	- to read "Observations should be made on fully developed fruits" - to add "including neck"
Ad. 12	to read "The widest part of the fruit should be assessed on fully developed fruits."
Ad. 16	to check picture and example variety of state 3 (big gap between 3 and 5; looks more like state 1 or 2) to delete text indication of neck diameter <i>Leading Expert: The gap between state 1 and 3 is a bit smaller. I propose to replace the illustration for state 5. To keep text indication of neck diameter.</i>
Ad. 23	to be deleted <i>Leading Expert: These pictures are illustrative. Most of the varieties, I had the opportunity to observe in France were medium. I've never observed narrow or broad seeds. Only pictures on internet. I wish to keep.</i>

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Char. 5	state 2 to read "medium", state 3 to read "deep"
Char. 10	state 4 to read "round"
Ad. 17	to provide illustration for state 3 <i>Leading Expert: to delete Characteristic 17</i>
Char. 23	to check whether 9 notes are appropriate or whether to reduce scale
Ad. 16	to delete text for states 3 and 7
Ad. 23	to delete illustrations and add explanation that the width is measured at the widest point
TQ 7.3	to update ASW 16 (where a photograph of the variety is to be provided) according to new wording in TGP/7/4) and to become 7.4

Pecan Nut <i>Carya illinoensis</i> (Wangenh.) K. Koch)	TG/PECAN(proj.12)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/PECAN(proj.12)), submitted to the TC:

4.1.4	to use full SW
Char. 2	to read "Tree: density of branches"
Char. 5	to be moved after Char. 9
Char. 6	to read "Terminal leaflet: length" to be reordered after "Leaf: length of petiole"
Char. 7	to read "Terminal leaflet: width" to be reordered after "Terminal leaflet: length"
Char. 8	to read "Terminal leaflet: ratio length/width" to be reordered after "Terminal leaflet: width"
Char. 11	to read "Lateral leaflet: petiolule"
Char. 23	to be moved before 22 (see order 20 and 21)
Char. 24	to check German translation
Char. 30	to read "Kernel: size in relation to size of nut"
Char. 36	to be moved before Char. 33
8.1 (a)	to read "Leaf/Leaflet: observations should be made on fully developed leaves on the middle section of a one year old shoot at the end of leaflet expansion."
8.1 (b)	second sentence to read "Observations should be made on the terminal section of a one-year-old shoot."

8.1 (c)	to read "Husk nut: observations should be made on fully developed nuts from the terminal section of a one-year-old shoot at husk opening stage."
Ad. 2	to read "The density of branches of the plant should be considered as the overall abundance of branches during the dormant period."
Ad. 6 to 11	to be deleted and incorporated in 8.1 (a) <i>provided by Leading Expert</i>
Ad. 22, 23	to delete wording and replace photos by drawings <i>provided by Leading Expert</i>
Ad. 29	to be deleted
Ad. 33	to read "The time of leaf burst is when 75% of the buds are open."
Ad. 34	to read "The time of leaf fall is when 75% of the leaves have fallen."
Ad. 35	to read "The time of husk opening is when 75% of the husks are split."
Ad. 36	to delete "on the infructescence"

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
8.1 (c)	to read "Husk/Nut" instead of "Husk nut"
TQ 7.3	to update ASW 16 (where a photograph of the variety is to be provided) according to new wording in TGP/7/4) and to become 7.4

Urochloa	TG/UROCH(proj.9)
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Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected <i>Leading Expert: confirmed that all IP rights have been respected</i>
4.1.1	to delete ASW on hybrids
4.2.4	to be deleted
Char. 2	to check whether to add time of observation (see Chapter 8.1) <i>Leading Expert: to add (c)</i>
Chars. 4, 5	to delete (b) and add explanation in Chapter 8.2 or new note in 8.1 <i>Leading Expert: to delete (b), add (+) and add Char. 5 to existing Ad. 4</i>
Char. 6	to read "Flag leaf: curvature" state 1 to read "absent or weak"
Char. 7	to read "Flag leaf: width"
Char. 18	to read "Flower: stigma color" (see Ad.)
Char. 19	If Characteristic 19 is observed before opening of flowers it should be indicated with (c) and moved before 18. Characteristic 18 is observed at anthesis. <i>Leading Expert: agreed that Char. 19 be indicated as (c) and moved before Char. 18</i>
8.1 + Ad. 20	Adjustment of time necessary. What is the difference between (a), (c) and Ad. 21? <i>Leading Expert: to remove (a) and to replace (a) by (c) in all relevant characteristics in the table of characteristics</i>
8.1 (b)	to check whether to read "Observations on fully developed leaves should be made on the penultimate leaf of the main culm." <i>Leading Expert: agreed</i>
8.1 (c)	to read "Observations should be made at the time of beginning of flowering." <i>Leading Expert: agreed</i>
Ad. 2	to be clarified, could illustration be provided? <i>Leading Expert: will be provided</i>
Ad. 4	to read "... should be made on the middle third of the plant; ..." could illustration be provided? Improved explanation should cover also char. 5. <i>Leading Expert: will be provided</i>
Ad. 14-16	photo to be improved, if possible <i>Leading Expert: will be provided</i>

Ad. 20	to be deleted <i>Leading Expert: to keep Ad. 20 and to read "The anthocyanin coloration on the glume should be assessed at the beginning of flowering, when 50% of the plants have at least one inflorescence fully emerged and before the opening of flowers."</i>
9.	to delete last literature reference
TQ 4.2.1	to correct alignment of box (b)
TQ 4.2.3	request for information on "Ploidy" to be moved to TQ7
TQ 4	to delete wording on hybrid varieties (below 4.2.3)

### 3. REVISIONS

Carnation ( <i>Dianthus</i> L.)	TG/25/9(proj.9)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/25/9(proj.9)), submitted to the TC:

3.3.3	to add last sentence of ASW (which is currently missing)
5.3 (d), (e)	to check order of colors according to TGP/14 section 2.3.2 <i>Leading Expert: provided new order</i>
5.5	to read "Where separate growing trials are used for cut flower types (C), garden types (G) and pot types (P) (see Section 3.3.2), it may be necessary to include individual varieties in different growing trial(s) in order to ensure an effective examination of distinctness. In particular, it may be necessary to include a variety in both the garden type trial and the pot type trial.  Furthermore, in cut flower types (C) three sub-types can be distinguished which could be useful for grouping: - one flower per stem (Co) - spray (Cs) - umbrella – <i>D. barbatus</i> (Cu)"
6.4, 6.5	to read: "(C) cut flower type: - (Co): one flower per stem - (Cs): spray - (Cu): umbrella ( <i>D. barbatus</i> ) (G) garden type (P) pot type"  "Sweet William" should be replaced throughout the document by " <i>D. barbatus</i> " (except for on cover page, common name)
Table of Chars.	- to move Char. 6 (Stem) after Char. 8 (Plant) - to move Char. 9 (Inflorescence) before Char. 22 (Bud)
Char. 3	to add (+) and explanation <i>Leading Expert: provided illustration and explanation</i>
Char. 4	to read "Plant: position of flowers compared to foliage"
Char. 8	- to read "Plant: flower clustering on lateral branches" - state 2 to read "in some lateral branches", state 3 to read "in all lateral branches"
Char. 9	state 1 to read "flat or slightly domed"
Chars. 9, 35	to be indicated as QN
Char. 12	to have states "circular", "slightly angular", "strongly angular"
Char. 13	to add (+) and explanation <i>provided by Leading Expert</i>
Char. 24	state 2 to read "adpressed and free"

Chars. 25, 27	- to check whether chars. to be indicated as QN and have states "acute", "short acuminate", "medium acuminate" <i>Leading Expert: agreed</i> - to have 3 states and use photo of Char. 24 state 3 as illustration of intermediate state "short acuminate" <i>Leading Expert: provided new photo</i>
Char. 35	to check state 2 "intermediate" <i>Leading Expert: state 2 to read "acute to acuminate"</i>
Char. 51	to delete (e)
Char. 52	to read "Petal: width of differently colored margin"
Chars. 52, 55, 56, 57	to replace "none" by "absent"
Char. 57	to delete (f)
Char. 43	- if possible, to replace types by names of states - to check whether to split type 7 in two different types <i>Leading Expert: For some states there exists no good wording, so it is not possible to change types into names.</i>
8.1 (a)	to read "The main stem is the most direct line from the top-flower to the base. In cut flowers varieties, the fifth internode directly below the flower should be observed. In pot and garden carnations, the third internode directly below the flower should be observed. Except for length, observations should be made half way between nodes."
8.1 (b)	to read "In cut flowers varieties, to be observed on leaves of the fifth node directly below the flower. In pot and garden carnations, to be observed on leaves of the third node directly below the flower."
8.1 (e)	to be deleted (redundant, only Char. 51)
8.1 (f)	to be deleted (redundant, only Char. 57)
Ad. 1	to read "Length of stem should be observed from soil level to the top of the plant, excluding the flowers" (see VG/MS)
Ad. 2	to read "Plant height should be observed from soil level to the top of the plant, including the flowers." (see VG/MS)
Ad. 4	to check whether photos/illustrations of plants in lateral view can be provided. <i>Leading Expert: no better photos are available</i>
Ad. 5, 6	to read "The number of internodes should be observed between the epicalyx and the lowest node with a lateral with flower buds or flowers." A lateral with flower buds or flowers should be indicated in the photo.
Ad. 9	dotted line for state 1 should be slightly domed
Ad. 25, 27	see Chars. 25, 27
Ad. 35	to check whether state 3 is caudate shape and not acuminate <i>Leading Expert: state 3 is acuminate</i>
Ad. 37	to read "Double flowers have more than 5 petals."
Ad. 57	to add illustration for state 3 as no photo is available <i>photo provided by Leading Expert</i>

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
TQ 7.3	to update ASW 16 (where a photograph of the variety is to be provided) according to new wording in TGP/7/4)

Regal Pelargonium	TG/109/4(proj.4)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/109/4(proj.4)), submitted to the TC:

Cover page, name box	to add "geranio" as Spanish common name to delete "pelargonía" from Spanish TG
Char. 5	state 1 to read "very open"

Chars. 16 to 18	to check whether to add "main" color <i>Leading Expert: I agree to the proposal to add "main" color in the characteristics 16 to 18. To be consistent the same change should be done for characteristics 22 to 24.</i>
Char. 20	to read "Upper petal: size of differently colored zone at base"
Char. 26	to read "Lower petal: size of differently colored zone at base"

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Chars. 16, 17, 18, 22, 23, 24	add note (b) and the definition of main color in 8.1 (b)
TQ 7.3	to update ASW 16 (where a photograph of the variety is to be provided) according to new wording in TGP/7/4) and to become 7.4

Sorghum	TG/122/4(proj.4)
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Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected <i>Leading Expert: confirms that all IP rights have been respected</i>
Char. 10	to check whether to move state "yellowish white" below "white" <i>Leading Expert: agreed</i>
Char. 14	to check whether change order of "medium green" and "light green" <i>Leading Expert: agreed</i>
Char. 15	example variety "PR82G65" to read "PR82G55"
Char. 19	example variety "Celliu" to read "Cellu"
Char. 23	example variety "Nicol" to read "Nico"
Char. 29	example variety for state 2 "PR88G20" to read "PR88Y20" (to check, identical to example variety for state 3) <i>Leading Expert: to delete example variety for state 2 "PR88G20"</i>
Char. 29	- to read "Grain: color after <del>threshing</del> " - to add (+) and move "after threshing" to explanation <i>Leading Expert: agreed</i>
Char. 33	to check whether to be indicated as MG <i>Leading Expert: agreed</i>
8.1	- to delete indications of characteristics - to read "Observations should be..." - Schematic illustration of grain is very clear. Photo should be deleted because no additional information.
Ad. 33	- to delete Section 8 of Ad. 33 <i>Leading Expert: agreed, but reminds it's a literal description of the method.</i> - to check whether to delete the Notes below Section 8 as well <i>Leading Expert: agreed</i> - last part of the explanation should be modified as follow: "States of expression: Number of grains to be observed: 100 grains 1 absent or very low: ≤5% tannin 2 medium: >5% - <95% tannin 3 very high: ≥95% tannin"
9.	literature to be presented according to TGP/7

Apple Rootstocks ( <i>Malus Mill.</i> )	TG/163/4(proj.7)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/163/4(proj.7)), submitted to the TC:

2.3	to replace “and/or” with “or”
3.1	to add ASW to define a growing cycle <i>Leading Expert: agreed</i>
Table of chars.	to move South African set of example varieties to the Annex (and to update chapter 6.4 accordingly) <i>provided by Leading Expert</i>
Table of chars.	types A and B should be stated in [ ] for consistency, to be indicated above the method of observation
Char. 33	to read “Petiole: length relative to length of blade”
Char. 37	to remove space before “medium pink”
Chars. 46, 47	to add explanation on ground and over color (see TGP/14) <i>provided by Leading Expert</i>
8.1	to remove underline
Ad. 4	to clarify whether really only applies to B if so, to provide illustration for A as well <i>Leading Expert: to delete “only applies to B”, the illustration can be used for both, stoolbeds and trees.</i>
TQ 5.2	to add “(in stoolbeds)” to title

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
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Lentil ( <i>Lens culinaris Medik.</i> )	TG/210/2(proj.4)
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(a) The following table contains the comments by the Enlarged Editorial Committee at its meeting on January 7 and 8, 2015. Unless otherwise indicated, all comments are already incorporated in the draft Test Guidelines (document TG/210/2(proj.4)), submitted to the TC:

3.4.1	to read “Each test should be designed to result in a total of at least 100 plants, which should be divided between at least 2 replicates.”
Char. 2	state 1 to read “upright”, state 3 to read “semi upright”
Char. 13	to move explanation from 8.1 to 8.2 (replace (b) by (+)). See remark on Char. 14.
Char. 14	to delete (b) and (c) because covered by (+)
Char. 15	to delete (c) and to add (+) and explanation
Char. 16	to delete (c)
Char. 17 to 21 Ad. 17 to 21	- to include current Ad. 17 – 21 in 8.1. - to read “Seed: ...” and add explanation in 8.1 that the assessment has to be done on dry seed. - to check whether to be indicated as (c) <i>Leading Expert: We are not in favor of indicating the char. 17 to 21 as (c), because (c) corresponds to the “pod at dry harvest maturity: observations should be done when the pod is completely dry but before the dehiscence”. The char. 17 to 21 are observed after this stage, directly on the dry seeds when the pod is opened.</i>
Char. 20	- to check whether more example varieties can be added <i>provided by Leading Expert</i> - to have states “absent”, “patched”, “spotted”, “marbled”, “irregular” - to clarify state 5 “irregular” <i>Leading Expert: to have states 1 “absent”, 2 “blotched”, 3 “spotted”, 4 “marbled”, 5 “marbled and blotched”</i>

Char. 22	to check whether MS is correct (looks like VG from Ad. 22) <i>Leading Expert: to be indicated as VG</i>
8.1 (a)	to read "Flower: Observations should be done on fully developed flowers at time of flowering."
Ad. 3	- to read "The anthocyanin should be observed at the base of the ramification." - to delete photos - to add explanation on where to be observed <i>Leading Expert: provided new illustration indicating where to be observed</i>
Ad. 4	to read "The height of the plants should be assessed when all plants have at least one open flower."
Ad. 5	to read "The intensity of ramification should be assessed when all plants have at least one open flower."
Ad. 7	to add explanation on position on which to observe the leaflet <i>provided by Leading Expert</i>
Ad. 9	to read "Observations should be done on the first floral level at time of flowering."
Ad. 14	to read "The number of ovules can be observed - before seed development, when the pod is flat by counting all ovules or - at dry harvest maturity, when the pod is completely dry (but before the dehiscence), by counting developed seeds and non-developed ovules."
Ad. 17 to 21	to be deleted if moved to 8.1
Ad. 19	to read "The main color is the color with the largest surface area, the secondary color is the color with the second largest surface area. In cases where the areas of the main and secondary color are too similar to reliably decide which color has the largest area, the darkest color is considered to be the main color."
Ad. 20	photos are presented upside down illustration to be improved <i>provided by Leading Expert</i>
Ad. 22	Char. 10 to 12 are observed at 50% flowering (see 8.1 (a)). Probably the same time should be defined as time of flowering. Therefore to check whether to read: "The observation should be made on 20 plants per variety per replication. The time of flowering is reached when 50% of plants have at least one open flower. Notes should be given in relation to example varieties." <i>Leading Expert: agreed</i>

(b) Changes proposed by the TC-EDC in March 2015, which are to be included in the document submitted to the TC:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Ad. 20	to delete column for state 1

[End of Annex II and of document]