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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

TECHNICAL WORKING PARTY FOR ORNAMENTAL PLANTS AND FOREST TREES

Forty-Eighth Session
Cambridge, United Kingdom, September 14 to 18, 2015

REPORT

adopted by the Technical Working Party for Ornamental Plants and Forest Trees

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Opening of the session

1. The Technical Working Party for Ornamental Plants and Forest Trees (TWO) held its forty-eighth session in Cambridge, United Kingdom, from September 14 to 18, 2015. The list of participants is reproduced in Annex I to this report.

2. The session was opened by Mr. Kenji Numaguchi (Japan), Chairman of the TWO, who welcomed the participants and thanked the United Kingdom for hosting the TWO session.

3. The TWO was welcomed by Mr. Andrew Mitchell, Head of Varieties and Seeds Policy, Controller of Plant Variety Rights, Department for Environment, Food and Rural Affairs (DEFRA). A copy of the welcome address of Mr. Mitchell is provided in Annex II to this report. The TWO was also welcomed by Ms. Tina Barsby, Chief Executive Officer, National Institute of Agricultural Botany (NIAB).

Adoption of the agenda

4. The TWO adopted the agenda as reproduced in document TWO/48/1 Rev.

Short reports on developments in plant variety protection

(a) Reports on developments in plant variety protection from members and observers

5. The TWO noted the information on developments in plant variety protection from members and observers provided in document TWO/48/22 Prov. The TWO noted that reports submitted to the Office of the Union after September 4, 2015, would be included in the final version of document TWO/48/22.

(b) Reports on developments within UPOV

6. The TWO received a presentation from the Office of the Union on the latest developments within UPOV, a copy of which is provided in document TWO/48/21.

TGP documents

Matters for adoption by the council in 2015

7. The TWO considered document TWO/48/3.

8. The TWO noted the revisions to documents TGP/0, TGP/5, TGP/9 and TGP/14 to be put forward for adoption by the Council at its forty-ninth ordinary session, as set out in paragraphs of document TWO/48/3.

Future Revision of TGP Documents

Future revisions under development

9. The TWO noted that the proposals for future revisions of TGP documents to be discussed by the TWPs at their sessions in 2015 would be dealt with under separate documents.

Matters agreed by the Technical Committee (TC) concerning future revisions

10. The TWO noted that the TC had 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, TGP/7 and TGP/9.

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

12. The TWO noted that the TC had agreed 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, for future revision of document TGP/7, as set out in paragraph 24 of document TWO/48/3.

13. The TWO noted that the TC had 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 guidance for blind randomized trials.

14. The TWO noted that the TC had agreed to include guidance on “Examining characteristics using image analysis”, for future revision of document TGP/8, as presented in paragraphs 26 and 27 of document TWO/48/3.

Program for the development of TGP documents

15. The TWO noted the program for the development of TGP documents, as set out in the Annex to document TWO/48/3.

TGP/7: Development of Test Guidelines

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

16. The TWO considered document TWO/48/12.

17. The TWO agreed with the proposal to revise document TGP/7 to reflect the introduction of the web-based TG Template after Version 1 is finalized.

18. The TWO agreed with the proposal to standardize the format of the Table of Characteristics in all Test Guidelines with a structure as set out in paragraph 15 of document TWO/48/12.

19. The TWO noted that there was no guidance on the order of the methods of observation for a characteristic in the Table of Characteristics (e.g. VG/MS) and agreed to propose to provide guidance in TGP/7 and the Test Guidelines, e.g. to state that the most commonly used method was displayed first.

20. The TWO noted that all Leading Experts had prepared the draft Test Guidelines for discussion during the TWPs at their sessions in 2015 using the web-based TG Template.

21. The TWO noted that all Interested Experts had been required to provide their comments on draft Test Guidelines for discussion during the TWPs at their sessions in 2015 using the web-based TG Template.

22. The TWO noted the issues being addressed in response to the comments by Leading and Interested Experts that participated in the testing of the 2015 prototype of the web-based TG Template, as set out in paragraphs 13 and 14 of document TWO/48/12.

23. The TWO received a demonstration of the planned resolution of the issues being addressed in the 2015 prototype of the web-based TG Template, as set out in paragraphs 13 and 14 of document TWO/48/12.

24. The TWO agreed to request the Office of the Union to explore the possibility to include the comments by the Office of the Union on draft Test Guidelines in the web-based TG Template, in order that the Leading Expert would have all the comments in the web-based TG Template.

25. The TWO noted the timetable for development of the web-based TG Template, as set out in paragraphs 17 to 19 of document TWO/48/12, and noted that guidance on the use of the web-based TG Template would be developed after Version 1 was finalized. The TWO agreed that online tutorials and guidance notes would be useful for Leading and Interested Experts.

Revision of document TGP/7: Use of Proprietary Text, Photographs and Illustrations in Test Guidelines

26. The TWO considered document TWO/48/13.

27. The TWO agreed with the proposed guidance in relation to text, photographs or illustrations that could be subject to third party rights, as set out in paragraph 7 of document TWO/48/13, for inclusion in a future revision of document TGP/7.

> "In the case of text, photographs, illustrations or other material that is subject to third party rights, it is the responsibility of the author of the document, including Test Guidelines, to obtain the necessary permission of the third party. Material must not be included in documents where such permission is required but has not been obtained."

Revision of document TGP/7: Regional Sets of Example Varieties

28. The TWO considered document TWO/48/14.

29. The TWO agreed that it would be important to explain the rationale for the establishment of regional sets of example varieties in particular Test Guidelines.

30. The TWO agreed with the inclusion of guidance in document TGP/7 that the TWP should determine the basis on which the region would establish an agreed regional set of example varieties (e.g. by an exchange of information, or by a ring-test).

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

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

31. The TWO considered document TWO/48/15 and received an explanation by the drafter, Mr. Nik Hulse (Australia), on the proposed guidance on "Minimizing variation due to different observers of the same trial."

32. The TWO agreed with the draft guidance in the Annex to document TWO/48/15 for inclusion in a future revision of document TGP/8 on minimizing the variation due to different observers, subject to the following editorial change proposed by the TWF:

> "However, the method has not been ~~used on~~ developed for PQ characteristics ~~to our knowledge~~ and ~~PQ characteristics~~ may also require extra information on calibration".

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

33. The TWO considered document TWO/48/16.

34. The TWO 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

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

36. The TWO 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.

37. The TWO noted that a report on the practical exercise and the development of DUST module was presented at the thirty-third session of the TWC by an expert from the United Kingdom.

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

38. The TWO considered document TWO/48/17.

39. The TWO noted that the TC, at its fifty-first session, had 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, and in that regard, had considered a discussion paper provided by an expert from the Netherlands on uniformity requirements in bulk characteristics, as reproduced Annex I to document TWO/48/17.

40. The TWO noted that the TC, at its fifty-first session, had 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 had invited the proposal of alternative approaches for the examination of uniformity.

41. The TWO considered further information provided by an expert from the Netherlands on the example of a bulk characteristic in the Netherlands: Content of Glycoraphanin, as reproduced in Annex II to document TWO/48/17, and agreed with the TWA that:

- before a characteristic observed on the basis of a bulk sample was included in Test Guidelines it should be considered whether it would be useful and necessary for DUS examination.

- approaches (a) “Control of the characteristic before it is accepted in the relevant guideline”; (d) “Subplots”; and (i) “Plant number” in Annex I should be further developed for the analysis of requirements that a characteristic examined on the basis of bulk samples should fulfill before it is used for DUS testing and producing a variety description.

- approach (h) “DNA analysis” was too general and did not provide useful information for the assessment of uniformity in characteristics observed on the basis of bulk samples.

42. The TWO further agreed that DNA analysis would only be appropriate for the assessment of characteristics that satisfy the criteria for characteristics set out in the General Introduction and where there is verification of the reliability of the link between the marker and the characteristic, as set out in document TGP/15 “Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)”.

43. The TWO noted that the TC, at its fifty-first session, had agreed that the determination of states of expression should be based on existing variation between varieties and considering environmental influence.

44. The TWO noted the offer of France to provide other examples of characteristics based on bulk samples and that the TC had invited other members to provide examples.

45. The TWO noted that varieties of ornamental plants were being developed for new purposes, such as chemical content, and agreed that it would be important to continue the analysis of requirements that a characteristic examined on the basis of bulk samples should fulfill before it is used for DUS testing.

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

46. The TWO considered document TWO/48/18.

47. The TWO noted that the TWC and the TWA had agreed that the guidance on "Different forms that variety descriptions could take and the relevance of scale levels", as reproduced in Annex I of document TWO/48/18, should be used as an introduction to future guidance to be developed on data processing for the assessment of distinctness and for producing variety descriptions.

48. The TWO noted that the TWC had agreed 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, held in Natal, Brazil, from June 30 to July 3, 2015.

49. The TWO noted that the European Union had reported to the Technical Committee that the project on a ring test on Apple for the management of variety descriptions, to be launched in 2015, had been suspended.

TGP/10: Examining Uniformity

Revision of document TGP/10: Assessing uniformity by off-types on basis of more than one growing cycle or on the basis of sub-samples

50. The TWO considered document TWO/48/9.

51. The TWO noted that when assessing uniformity by off-types on the same plants in two growing cycles the same off-type plants observed in the first growing cycle would still be off-types in the second growing cycle in addition to any other off-type plants observed only in the second growing cycle and agreed that combining the sample sizes in both growing cycles was not useful for the assessment of uniformity by off-types in ornamental plants.

52. The TWO agreed that it should be clarified in document TWO/48/9 that the guidance provided was not intended to be used for the assessment of uniformity by off-types on the same plants in two growing cycles.

53. The TWO also agreed that the numbers of off-types in the examples provided in Annex I, second growing cycle column, lines 2 and 3 (number of off-types = 3), should have an asterisk to indicate that "care is needed when considering results that were very different in each of the growing cycles, such as when a type of off type was observed at a high level in one growing cycle and was absent in another growing cycle."

Definition of color groups from RHS Colour Charts

54. The TWO considered document TWO/48/19.

55. The TWO received the following presentations:

RHS Colour Chart	Royal Horticultural Society (RHS)
How varieties were allocated to color groups: Use of RHS Colour Chart	Japan
Color: gaps in the RHS Colour Chart?	United Kingdom
Definition of color groups from RHS Colour Charts: implementation for the purpose of variety denominations	European Union

56. A copy of the presentations is provided in document TWO/48/19 Add.

57. The TWO noted that the latest edition of the RHS Colour Chart (Sixth Edition) provided a name for each individual color and agreed to request the expert from Germany to prepare a study with support from the experts from Australia, Canada, European Union, Netherlands, New Zealand and United Kingdom on the possibility to use the Sixth Edition of the RHS Colour Chart for defining color groups for the purposes of grouping of varieties and organization of the growing trial. The TWO agreed that the overlapping of some colors should be taken into account. The TWO also agreed that the study should consider whether the allocation of UPOV Color Groups for each RHS color, as set out in document TGP/14, should be revised.

58. The TWO noted that the Royal Horticultural Society (RHS) was considering the process for review of the Sixth Edition of the RHS Colour Chart prior to organizing the Seventh Edition and agreed to request an expert from the United Kingdom to organize the compilation of examples of varieties without matching color in the Sixth Edition of the RHS Colour Chart (gaps). The examples compiled would be submitted to the RHS with a view to propose new colors and possible harmonization on terminology.

59. The TWO noted that color names may have relevance for variety denominations and could have consequences for the acceptance of variety denominations in some members.

Matters concerning variety descriptions

60. The TWO considered document TWO/48/10 and received a presentation by an expert from the European Union on “Experience with regard to variety descriptions and verifying the maintenance of the variety at the Community Plant Variety Office (CPVO)”. A copy of the presentation is provided in document TWF/46/10 Add.

61. The TWO considered the use of Test Guidelines for verifying the maintenance of the variety where the version of the Test Guidelines was different from the Test Guidelines used for the examination of DUS. It noted that, in many cases, different versions of Test Guidelines were still useful for verifying the maintenance of a variety, because many characteristics and states of expression would be essentially the same.

62. The TWO noted that, in the United Kingdom, the same version of the Test Guidelines used for the examination of DUS was used for verifying the maintenance of the variety.

63. The TWO noted that Germany and the Netherlands used data generated during the examination of DUS and additional information, such as photographs, to verify maintenance of a variety.

64. The TWO noted that in some members, in litigation cases, there were ongoing discussions on access and ownership of plant material that was not maintained by the authority and agreed that verification of conformity was more difficult when the authority did not maintain a standard sample of the material used for DUS examination.

65. The TWO noted that, in Germany, new plant material of protected varieties would be requested from breeders for establishing distinctness in relation to candidate varieties in species with no living variety collection. The plant material submitted would be verified for maintenance of the variety.

66. The TWO noted that, in New Zealand, the verification of maintenance could be conducted when growing a variety for comparison during the examination of DUS of other varieties.

67. The TWO noted that, for ornamental plants, it was not always possible or feasible for authorities to maintain a living plant material collection for DUS examination purposes and noted that, in such circumstances, the variety descriptions generated from the DUS examination were used for selecting similar varieties for examining distinctness of candidate varieties.

68. CIOPORA explained that variety descriptions were important for the enforcement of breeders’ rights and were frequently challenged when seeking to determine if plant material in question was of the protected variety.

69. The TWO agreed to invite Australia, the European Union, Germany and the Netherlands to make a presentation on matters concerning variety descriptions at its forty-ninth session, to be held in 2016.

Statistical Methods for Visually Observed Characteristics

70. The TWO considered document TWO/48/20 and agreed that statistical methods were not used for the analysis of visually observed characteristics in DUS examination of ornamental plants.

71. The TWO noted that the TC, at its fifty-first session, had agreed to remove the document "Statistical methods for visually observed characteristics" from the program for the revision of document TGP/8, and to consider the matter under a separate agenda item.

72. The TWO noted that the TWC had invited 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 data set of meadow fescue provided by Finland.

Molecular techniques

73. The TWO considered document TWO/48/2.

74. The TWO noted the report on developments in the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT), as set out in paragraphs 7 to 10 of document TWO/48/2.

75. The TWO noted that the TC, at its fifty-first session, had agreed to develop a joint document explaining the principal features of the systems of Organization for Economic Co-operation and Development (OECD), UPOV and International Seed Testing Association (ISTA), subject to the approval of the Council and in coordination with the OECD and ISTA, as set out in paragraph 18 of document TWO/48/2.

76. The TWO noted that the TC, at its fifty-first session, had 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", subject to the approval of the Council and in coordination with the OECD and ISTA, as set out in paragraph 20 of document TWO/48/2.

77. The TWO noted that the TC, at its fifty-first session, had agreed the proposal for the BMT, at its fifteenth session, to develop lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques for consideration by the TC, as set out in paragraph 21 of document TWO/48/2.

78. The TWO 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, as set out in paragraph 19 of document TWO/48/2, 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 or in conjunction with the OECD Technical Working Group Meeting.

79. The TWO considered the initial 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, discussed during the TC, at its fifty-first session as reproduced in paragraph 32 of document TWO/48/2.

80. The TWO agreed with the TWA and TWF that the draft question and answer should read as follows:

> "Is it possible to obtain protection of a variety on the basis of its DNA-profile?
>
> "A variety cannot be protected on the basis of DNA profiles. 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].~~

81. The TWO noted that some breeders were providing molecular marker information with applications for plant breeders' rights and agreed that unless the information was validated by the authorities it would not have a proven link to the material used in the examination of DUS.

Variety denominations

82. The TWO considered document TWO/48/4.

83. The TWO noted that the TC, at its fifty-first session, and the CAJ, at its seventy-first session, had 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, and that the TC had 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, as set out in paragraphs 6 to 13 document TWO/48/4.

84. The TWO noted that the TC, at its fifty-first session, and the CAJ, at its seventy-first session, had noted the proposed revision of document UPOV/INF/12 "Explanatory notes on variety denominations under the UPOV Convention" in relation to changes of registered variety denominations, as set out in paragraph 18 document TWO/48/4, and that the CAJ had approved the presentation of that guidance for adoption by the Council at its forty-ninth ordinary session.

85. The TWO noted that the CAJ, at its seventy-first session, had agreed to 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, in conjunction with the development of an effective UPOV similarity search tool, and any conclusions by the WG-DST to revise document UPOV/INF/12, if appropriate, as set out in paragraph 24 document TWO/48/4.

86. The TWO noted that the CAJ, at its seventy-first session, had agreed to consider the proposals of the CAJ-AG under Sections 2.2.2 (c), 4(a) and 4(e)(i) at its seventy-second session, as set out in paragraph 25 of document TWO/48/4.

87. The TWO agreed to propose that consideration be given to developing guidance on the use of color names in variety denominations.

Experiences with new types and species

88. The TWO received an oral presentation by an expert from Germany on DUS examination of a new variety of Calibrachoa with a high tendency to change flower color with temperature change. The TWO noted that the new variety was very sensitive to changes in temperature under standard conditions of cultivation in greenhouses and was different from other varieties in this feature. The TWO noted that similar changes in flower color and intensity of spots due to temperature and light intensity had also been observed in Chrysanthemum and Phalaenopsis varieties, respectively.

Influence of different sources on vegetatively propagated material used in DUS examination

89. The TWO received a presentation on "Effects of the origin of plant material on DUS characteristics" by an expert from the Netherlands. A copy of the presentation is provided in document TWO/48/25 Add.

90. The TWO noted the influence of source of plant material in Tulip and Phalaenopsis and agreed that, for some crops, it may be useful for authorities to request breeders to provide information on the source of plant material submitted for DUS examination to address possible effects in the expression of characteristics.

Examples of different growing practice in DUS testing

91. The TWO received a presentation on "Arrangements for growing trials" by an expert from New Zealand. A copy of the presentation is provided in document in document TWO/48/24 Add.

92. The TWO noted that, in general, the method of growing ornamental plants (e.g. in containers, in raised beds, on soil) did not affect the expression of DUS characteristics. The TWO noted that, while plant growth habit could be altered for plants in the ground, the characteristic could still be observed in comparison to other plants in the growing trial.

Matters to be resolved concerning Test Guidelines adopted by the Technical Committee

Test Guidelines for Aloe (document TG/ALOE(proj.5))

93. The TWO considered document TWO/48/23 and agreed the new illustrations proposed by the Leading Expert, except for the illustration in Ad. 26: "Terminal raceme: ratio length/width". The TWO agreed that the illustration provided in Ad. 26 should be replaced by another illustration presenting the length of raceme (including a part of the peduncle without flowers) and should be approved by the TWO by correspondence.

Discussion on draft Test Guidelines

*Abelia (*Abelia *R.Br.)*

94. The subgroup discussed document TG/ABELI(proj.3), presented by Ms. Françoise Jourdan (France), and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
2.3	to read "… 6 plants"
3.4.1	to read "… 6 plants"
4.1.4	to read "…on 5 plants or parts taken from each of 5 plants…"
4.2.2	second sentence to read "In the case of a sample size of 6 plants,…"
Table of chars.	- to check whether to add more example varieties - to check spelling of Golden Panaché (or Golden Panache?)
Chars. 1 to 18	to delete (a)
Char. 1	to be deleted
Char. 4	to add example varieties for states 2 and 4 or delete these two states
Char. 5	- to read "One-year-old stem: color" - to delete (b)
Char. 6	- to read "Young shoot: anthocyanin coloration" - to delete (b) - to have notes 1 to 5 and add "very strong" as state 5
New Chars.	to add the following characteristics before Characteristic 7 and include explanation color: "Young leaf blade: main color on upper side" "Young leaf blade: secondary color on upper side"
Char. 7	- to delete MS - to have states very short (1), short (2), medium (3), long (4), very long (5)
Char. 8	- to delete MS - to have states very narrow (1), narrow (2), medium (3), broad (4), very broad (5)
Char. 9	to add (c)
Char. 10	- to delete state 1 "triangular" - to have states lanceolate (1), ovate (2), elliptic (3), obovate (4)
Char. 13	state 3 to read "marginal zone"
Char. 14	to add new state 1 "none" and to renumber states accordingly
Char. 15	to delete state "none" and to be indicated as QL
Char. 16	to have states "absent or weak" (1), medium (2), strong (3)
Char. 18	to be indicated as QL
Chars. 19 to 21	to read "Sepal:…"
Char. 23	to read "Corolla lobe: attitude"
Char. 24	to move example variety "Lynn" from state 9 to state 7
Char. 25	to delete (f)
Char. 27	- to be moved before Char. 26 - to add (f)

Char. 28	to add example variety “Golden Panaché” for state 1
Chars. 29, 31, 32, 33, 34	to delete (a)
Char. 32	state 3 to read “pinkish”
Char. 34	- to add VG - to delete (*)
Char. 35	to have states very sparse (1), sparse (2), medium (3), dense (4), very dense (5)
8.1	to add new explanation that all leaf characteristics should to be observed on the upper side
8.1 (d)	grid to be improved
8.1 (f)	first sentence to read “The main color is the color with the largest surface area present on the outer or inner side of a corolla lobe.”
Ad. 13	to improve illustration for state 5
Ad. 14	to use standard color definition according to TGP/14)
TQ 5	to add the grouping Char. 6 “Young shoot: anthocyanin” to the TQ

Aglaonema (Aglaonema *Schott.*)

95. The subgroup discussed document TG/AGLAO(proj.5), presented by Mr. Kenji Numaguchi (Japan), and agreed the following:

General	- Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected - to include common name “Agloanema” in GENIE database
2.3	to read “… 10 young plants”
5.3 (c), (d)	to add “pink” after Gr. 4 yellow
Char. 2	- to have states absent or few (1) with example variety “Cassic”, medium with example variety “Katharngen”, many (3) with example variety “Chaowang” - to add MG
Char. 3	example variety for state 5 to read “Chalit’s Pride”
Char. 6	state 1 to read “very short”
Chars. 6 to 8	to be moved before Characteristic 3
Char. 7	to read “Leaf sheath: auricle projection” with states very weak (1), medium (3), very strong (5)
Chars. 9 to 11	to add MG
Char. 14	example variety for state 3 to read “Chalit’s Pride”
Char. 16	to include state 14 “along midrib, at margin and along veins”
Chars. 22, 31, 57, 66, 72	to add space after colon “Leaf blade: pattern…”
Char. 17	to correct spelling “blotches”
Char. 18	to correct spelling “blotches”
Char. 41, 42	to add space after colon “Leaf blade: color 4”
Chars. 51 to 77	to delete (e)
Char. 53	to add space after colon to read “Leaf blade:…”
Char. 59	to be indicated as QN
Char. 70	state 9 to read “along midrib, at margin and along veins”
Char. 78	state 1 to read “absent or weak”, state 2 to read “medium”, state 3 to read “strong”
Char. 80	to add state 5 “very strong” and move example variety “Black Beauty” form state 4 to state 5
8.1 (a)	to read “Observations on leaves should be made on fully grown leaves from the middle third of foliage.”
8.1 (b)	to read “Petiole length and leaf sheath should be observed as follows:”

8.1 (c)	to read “darker color” instead of “darkest color”
8.1 (d)	to read “Leaf blade length and width should be observed as follows:”
8.1 (g)	- to read “… The order in which the colors should be observed is dictated by the order the colors appear in the RHS Colour Charts, as described in 8.1(f).” - to match cross-reference of worked examples in last sentence with their corresponding letters in 8.1 ((p), (q), (r), (s) > (i), (j), (k), (q))
8.1 (h)	- to read “Leaf blade: distribution of color should be observed as illustrated below. State 'along midrib' may include state 'on mid rib'. The term 'veins' means primary lateral veins. States of expression including 'along veins' may not include all primary veins. - illustration 12 to read “along midrib, along veins and throughout”
8.1 (i)	34 to read “along midrib, along veins and between veins”
8.1 (l) to (p)	to read “… observed as follows:”
8.1 (l)	to correct spelling “blotches” (header and illustrations)
8.1 (p)	second illustration to read “indicated by distribution throughout the whole part”
Ad. 7	to invert illustrations according to new wording of Char. 7
Ad. 79	to read “The following diagrams indicate the longitudinal section of a leaf blade.”
TQ 4.2.1	(b) to read “division” (c) to read “in vitro propagation”
TQ 4.2.2	to read “Seed”
TQ 7.3	- to be moved and added to TQ 5 - to add “pink” after Group 4 yellow for (c) and (d)

**Calibrachoa (*Calibrachoa *Lave & Lex.) (Revision)*

96. The subgroup discussed document TG/207/2(proj.2), presented by Ms. Andrea Menne (Germany), and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Cover page	to include ASW for related documents and add Petunia as related document
1.	to check whether to add that the Test Guidelines only apply to Calibrachoa and exclude Petunia
5.3	- to add “Plant: height” as grouping characteristic - 5.3 (e): to add colon to read “Gr. 8: black”
Char. 6	state 3 to read “rounded” instead of “obtuse”
Char. 10	to be deleted
Char. 12	to add (+)
Char. 21	to be deleted
Char. 25	to read “Flower: distribution of secondary color”
Char. 26	to read “Plant: flower color change through the growing season”
8.1 (c)	to add new sentence after first sentence: “Observations on varieties with changing flower color should be made on the predominant flower color through the season.”
Ad. 6	state (3) to be indicated as “rounded”
Ad. 13	to read “A double flower has more than one whorl of corolla lobes.”
Ad. 15	to adjust arrow to point at sinus
Ad. 26	to read “Some Calibrachoa varieties can have flowers with a strong reaction to light and temperature conditions. As a result, flowers of the same age could show a different main and/or secondary color on the same plant through the growing season.”
TQ 1	to add “Plant: height”

*Coleus (*Solenostemon scutellarioides *(L.) Codd)*

97. The subgroup discussed document TG/SOLEN_SCU(proj.1), presented by Mr. Takayuki Mikuni (Japan), and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Cover page	to change coverage of the Test Guidelines to *Plectranthus scutellarioides* (L.) R. Br. (UPOV Code: PLECT_SCU)
1.	to read "These Test Guidelines apply to all varieties of *Plectranthus scutellarioides* (L.) R. Br."
4.2.3	second sentence to read "…In the case of a sample size of 10 plants,…"
T.o.C.	to check whether to add explanation on time of observation of characteristics
Chars. 1, 2, 3, 5, 6, 8	to check whether to add example varieties
Char. 3	- to add explanation that to be observed on the middle third of the stem - to check whether to read "Stem: color"
Char. 7	to check whether to add illustrations for low and high ratio
Char. 9	to have notes 1 to 5
Chars. 12, 15, 18, 22	state 5 to read "between central zone and margin"
New chars.	to check whether to add the following new characteristics: - "Plant: habit" with states from "upright" to "spreading" - "Leaf: shape of apex - "Leaf: shape of base" - "Leaf: margin" with states "entire", "serrate", "crenate"
8.1 (d)	to check whether to use Lisbon approach
8.1 (e)	to update states according to table of characteristics
8.1 (g)	to check whether to complete illustrations for other states of expression
Ad. 8	to update states according to table of characteristics
TQ 1	to be updated (see change to coverage of Test Guidelines)
TQ 4.2	- 4.2.1: to delete (b) - to add 4.2.2 Seed - "Other" to become 4.2.3
TQ 5	- to complete list with all states of expression (to include even states of expression) - 5.3, 5.4: to add color groups
TQ 6	to be completed

**Cordyline* (Cordyline *Comm. Ex. Juss.*)

98. The subgroup discussed document TG/CORDY(proj.3), presented by Mr. Chris Barnaby (New Zealand), and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
2.2	to read "plants" (small p)
5.3 (a)	to be deleted
Char. 1	to be deleted

New char.	to add new characteristic after Char. 3: - to read “Plant: height/width ratio” with states low (1) with example variety “Red Fountain” medium (3) with example variety “Tana” high (5) with example variety “Southern Splendour” - to be indicated as QN - to be indicated as MG/VG - to add (*) - to be added to grouping characteristics in Chapter 5.3 - to be added to TQ 5 - to add (+) and use illustrations from current Ad. 1 for Ad. of new Char.
Char. 6	to add explanation/illustration and combine with current Ad. 7 and indicate length of petiole
Chars. 9, 10, 11, 12, 19, 20, 22, 23	- to correct spelling “RHS Colour Chart” - to add new (e)
Chars. 10 to 12	to be moved before 6
Char. 13	to read “Leaf: curvature”
Char. 15	- to add (+) and explanation - to be indicated as MG/VG - to add “Karo Kiri” as example variety for state 1
Char. 16	state 1 to read “narrow”
Char. 18	state 1 to read “absent or weak”
Char. 23	to check whether to delete (c)
8.1	- to add new (e) to read “The main color is the color with largest surface area present on a leaf. The secondary color is the color with the second largest surface area present and the tertiary color is always the color with the smallest surface area. In cases where the area of the main and secondary color are too similar to reliably decide which color has the largest surface area on the blade, the darker color is considered to be the main color. E.g. for light yellow and medium green leaf, medium green is considered to be the main color.” -
8.1 (c)	to correct spelling “color”
Ad. 2	to read “Plant height is observed towards the end of the growing cycle.”
Ad. 7	to adjust arrows indicating the narrowest point
Ad. 10	to be delete (see 8.1)
Ad. 19	to be delete (see 8.1)
TQ 1	to add field for species
TQ 5	- to complete states of expression with even notes - to delete 5.1
TQ 6	example to read “Leaf: width” with states “narrow” and “medium”

*Crane’s Bill (*Geranium *L.)*

99. The subgroup discussed document TG/GERAN(proj.1), presented by Ms. Hilary Papworth (United Kingdom), and agreed the following:

General	- Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected - to clarify coverage of vegetatively propagated varieties only
Cover page	to check main common name (to read “Cranesbill" or “Geranium”?)
2.2	to read “The material is to be supplied in the form of vegetatively propagated young plants.”
5.3	to check whether all TQ characteristics to be included
Char. 1	to check whether state 5 to read “horizontal”

Char. 4	to check whether 9 notes are appropriate or whether to reduce scale
Char. 6	to read “Leaf: length”
Char. 8	to correct spelling of “color”
Chars. 9, 12	state 6 to read “at sinus”
Char. 14	to check whether char. is needed or can be deleted
Char. 20	to be indicated as PQ
Char. 22	to read “Leaf: basal lobes”
Char. 23	to read “Leaf: number of incisions of margin”
Char. 24	to read “Leaf: depth of incisions of margin”
Char. 25	to correct spelling “branching” in state 2
Char. 31	to check whether to add states between “flat” and “convex”
Char. 32	- to read “Petal: arrangement” - to correct spelling to “moderately” in state 5
Char. 33	- to read “Petal: curvature” - to add illustrations
Char. 36	- to delete MS - to add illustrations to illustrate high and low ratio
Char. 46	to read “Petal: distribution of veins”
Char. 47	to read “Petal: color of veins”
New chars.	to check whether to add the following new characteristics: - “Petiole: length” - “Leaf: shape” or ”Leaf: length/width ratio”
8.1 (a)	to apply to all characteristics
8.1 (c)	last sentence to read “…the darker color is considered to be the main color.”
8.1 (e)	to check wording
Ad. 1	to be improved
Ad. 11	to check whether to improve illustration for state “flushed”
Ad. 18	- to adapt notes according to Char.18 - to add arrows to illustrations
Ad. 23	to adapt notes according to Char. 23
Ad. 24	to adapt notes according to Char. 24
Ad. 29	explanation to read “A single flower has one whorl containing 5 petals, a double flower has more than one whorl of petals.”
Ad. 46	to add explanation that to be observed on the conspicuous part of the veins
Ad. 47	to add explanation that to be observed on the conspicuous part of the veins
9.	first reference: to check title (Gardener’s) second reference to read “Husted Bendtsen, B. 2005:…” and to be moved after reference to Hibberd
TQ 5	- to complete list of states of expression with all even states TQ 5.3, 5.9, 5.10: to add color groups
TQ 6	to be completed

*Freesia (*Freesia *Eckl. ex Klatt) (Revision)*

100. The subgroup discussed document TG/27/7(proj.2), presented by Mr. Henk de Greef and Ms. Katie Pont (Netherlands), and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
3.4.1	to read “… at least 20 plants.”
4.2.2	second sentence to read “In the case of a sample size of 30 plants,…”

5.3 (e)	Groupe 9 to read “blue” instead of “violet”
T.o.C	- general comment: to check the allocation of note (a) - to add example varieties
Char. 1	to delete (f)
Char. 17	state 1 to read “absent or small”
Char. 32	to add illustration of low and high ratio
Char. 33	to add illustration
Char. 36	- to read “Perianth: pattern of secondary color of inner side of outer segment” - to add illustrations
Char. 39	to add illustration of low and high ratio
Chars. 42, 43	to be indicated as PQ
Char. 49	to delete wording in brackets and move to Ad. 49
Char. 51	to check wording (development of lobes?)
Char. 52	to read “…in relation to upper”
Ad. 1	to add arrows
Ad. 8	to increase size of label “Branch”
Ad. 10	to check illustration state (7)
Ad. 11	to increase size of label “Spike: length”
Ads. 13, 14	to place arrow parallel to rachis
Ad. 16	to improve example to differentiate states (2) and (3)
Ad. 18	to add illustration of low and high ratio
Ad. 19	- to further clarify difference between “semi-double” and “double” (cut-off point of 9 or 10 petals) - to replace “spike” with “style” in the definition of double flowers
Ad. 36	to complete with other states of expression
Ad. 41	to add illustration for state 3
Ad. 50	to improve illustrations
Ad. 51	to improve illustrations
TQ 4.1	to select appropriate standard wording
TQ 4.2.1 (a)	to replace “tuber” with “corm”
TQ 5	- to complete characteristics with all even states of expression - to add color groups to 5.4

**Grevillea* (Grevillea *R. Br. Corr. R. Br.*)

101. The subgroup discussed document TG/GREVI(proj.3), presented by Mr. Nik Hulse (Australia) and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Char. 2	to be deleted
Char. 5	to move state “orange” before “purple”
Char. 6	to be deleted
Char. 15	states to read “less than one third to midrib”, “from one to two thirds to midrib”, “greater than two thirds to midrib”
Char. 17	to be deleted
Char. 23	to have notes 1 to 5 (keep states and example varieties as they are)
Char. 32	to delete all even states and to renumber remaining states of expression
Char. 33	to delete (a)
Char. 34	to have notes short (3) with example variety “Raptor”, medium (5) with example variety “Callum’s Gold”, long (7) with example variety “Autumn Fall”

Char. 35	to order states narrow (1) with example variety “Raptor”, medium (2) with example variety “Callum’s Gold ”and broad (3) with example variety “Red Rover”
Char. 40	to be indicated as VG/MG
Char. 42	state 3 to read “…the base” (to add space)
Chars. 44 to 46	to replace (c) by (d)
Char. 54	to be deleted
Char. 58	to be deleted
Char. 63	to read “Pistil: length in relation perianth”
Char. 66	to be deleted
8.1 (c)	- to read “Observations on inflorescence and mature flower characteristics should be made on a main flowering branch.” - to add explanation on measurement of “perianth length” and “perianth width”
8.1 (d)	to add “(d) Observations on flower bud should be made on buds that have just opened” and to add (d) to Characteristics 44 to 46
Ad. 8	to add illustration of an undivided leaf
Ad. 13	to number states of expression from bottom to top and left to right (e.g. ovate (1), lanceolate (2), circular (3))
Ad. 49	to have capital letter “Observed…” and full stop
Ads. 51 to 53	to add full stop at end of each sentence
Ad. 65	illustration for state (3) to be replaced with illustration from proj.1 (transverse on top)
9.	- to remove space before colon “…Proteacea: a…” - to delete reference “Elliott and Jones”
TQ 1	to add line for species
TQ 4.1, 4.2	to be completed as in proj.1
TQ 6	example to read “Inflorescence: predominant color” and with states “yellow” and “orange” (as in proj.1)
TQ 7	to include ASW requesting photograph

*Guzmania (*Guzmania *Ruiz et Pav.) (Revision)*

102. The subgroup discussed document TG/182/4(proj.1), presented by Mr. Henk de Greef and Ms. Katie Pont (Netherlands), and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
3.	to check whether to clarify method of examination for seed-propagated varieties (same as for vegetatively propagated?)
4.1.4	- to be assessed in 19 plants (allowing 1 off-type) - to read “…the number of parts to be taken from each of the plants should be 1.” - to clarify number of plants to be assessed for seed-propagated varieties
4.2.2	to check whether to clarify uniformity standard for seed-propagated varieties
Char. 1	to delete “(inflorescence excluded)” and add explanation in Ad. 1
Char. 2	to read “Plant: width”
Char. 3	to correct formatting (order of states of expression and notes)
Char. 4	to add illustration
Char. 5	to add illustrations
Char. 8	- to add illustrations - to order states acuminate(1), acute (2), obtuse (3)
Char. 9	- state (2) to read “medium green” - to add explanation on main color
Char. 10	to remove from header and add explanation “anthocyanin coloration excluded”
Char. 12	to add explanation on main color

Char. 14	- to be indicated as PQ - to add state “as a flush and in stripes”
Char. 19	- to check whether to clarify overlapping states of expression - to remove from header and add explanation “anthocyanin coloration excluded”
Char. 21	to correct spelling “small”
Char. 22	to read "…position in relation to leaves”
Char. 26	to read “Inflorescence: number of floral bracts”
Char. 29	- to correct spelling “of” - to add illustration
Chars. 30 to 33	to add explanation on main and secondary color (current Ad. 32) or to have an explanation covering several characteristics (8.1)
Char. 34	to add illustrations
Chars. 35, 36	to check whether to be combined
Chars. 40 to 43	to check whether to be indicated as VG
Char. 42	to be indicated as PQ
Char. 43	- to read “color of stigma” - to be indicated as PQ
8.1 (b)	to read “Observations…” (capital) and to add full stop.
Ad. 1	- to correct arrow to start from base of plant - to check whether to use a different illustration
Ad. 32	to replace “reliable” by “reliably”
TQ 4.2	to select appropriate standard wording
TQ 5	- to add Char. 32 - to list all states of expression including even notes - to add color groups for the RHS Colour Chart characterstics
TQ 6	to be completed
TQ 7	to request color photograph

**Petunia (*Petunia *Juss.;* ×Petchoa *J.M.H. Shaw) (Revision)*

103. The subgroup discussed document TG/212/2(proj.2), presented by Ms. Andrea Menne (Germany), and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
1.	first sentence to read “These Test Guidelines apply to all varieties of Petunia Juss.. and ×Petchoa J. M. H. Shaw”
5.3 (g)	to add colon after GR. 5 to read “Gr. 5: blue pink”
Table of chars.	to add example varieties
Char. 1	- to add (*) - to check wording and whether to replace photos with illustrations in Ad. 1
Char. 7	state “obtuse” to read “rounded”
Char. 10	to be deleted
Char. 17	to check whether to read “Flower: diameter”
Char. 24	to read “Flower: distribution of secondary color”
Char. 26	to read “Plant: number of flowers with differing size of area of secondary color”
Chars. 28, 29	to delete (a)
Char. 32	- to read “Corolla tube: main color of inner side” - to check whether the middle part of the corolla tube should be observed
Char. 33	to read “Corolla tube: conspicuousness of veins on inner side"
Char. 35	- to check whether to read “Anther: color of pollen” - to add state “pink” between states “light brown” and “light blue”

8.1 (d)	first sentence to read “Observations on the flower should be made on the inner side of the corolla lobes of a fully developed flower before fading.”
Ad. 6	to check whether to be presented in grid
Ad. 15	to read “A double flower has more than one whorl of corolla lobes.”
Ad. 17	to check whether to add illustration
Ad. 18	to adjust arrows to point to sinus
Ad. 21	to correct spelling to “conspicuousness”
Ad. 24	to read “Petunia varieties with bi- or multi-colored flowers can have a strong reaction to the environmental conditions. Due to the conditions during a specific period of their bud development the area of the secondary color on some flowers can be different from the area on other flowers on the same plant. Therefore the distribution of the secondary color should be observed on those flowers which have the predominant distribution.”
Ad. 31	to add explanation “The width should be observed at the broadest part of the corolla tube.”
9.	- first reference to correct spelling “und” - second reference to add colon between “Acta” and “Bot”
TQ 1	to invert order

**Plectranthus (*Plectranthus *L'Hér.)*

104. The subgroup discussed document TG/PLECT(proj.2), presented by Mr. Adriaan de Villiers (South Africa), and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Cover page	to add in box containing UPOV code “excluding *P. scutellarioides*”
1.	to add “excluding *P. scutellarioides*”
5.3 (d)	to add color groups as in TQ 5
6.5	to move sentence to chapter 8.1 “Unless otherwise indicated, observations should…”
Char. 6	to add state 1 “very narrow”
Char. 7	to add (+) and illustration to provide example of low and high ratio
Char. 9, 10	to be indicated as PQ
Char. 13	- to add (+) and explanation to read “To be observed excluding variegation.” - to add example variety “Easy Gold” for state 1
Char. 14	to delete (*)
Char. 15	to add state 9 “very strong”
Char. 18	to add (+)
Char. 21	to add state 9 “very dense”
Char. 23	to delete (*)
Char. 24	to delete state 2 “yellow”
Char. 28	to add state 9 “very high”
Char. 32	to add (+) and combine explanation with Ad. 33
Char. 35	to delete state 2 “yellow”
8.1 (c)	to read “… darker color…” instead of “darkest color”
Ads. 25, 26	to be combined
Ads. 27, 28	to be combined
Ad. 35	to be combined with Ad. 33
Ad. 33	- to add arrow to indicate outer side of upper corolla lobe - to place legend on left side of illustration for “outer side of lower corolla lobe”
Ad. 36	to read “…is when all plants…”

TQ 1	to have same layout of table as in proj. 1 (Botanical name, common name, species – specify, hybrids - specify)
TQ 5	to complete even states in 5.3

**Salvia* (Salvia *L.*)

105. The subgroup discussed document TG/SALVI(proj.3), presented by Mr. Tetsuya Takahashi (Japan), and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
5.3 (g)	to add state “none” to become Gr. 1 and renumber following states of expression
Char. 6	to add state “very dense” note 5 and to move example variety “Santa Barbara” to state 5
Char. 19	to add state “very dense” note 5 and to move example variety “Artemis” to note 5
Char. 20	to add state “very strong” note 5 and move example variety “Omaha Gold” to note 5
Char. 22	to have states absent or weak (1), medium (2), strong (3)
Char. 32	to add (c)
Char. 33	to add state of expression “very dense” note 5 and move example variety “Santa Barbara” to note 5
Char. 36	to add (+)
Char. 40	to add state of expression “very dense” note 5 and move example variety “Santa Barbara” to note 5
Char. 41	to have example varieties “Haeumanarc” for state 1, “Dansalfun 1” for state 3, “Heatwave Blast” for state 5
Char. 42	to read “Corolla lower lip: attitude relative to corolla tube” and to have states parallel (1), moderately downwards (2), strongly downwards(3), moderately reflexed (4), strongly reflexed (5)
Char. 46	to have states absent or weak (1), medium (2), strong (3)
8.1 (c)	to read “… the darker color…” instead of the “darkest color”
Ad. 22	to delete photo for state 2
Ad. 23	to read “The natural length of inflorescence should be observed.”
Ad. 46	to delete photo for state 2
TQ 5.2	to include all even states of expression (2, 4, 6, 8)
TQ 5.7	to add state “none” to become Gr. 1 and renumber following states of expression

**Zinnia* (Zinnia *L.*)

106. The subgroup discussed document TG/ZINNIA(proj.5), presented by Mr. José Mejia Muñoz (Mexico), and agreed the following:

General	Leading Expert to confirm that all IP rights on photos, illustrations and text have been respected
Cover page	coverage of Test Guidelines to be change to the following UPOV codes: ZINNI_ANG; ZINNI_ELE; ZINNI_HAA; ZINNI_PER
1.	to read “These Test guidelines apply to all varieties of *Zinnia angustifolia, Z. elegans, Z. haageana, Z peruviana*, and their hybrids.”
2.3	to read “… sufficient quantity of plant material to produce 10 plants for F1 hybrids and 40 plants for cross-pollinated varieties”
3.1.1	to be deleted
3.4.1	to be replaced with current 3.4.1
4.1.4	to have two paragraphs for cross-pollinated varieties and F1 hybrids

4.2.2, 4.2.3	to be deleted
4.2.4	to read “For the assessment of uniformity of F1 hybrids,...”
5.3	- to add (*) in the table of characteristics for all characteristics used as grouping characteristics - to have the following grouping characteristics: Plant: growth habit Plant: height Flower head: type Ray floret: color of inner side
Table of Chars.	- to check example varieties and denominations - to add illustrations as in proj.4
Char. 4	to delete state 2
Char. 9	- state “towards middle” to read “at middle”- - to add illustration
Char. 15	to add illustration as in proj.4, but improve photo for state 1
Char. 16	to read “Flower head: number of ray florets (excluding single flower head type)”
Char. 20	to add (+) and illustrations on low and high ratio
Char. 21	- to read "Ray floret: profile in cross section” and to add explanation “to be observed at the middle part of ray floret” in Ad. 21 - state (1) “strongly convex with margins touching” to be moved after state “strongly convex”
Chars. 26, 28, 30, 31	to add “(indicate reference number)” to state of expression
Chars. 29, 31, 32	to add (d)
Chars. 30, 31, 32	to have same order of tertiary color characteristics as for secondary color characteristics
8.1	to include guidance on time of observation of characteristics
8.1 (c)	to be deleted
8.2	to check whether all intellectual property rights on photographs have been observed
Ad. 21	to be completed with illustrations for the other states of expression
Ad. 22	to correct spelling “reflexing”
Ad. 27	to improve illustration for state 2 “basal part”
TQ 1	to be updated according to changed coverage of Test Guidelines
TQ 4.2	to check whether to be completed (to select standard wording from template)
TQ 5	- to check whether to add in TQ 5 all characteristics used as grouping characteristics - to complete the list with all states of expression including even states
TQ 6	to be completed
TQ 7.4	to add ASW requesting color photograph

Information and databases

(a) UPOV information databases

107. The TWO considered document TWO/48/5.

GENIE database

108. The TWO noted the information on allocation of crop type(s) for UPOV codes used in the PLUTO database as of June 26, 2014.

109. The TWO noted that information on crop type(s) had been introduced in the GENIE database and the GENIE database had been modified to show the crop type(s) for each UPOV Code.

110. The TWO noted that a standard report for TWP allocations for UPOV codes had been introduced on the GENIE webpage.

111. The TWO noted that allocation of crop type(s) for further UPOV codes would occur when UPOV codes were used in the PLUTO database for the first time.

112. The TWO agreed to check the UPOV codes used in the PLUTO database for the first time, since June 26, 2014, which were provided in Annex III, part C to document TWO/48/5 (available on the TWO/48 website) and to submit comments to the Office of the Union by October 16, 2015.

UPOV code system

113. The TWO agreed to check the amendments to UPOV codes, which were provided in Annex III part A, to document TWO/48/5.

114. The TWO agreed to check the new UPOV codes or new information added for existing UPOV codes, which were provided in Annex III, part B, to document TWO/48/5.

115. The TWO agreed to submit comments on Annex III, parts A "UPOV codes amendments to be checked" and B "New UPOV codes or new information", to the Office of the Union by October 16, 2015.

PLUTO database

116. The TWO 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 Annex II to document TWO/48/5.

117. The TWO noted that an additional column in the PLUTO search screen, showing the date on which the information was provided, had been introduced.

118. The TWO noted that both the "Denomination" and "Breeder's Ref" fields had been made searchable, independently or in combination, by denomination search tools on the "Denomination Search" page of the PLUTO database.

119. The TWO noted the information concerning the training course "Contributing data to the PLUTO database", held in Geneva in December 2014 and the plans to organize three further courses, in English, French and Spanish.

(b) Variety description databases

120. The TWO considered document TWO/48/6.

121. The TWO noted that 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.

122. The TWO noted that the TC had agreed to include a discussion item on facilitating the development of databases at its fifty-second session.

(c) Exchange and use of software and equipment

123. The TWO considered document TWO/48/7.

124. The TWO noted that the Council, at its forty-eighth ordinary session, had adopted the revision of document UPOV/INF/16 "Exchangeable Software" (document UPOV/INF/16/4 on the basis of document UPOV/INF/16/4 Draft 1).

125. The TWO noted that 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.

126. The TWO noted that the TC, at its fifty-first session, and the CAJ, at its seventy-first session, had agreed the proposed revision of document UPOV/INF/16/4 concerning the inclusion of information on the use of software by members of the Union in conjunction with the comments of the TC, as set out in Annex I to document TWO/48/7 and that a draft of document UPOV/INF/16/5 "Exchangeable Software" would be presented for adoption by the Council at its forty-ninth ordinary session.

127. The TWO noted that the Council, at its forty-eighth ordinary session, had adopted document UPOV/INF/22 "Software and equipment used by members of the Union" (document UPOV/INF/22/1).

128. The TWO noted that the TC, at its fifty-first session, and the CAJ, at its seventy-first session, had agreed the proposed revision of document UPOV/INF/22/1 concerning software and equipment used by members of the Union in conjunction with the comments of the TC, as set out in Annex II to document TWO/48/7, and a draft of document UPOV/INF/22 would be presented for adoption by the Council at its forty-ninth ordinary session.

(d) Electronic application systems

129. The TWO considered document TWO/48/8.

130. The TWO noted the developments concerning the development of a prototype electronic form.

Recommendations on draft Test Guidelines

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

131. The TWO agreed that the following draft Test Guidelines should be submitted to the TC for adoption at its fifty-second session, to be held in Geneva from March 14 to 16, 2016, on the basis of the following documents and the comments in this report:

Subject	Relevant document(s)
Aglaonema (*Aglaonema* Schott.)	TG/AGLAO(proj.5)
*Calibrachoa (*Calibrachoa* (L.) Llave & Lex.) (Revision)	TG/207/2(proj.2)
*Cordyline (*Cordyline* Comm. ex Juss.)	TG/CORDY(proj.3)
*Grevillea (*Grevillea* R. Br. corr. R. Br.)	TG/GREVI(proj.3)
*Plectranthus (*Plectranthus* L'Hér.)	TG/PLECT(proj.2)
*Salvia (*Salvia* L.)	TG/SALVI(proj.3)

(b) Test Guidelines to be discussed at the forty-ninth session

132. The TWO agreed to discuss the following draft Test Guidelines at its forty-ninth session:

*Abelia (*Abelia* R. BR.)
Alstroemeria (*Alstroemeria* L.) (Revision)
Calendula (*Calendula* L.)
Coleus (*Plectranthus scutellarioides* (L.) R. Br.)
*Dianella (*Dianella* Lam. ex Juss.) (Partial Revision: Chars. 16 and 22)
*Freesia (*Freesia* Eckl. ex Klatt) (Revision)
Gazania (*Gazania* Gaertn.)

* Possible final draft Test Guidelines

Guzmania (*Guzmania* Ruiz et Pav.) (Revision)
Hardy Geranium (*Geranium* L.)
Hydrangea (*Hydrangea* L.) (Revision)
Kangaroo Paw (*Anigozanthos* Labill.) (Revision)
*Lavender (*Lavandula* L.) (partial revision: addition of new characteristics for Leaf: length, width and color of corolla)
*Petunia (*Petunia* Juss.) (Revision)
*Zinnia (*Zinnia* L.)

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

(c) Possible Test Guidelines to be discussed in 2017

134. The TWO expressed its interest to consider drafts of new Test Guidelines for China-rose (*Hibiscus rosa-sinensis* L.) and of revisions of Berberis (document TG/68/3), Poinsettia (document TG/24/6) and Narcissus (document TG/87/2) in 2017.

Guidance for drafters of Test Guidelines

135. The TWO considered document TWO/48/11.

136. The TWO agreed with the plan to update the TG drafters' webpage to provide the information set out in paragraph 11 of document TWO/48/11 as follows:

Web-based TG Template
Additional characteristics
Summary information on quantity of plant material required on adopted Test Guidelines
Test Guidelines under development (reference to document TC/[xx]/2)
Shapes extract from document TGP/14

137. The TWO noted that Annex 4 "Collection of Approved Characteristics" needed to be updated to reflect the development of the web-based TG Template, which contained a database comprising all approved characteristics.

Date and place of the next session

138. At the invitation of the Republic of Korea, the TWO agreed to hold its forty-ninth session in Gimcheon City, Republic of Korea, from June 13 to 17, 2016, with the preparatory workshop on June 12, 2016.

Future program

139. 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 (written reports to be prepared by members and observers
   (b) Reports on developments within UPOV (oral report by the Office of the Union)
4. Molecular Techniques (document to be prepared by the Office of the Union)

5. TGP documents (documents to be prepared by the Office of the Union and by Israel)

6. Variety denominations (document to be prepared by the Office of the Union)

7. Information and databases

   (a) UPOV information databases (documents to be prepared by the Office of the Union)

   (b) Variety description databases (documents to be prepared by the Office of the Union)

   (c) Exchangeable software (document to be prepared by the Office of the Union)

   (d) Electronic application systems (document to be prepared by the Office of the Union)

8. Uniformity assessment (document to be prepared by the Office of the Union)

9. Experiences with new types and species (oral reports invited)

10. Variety descriptions (presentations by Australia, European Union, Germany and Netherlands and presentations invited)

11 Case study on minimum distances between vegetatively reproduced ornamental and fruit varieties (presentation by the European Union and presentations invited)

12. Definition of color groups for RHS Colour Charts (document to be prepared by Germany)

13. Experience with the RHS Colour Chart and possible future addition of colors (document to be prepared by the United Kingdom)

14. Creation of illustrations for Test Guidelines (presentation to be prepared by the Republic of Korea)

15. Web-based TG Template (presentation to be prepared by the Office of the Union)

16. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee

17. Proposals for partial revision/corrections of Test Guidelines

18. Discussion on draft Test Guidelines (Subgroups)

19. Recommendations on draft Test Guidelines

20. Guidance for drafters of Test Guidelines

21. Date and place of the next session

22. Future program

23. Adoption of the Report of the session (if time permits)

24. Closing of the session

Visit

140. On the afternoon of September 16, 2015, the TWO visited the National Institute of Agricultural Botany (NIAB) field station in Cambridge, where more than 1,000 agricultural and ornamental varieties were tested annually for Plant Breeders' Rights and National Listing. The test site comprised 250 hectares, including 3,300 m^2 of greenhouses. The TWO was welcomed by, and received an introductory talk from, Ms. Elizabeth Scott, Head of Crop Characterization, NIAB. The TWO visited the greenhouses complex and various DUS trials for ornamental plants. The TWO had practical discussions in subgroups on the draft Test Guidelines of Abelia, Coleus, Salvia and Zinnia, using a collection of varieties provided by NIAB.

141. The TWO adopted this report at the end of the session.

[Annexes follow]

ANNEX I

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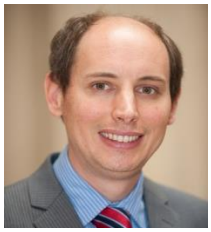

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[Annex II follows]

Department for Environment Food & Rural Affairs

NIAB

UPOV Technical Working Party for Ornamental Plants and Forest Trees

48th Session, Cambridge September 14 to 18 2015

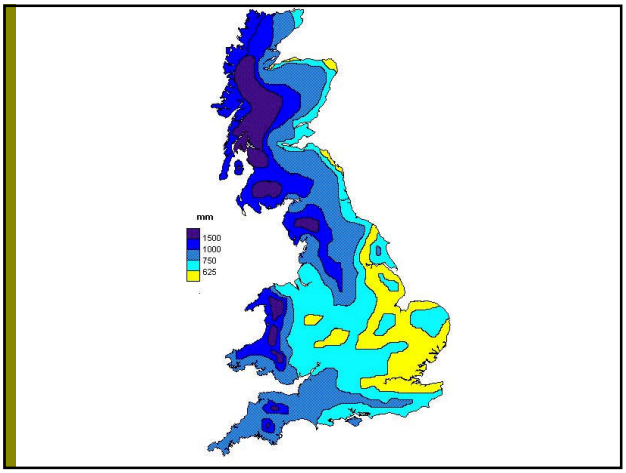
Andrew Mitchell

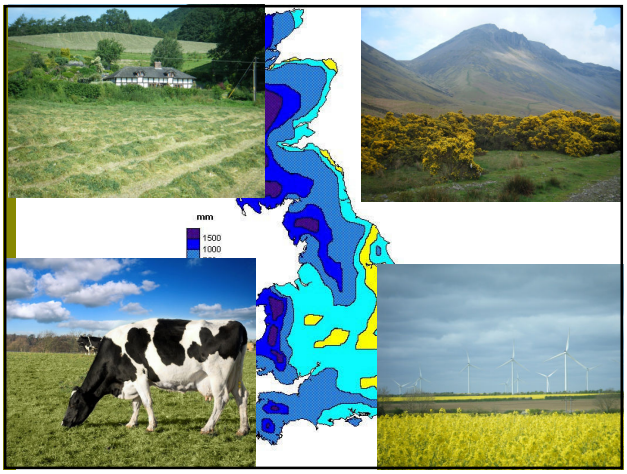
Head of Varieties and Seeds Policy and Controller of Plant Variety Rights

United Kingdom of Great Britain and Northern Ireland

One of the world's largest economies
Population 64m

Service sector	78% of GDP
Manufacturing	15
Construction	6
Agriculture	1





Climate

Average summer maximum	20°C
Average winter minimum	1°C
Average annual rainfall	850mm
Rainfall range	550 to 4,500
Average annual sunshine	1500 hours

Department for Environment, Food & Rural Affairs

Agriculture and Horticulture

	Area (1,000ha)	Value (£m)
Cereals	3,200	3,500
Oilseeds	700	700
Potatoes	140	680
Sugar beet	120	315
Horticulture	164	3,000

Department for Environment, Food & Rural Affairs

Horticulture

	Area (1,000ha)	Value (£m)
Vegetables	116	1,234
Orchard fruit	23	163
Soft fruit	9	393
Ornamental	12	1,166

Department for Environment, Food & Rural Affairs

Origins of modern plant breeding in UK

1912
Plant Breeding Institute, Department of Agriculture of the University of Cambridge

1964
Plant Varieties and Seeds Act, implementing 1961 UPOV Convention

Department for Environment, Food & Rural Affairs

Plant breeding successes

Semi-dwarf varieties of wheat
Improvements in breadmaking quality
Low glycosidic nitrile barley
Extended season production in strawberries

'English' roses
Combining the shape and scent of old roses with the attributes and colour range of modern varieties

Diascia
From the breeding programme of an enthusiast in the 1980s, a wide range of exciting new colours. Used by breeders of other Diascia species to produce new types and forms

Digitalis
New inter-specific hybrids expanding the colour range

Plant variety testing

Defra

Animal & Plant Health Agency APHA

Department for Environment, Food & Rural Affairs

Plant variety testing

Defra

Animal & Plant Health Agency APHA

NIAB AFBI SASA

Department for Environment, Food & Rural Affairs

Plant variety testing

For agricultural species, almost all DUS testing starts for official variety registration under European Union legislation

DUS testing is carried out under CPVO's quality assurance so that reports can be used for EU PVR

Plant variety testing

	Average no. DUS tests
Cereals	170
Oilseed rape	200
Sugar beet	60
Perennial ryegrass	60
Field beans	10
Potatoes	10
Vegetables	10

Department for Environment, Food & Rural Affairs

Plant variety testing

DUS testing for ornamentals

About 400 tests a year
Mostly for CPVO
Main species chrysanthemums, with a wide range of perennials and container plants

Department for Environment, Food & Rural Affairs

[Annex III follows]

ANNEX III

LIST OF LEADING EXPERTS

DRAFT TEST GUIDELINES TO BE SUBMITTED TO THE TECHNICAL COMMITTEE IN 2016

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

by October 30, 2015

Species	Basic Document(s)	Leading expert(s)	Interested experts (States/Organizations)[2]
Aglaonema (*Aglaonema* Schott.)	TG/AGLAO(proj.5)	Mr. Kenji Numaguchi (JP)	AU, KR, NL, NZ, QZ, ZA, Office
*Calibrachoa (*Calibrachoa* (L.) Llave & Lex.) (Revision)	TG/207/2(proj.2)	Ms. Andrea Menne (DE)	AU, CA, JP, KR, MX, NZ, QZ, ZA, Office
*Cordyline (*Cordyline* Comm. ex Juss.)	TG/CORDY(proj.3)	Mr. Chris Barnaby (NZ)	AU, GB, MX, NL, QZ, ZA, Office
*Grevillea (*Grevillea* R. Br. corr. R. Br.)	TG/GREVI(proj.3)	Mr. Nik Hulse (AU)	GB, MX, NZ, Office
*Plectranthus (*Plectranthus* L'Hér.)	TG/PLECT(proj.2)	Mr. Adriaan de Villiers (ZA)	AU, DE, NL, QZ, Office
*Salvia (*Salvia* L.)	TG/SALVI(proj.3)	Mr. Tetsuya Takahashi (JP)	AU, CA, CN, FR, GB, IL, KR, MX, NZ, QZ, ZA, Office

[2] for name of experts, see List of Participants

DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWO/49
(* indicates possible final draft Test Guidelines)

(Guideline date for Subgroup draft to be submitted by Leading Expert: March 4, 2016
Guideline date for comments to Leading Expert by Subgroup: April 1, 2016)

New draft to be submitted to the Office of the Union
before April 29, 2016

Species	Basic Document(s)	Leading expert(s)	Interested experts (States/Organizations) [3]
*Abelia (*Abelia* R. BR.)	TG/ABELI(proj.3)	Ms. Françoise Jourdan (FR)	CA, GB, JP, KR, MX, NZ, QZ, Office
Alstroemeria (*Alstroemeria* L.) (Revision)	TG/29/7	Mr. Henk de Greef (NL)	CA, KR, JP, MX, NZ, QZ, ZA, Office
Calendula (*Calendula* L.)	New	Mr. Kentaro Sekizawa (JP)	DE, GB, KR, QZ, ZA, Office
Coleus (*Plectranthus scutellarioides* (L.) R. Br.)	TG/SOLEN_SCU (proj.1)	Mr. Takayuki Mikuni (JP)	CA, DE, GB, KR, QZ, ZA, CIOPORA, Office
*Dianella (*Dianella* Lam. ex Juss.) (Partial Revision: Chars. 16 and 22)	TG/288/1	Mr. Nik Hulse (AU)	GB, NZ, QZ, ZA, Office
*Freesia (*Freesia* Eckl. ex Klatt) (Revision)	TG/27/7(proj.2)	Mr. Henk de Greef (NL)	JP, KR, MX, QZ, ZA, Office
Gazania (*Gazania* Gaertn.)	New	Mr. Adriaan de Villiers (ZA)	AU, GB, JP, KR, NZ, QZ, CIOPORA, Office
Guzmania (*Guzmania* Ruiz et Pav.) (Revision)	TG/182/4(proj.1)	Mr. Henk de Greef (NL)	BR, CN, JP, MY, QZ, Office
Hardy Geranium (*Geranium* L.)	TG/GERAN(proj.1)	Ms. Elizabeth Scott (GB)	CA, DE, GB, JP, KR, MX, NL, NZ, QZ, CIOPORA, Office
Hydrangea (*Hydrangea* L.) (Revision)	TG/133/4	Ms. Françoise Jourdan (FR)	AU, CA, DE, JP, MX, NZ, KR, QZ, ZA, Office
Kangaroo Paw (*Anigozanthos* Labill.) (Revision)	TG/175/3	Mr. Nik Hulse (AU)	GB, JP, KR, NZ, QZ, Office
*Lavender (*Lavandula* L.) (Partial Revision: addition of new characteristics for Leaf length and width and color of corolla)	TG/194/1	Ms. Françoise Jourdan (FR)	AU, CA, GB, JP, NZ, QZ, ZA, Office
*Petunia (*Petunia* Juss.) (Revision)	TG/212/2(proj.2)	Ms. Andrea Menne (DE)	AU, CA, CN, JP, KR, MX, NZ, QZ, ZA, CIOPORA, Office
*Zinnia (*Zinnia* L.)	TG/ZINNIA(proj.5)	Mr. Jose Mejía Muñoz (MX)	CN, GB, IL, JP, KR, Office

[End of Annex III and of Report]

[3] for name of experts, see List of Participants