

Technical Committee**TC/56/23.****Fifty-Sixth Session
Geneva, October 26 and 27, 2020****Original:** English
Date: October 27, 2020

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

1. The Technical Committee (TC) held its fifty-sixth session via electronic means on October 26 and 27, 2020. The list of participants is reproduced in Annex I to this report.
2. The session was opened by Mr. Nik Hulse (Australia), Chairperson of the TC, who welcomed the participants and the new Secretary-General of UPOV, Mr. Daren Tang.
3. Mr. Daren Tang, Secretary-General of UPOV, welcomed participants to the first virtual meeting of the Technical Committee and thanked participants for their cooperation and support in the approach taken for the UPOV sessions in 2020, namely virtual meetings, combined with consideration of documents by correspondence. Mr. Tang recalled that the work of the Technical Committee was a corner-stone of the UPOV system. The guidance provided on the examination of Distinctness, Uniformity and Stability (“DUS”) was the basis for harmonization. This harmonization was the basis for cooperation between members of the Union, which was an important benefit of the UPOV system. The Secretary-General highlighted that a key point of discussion during the Technical Committee would be measures to enhance cooperation in examination. As UPOV continues to grow, cooperation becomes increasingly important; particularly for new UPOV members and for plant breeders. He recalled that the UPOV system was created to encourage plant breeding, so the system should be efficient for plant breeders to use. Mr. Tang congratulated the six Technical Working Parties (TWPs) on successfully conducting their work programs by virtual meetings in 2020 and expressed appreciation for the discussions on how to build on the positives of the TWP virtual meetings, for instance the increased participation and inter-sessional work, while retaining and enhancing the benefits of physical meetings when they can resume.

Adoption of the agenda

4. The TC noted that no documents had been received for item 15 “Discussion session: Minimum distances between varieties,” and agreed to delete item 15 from the agenda. Subject to that amendment, the TC adopted the agenda as presented in document TC/56/1 Rev..

Outcome of the consideration of documents by correspondence

5. The TC considered document TC/56/22.
6. The TC noted the information on outcome of the procedure for consideration of documents by correspondence, as reported in document TC/56/22.

Report by the Vice Secretary-General on developments in UPOV

7. The TC noted that a pre-recorded video presentation in English, with subtitles in English, French, German and Spanish, was available at the TC/56 webpage. A copy of the presentation was provided in document TC/56/INF/8.

8. The TC also noted that, since the posting of the video presentation, Mr. Amit Sharma had been appointed as IT Support Officer on a temporary appointment, starting on November 1, 2020.

Progress report on the work of the Technical Working Parties and the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)

9. The TC noted that the Technical Working Party for Agricultural Crops (TWA), Technical Working Party on Automation and Computer Programs (TWC), Technical Working Party for Ornamental Plants and Forest Trees (TWO), Technical Working Party for Vegetables (TWV) and the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT) had held their sessions in 2020 via electronic means.

10. The TC received oral reports from the Chairpersons on the work of the TWA, TWC, TWF, TWO, TWV and BMT. A copy of the reports of the Chairpersons is provided in Annex II to this report.

11. The TC approved the program of work for the TWPs and BMT sessions in 2021, as presented in the respective meeting reports and reports by the Chairpersons. The TC agreed that the programs of work should be proposed for approval by the Council, at its session to be held on October 30, 2020.

Matters arising from the Technical Working Parties

12. The TC considered document TC/56/3 and noted developments in the TWPs concerning:

- (i) New issues arising for DUS examination;
- (ii) Use of disease resistance characteristics;
- (iii) Possible developments to enable UPOV Codes to provide useful information on variety groups or types for DUS testing purposes (Plavarlis project - UPOV codes);
- (iv) Minimum distances between vegetatively propagated ornamental varieties;
- (v) Access to plant material for the purpose of management of variety collections and DUS examination;
- (vi) DUS examination of mutant varieties of apple;
- (vii) Relevant matters for DUS examination in the fruit sector;
- (viii) Guidance for drafters of Test Guidelines;
- (ix) Experiences with new types and species;
- (x) Statistical analysis software "DUS Excel";
- (xi) Tools and methods for DUS examination;
- (xii) Phenotyping and image analysis.

Recommendations concerning the election of new chairpersons of the Technical Working Parties

13. The TC noted that document TC/56/15 had been considered by correspondence. The TC noted that decisions on document TC/56/15 had been taken by the TC by correspondence, as provided in document TC/56/22, paragraphs 19 and 20.

14. The TC noted the report from the Office of the Union that the Council, in the procedure by correspondence, had elected, on October 25, 2020, the next Chairpersons of the TWPs and the BMT for a term of three years ending with the fifty-seventh ordinary session of the Council, in 2023, as follows (see document C/54/17 "Outcome of consideration of documents by correspondence", paragraphs 40 and 41):

- (a) Ms. Renée Cloutier (Canada) as Chairperson of the Technical Working Party for Agricultural Crops (TWA);
- (b) Mr. Christopher Barnaby (New Zealand) as Chairperson of the Technical Working Party for Fruit Crops (TWF);
- (c) Ms. Ashley Balchin (Canada) as Chairperson of the Technical Working Party for Ornamental Plants and Forest Trees (TWO);
- (d) Ms. Marian van Leeuwen (Netherlands) as Chairperson of the Technical Working Party for Vegetables (TWV); and
- (e) Ms. Beate Rücker (Germany) as Chairperson of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT).

Development of guidance and information materials

8.1 Matters for adoption by the Council in 2020

15. The TC noted that document TC/56/4 Rev. had been considered by correspondence.

TGP Documents

16. The TC noted that decisions on document TC/56/4 Rev. had been taken and the following documents had been approved by the TC by correspondence as provided in document TC/56/22, paragraphs 19 to 61 and 67 to 71:

- (a) Document TGP/5: Experience and Cooperation in DUS Testing; Section 6: UPOV Report on Technical Examination and UPOV Variety Description (Revision) (document TGP/5: Section 6/3 Draft 1)
- (b) Document TGP/7: Development of Test Guidelines (Revision) (document TGP/7/8 Draft 1)
- (c) Document TGP/14: Glossary of Terms Used in UPOV Documents (Revision) (document TGP/14/5 Draft 1)
- (d) Document TGP/15: Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS) (Revision) (document TGP/15/3 Draft 1)
- (e) Document TGP/0: List of TGP documents and latest issue dates (Revision) (document TGP/0/12 Draft 1)

Information Materials

- (f) Document UPOV/INF/16: Exchangeable Software (Revision) (document UPOV/INF/16/9 Draft 2)
- (g) Document UPOV/INF/22: Software and Equipment Used by Members of the Union (Revision) (document UPOV/INF/22/7 Draft 1)

17. The TC noted the report from the Office of the Union that the TGP documents and information materials above had been adopted by the Council on October 25, 2020, in the procedure by correspondence (see document C/54/17 "Outcome of consideration of documents by correspondence", paragraphs 16 to 24).

8.2 Possible future revisions of guidance and information materials

18. The TC considered document TC/56/14

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

- (i) *Data Processing for the Production of Variety Descriptions for Measured Quantitative Characteristics*

19. The TC considered document TC/56/5.

20. The TC considered the different approaches to convert observations into notes for producing variety descriptions for measured quantitative characteristics, as presented in document TC/56/5, Annexes III to VII, in conjunction with the additional information provided by Italy and Japan, as presented in document TC/56/5, paragraph 12.

21. The TC agreed that guidance on converting observation into notes would be beneficial for new members of the Union and international harmonization. The TC agreed that further information would be required to explain the complex circumstances influencing the choice of method to be used to convert observations into notes.

22. The TC agreed to invite the TC Chairperson in conjunction with the Office of the Union to develop proposals on next steps for developing guidance, to be presented to the TWP's and the TC at their sessions in 2021.

(ii) *The Combined-Over-Years Uniformity Criterion (COYU)*

23. The TC considered document TC/56/6.

24. The TC noted the draft presented in the Annexes to document TC/56/6 for the revision of document TGP/8, Section 9 "The Combined-Over-Years Uniformity Criterion (COYU)."

25. The TC agreed to request the Technical Working Parties, at their sessions in 2021, to consider the proposed revision of document TGP/8, Section 9 "The Combined-Over-Years Uniformity Criterion (COYU)", on the basis of the draft presented in the Annexes to document TC/56/6.

26. The TC noted that evaluation versions of software for COYU Splines in both "R" and "DUSTNT" software were planned to be released in November 2020.

27. The TC noted the expression of interest by experts from China, Finland, France and the United Kingdom to review the COYU Splines software.

28. The TC agreed with the TWC proposal to invite members to participate in a test campaign of the COYU Splines software until April 2021.

29. The TC agreed to request the TWC to prepare a report of the results of the test campaign of the COYU Splines software for consideration in conjunction with the revision of document TGP/8 by the TC at its fifty-seventh session.

Revision of document UPOV/INF/12 "Explanatory Notes on Variety Denominations under the UPOV Convention" (document UPOV/EXN/DEN)

30. The TC noted that it had considered document TC/56/4 Rev. by correspondence.

31. The TC noted that the TC had endorsed the request by the TWV, at its fifty-fourth session, not to introduce Class 205B in document UPOV/EXN/DEN/1, are set out in document TC/56/4 Rev..

32. The TC noted that draft document UPOV/EXN/DEN/1 would be considered by the CAJ, at its session to be held on October 28, 2020.

33. The TC noted that matters concerning a possible future revision of document UPOV/INF/12 were reported in document TC/56/INF/7 "Variety denominations."

34. The TC noted the report from the Office of the Union that the CAJ had received comments in reply to Circular E-20/120 of August 21, 2020, on document UPOV/EXN/DEN/1 Draft 4 that were not of a straightforward nature and, therefore, document UPOV/EXN/DEN/1 Draft 4 was not included in Circular E-20/160 of September 25, 2020, for approval by correspondence and would be presented for consideration by the CAJ at its virtual session on October 28, 2020, in conjunction with the comments received (see document CAJ/77/9 "Outcome of consideration of documents by correspondence", paragraph 34).

Review of document UPOV/INF/17 "Guidelines for DNA-Profiling: Molecular Marker Selection and Database Construction ('BMT Guidelines')"

35. The TC considered document TC/56/13 and the proposed revision of document UPOV/INF/17 on the basis of document UPOV/INF/17/2 Draft 4.

36. The TC agreed to request the TWP's to consider a draft revision of document UPOV/INF/17/1 (document UPOV/INF/17/2 Draft 5) at their sessions in 2021.

37. The TC noted that a draft revision of document UPOV/INF/17 (UPOV/INF/17/2 Draft 6) would be proposed for adoption by the Council, at its fifty-fifth session, to be held on October 29, 2021, subject to agreement by the TC at its fifty seventh session and the CAJ, at its seventy eighth session, to be held in 2021.

Development of document UPOV/INF/23 “UPOV Code System”

38. The TC noted the report from the Office of the Union that the CAJ, on October 25, 2020, in the procedure by correspondence, had approved the “Guide to the UPOV Code System”, on the basis of document UPOV/INF/23/1 Draft 1, and proposed that the TC consider a new draft of document UPOV/INF/23/1 “Guide to the UPOV Code System” in 2021 (see document CAJ/77/9 “Outcome of consideration of documents by correspondence”, paragraphs 26 and 27).

New proposals for revisions of guidance and relevant information materials

Document TGP/5: Experience and Cooperation in DUS Testing; Section 6: UPOV Report on Technical Examination and UPOV Variety Description

39. The TC agreed to request the TWPs, at their sessions in 2021, to consider the following proposal to amend document TGP/5 Section 6 to read as follows (see document TC/56/14, paragraph 26):

Chapter: UPOV Report on Technical Examination

- Item 13 to read “Testing station site(s) and place(s)”
- New item: Date and document number of UPOV Test Guidelines
- New item: Date and/or document number of Reporting Authority’s test guidelines

Chapter: UPOV Variety Description

- Item 11 to read “Testing station site(s) and place(s)”

Document TGP/7: Development of Test Guidelines

Links to relevant TGP documents guidance in Test Guidelines

40. The TC considered the proposal to indicate relevant guidance in TGP documents that could have links displayed in Test Guidelines, as set out in document TC/56/14, paragraphs 28 to 33. The TC noted that no additional guidance from TGP documents had been proposed by the TWPs, at their sessions in 2020, and agreed that no changes would be required to the standard wording in Test Guidelines.

Procedure for partial revision of UPOV Test Guidelines

41. The TC noted that the TWF, at its fifty-first session, had agreed that existing possibilities to propose partial revision of Test Guidelines during TWF and TC meetings should be used by members, as appropriate.

Program for the development of relevant information materials

42. The TC agreed the program for the development of TGP documents, as set out in document TC/56/14, Annex I.

43. The TC agreed the program for the development of relevant information materials, as set out in document TC/56/14, Annex II.

44. The TC noted that the program for the development of TGP documents and information materials would be considered by the CAJ, at its seventy-seventh session, to be held in Geneva on October 28, 2020, in conjunction with the conclusions of the TC at its fifty-sixth session.

Molecular techniques

45. The TC considered document TC/56/7.

Cooperation between international organizations

Inventory on the use of molecular marker techniques, by crop

46. The TC noted that on October 16, 2020, the Office of the Union had issued Circular E-20/189 inviting members to complete the survey on the use of molecular marker techniques, per crop, by December 15, 2020.

47. The TC noted that the results of the survey would be presented to the Technical Committee, at its fifty-seventh session, to be held in 2021.

Lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques

48. The TC agreed that another joint OECD, UPOV, ISTA workshop on molecular techniques should be organized in the near future.

49. The TC recalled that, at its fifty-fifth session¹, it had noted that there were no definitions on biochemical and molecular techniques in UPOV and had agreed that information from the survey on the techniques could help to clarify techniques that were considered to be biochemical or molecular. The TC agreed that joint OECD, UPOV, ISTA workshop on molecular techniques would be an opportunity to discuss the definitions used in molecular techniques with a view to their harmonization.

Joint document explaining the principal features of the systems of OECD, UPOV and ISTA

50. The TC noted that developments on a joint document explaining the principal features of the systems of OECD, UPOV and ISTA were reported to the TC at its fifty-sixth session, with the aim of proposing a draft joint document explaining the principal features of the systems of OECD, UPOV and ISTA for consideration by the TC at its fifty-seventh session.

51. The TC noted that the joint document would provide information on the status of molecular techniques for the purposes of each organization. The TC recalled that UPOV provided guidance for harmonized use of molecular techniques in documents UPOV/INF/17, TGP/15 and Test Guidelines.

Session to facilitate cooperation in relation to the use of molecular techniques

52. The TC noted the information provided by participants at the nineteenth session of the BMT on their work on biochemical and molecular techniques and areas for cooperation, as reproduced in the Annex to document TC/56/7.

53. The TC agreed to invite the TWPs and BMT to form discussion groups to allow participants to exchange information on their work on biochemical and molecular techniques and explore areas for cooperation.

54. The TC noted that the BMT had discussed “confidentiality, ownership and access to molecular data” at its nineteenth session.

Possible merger of BMT and TWC

55. The TC noted that document TC/56/10 Rev. had been considered by correspondence. The TC noted that decisions on document TC/56/10 Rev. had been taken by the TC by correspondence as provided in document TC/56/22, paragraphs 34 to 37.

56. The TC noted the report from the Office of the Union that the Council, on October 25, 2020, following the procedure by correspondence, had established the TWM to take effect from 2022 and elected the Chairperson of the BMT to act as Chairperson of the TWM ending with the fifty-seventh ordinary session of the Council, in 2023 (see document C/54/17 “Outcome of consideration of documents by correspondence”, paragraphs 32 to 35).

Cooperation in examination

57. The TC noted that it had considered document TC/56/11 by correspondence. The TC noted that decisions on document TC/56/11 had been taken by the TC by correspondence as provided in document TC/56/22, paragraphs 39 to 44.

Proposals for next steps

58. The TC considered document TC/56/22 “Outcome of consideration of documents by correspondence”.

¹ held in Geneva, on October 28 and 29, 2019

59. The TC noted the comments received during the procedure of consideration of documents by correspondence on document TC/56/11 "Cooperation in examination", as reported in document TC/56/22, paragraphs 45 to 48.

60. The TC noted the comment provided by the European Union in response to Circular E-20/119, of August 21, 2020, on the proposal to develop a package of compatible IT tools with the elements indicated in document TC/56/11, paragraph 19. The TC agreed to request the Office of the Union to present plans for the development of a package of compatible IT tools, for consideration by the TWPs and TC, at their sessions in 2021.

61. The TC noted the comment provided by Japan in response to Circular E-20/119, of August 21, 2020, on difficulties to submit plant material to the authority receiving an application due to phytosanitary, quarantine or other related matters, as reported in document TC/56/22, paragraphs 47 and 48.

62. The TC noted that plant material was required as a condition for granting breeders' rights in some members of the Union.

63. The TC agreed to propose to the CAJ the development of guidance to encourage UPOV members, on a voluntary basis, to take-over DUS test reports when the applicants could not submit plant material due to phytosanitary or other related issues where acceptable to the UPOV members concerned. The TC agreed that this proposal should be presented for consideration by the CAJ in document CAJ/77/2 "Report on developments in the Technical Committee."

Increasing participation of new members of the Union in work of the TC and the TWPs

64. The TC considered document TC/56/12.

65. The TC noted the outcome of organizing the 2020 sessions of the TWPs via electronic means, including the information provided by the Office of the Union on the TWC and BMT meetings held in September 2020.

66. The TC agreed that virtual meetings had shortcomings in relation to physical meetings, such as the difficulty to engage active participation and lack of possibility to have bilateral meetings.

67. The TC noted the increased number of participants at virtual meetings and agreed to explore integrating the benefits of this type of meetings into physical meetings.

68. The TC noted the following additional information that had not been included in document TC/56/12:

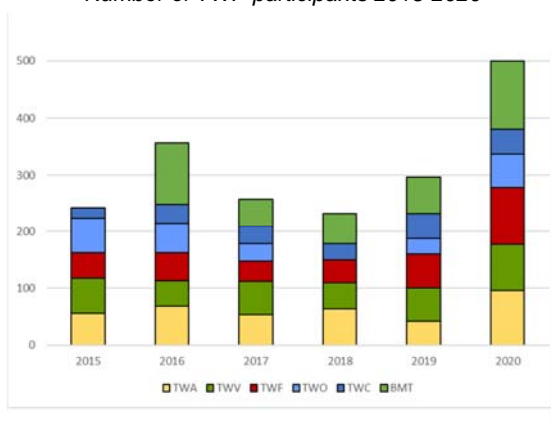
Table: Total number of participants (members of the Union + observers) in TWPs (2015-2020)

	TWV	TWO	TWA	TWF	TWC	BMT
2015	62	63	56	44	18	no BMT in 2015
2016	45	53	68	49	34	107
2017	58	30	54	36	31	49
2018	46	no TWO in 2018	64	40	28	55
2019	58	28	42	60	44	65
Average 2015-2019	54	44	57	46	31	69
2020	81	59	96	101	44	119
Change (%)	+50%	+34%	+68%	+120%	+41%	+72%

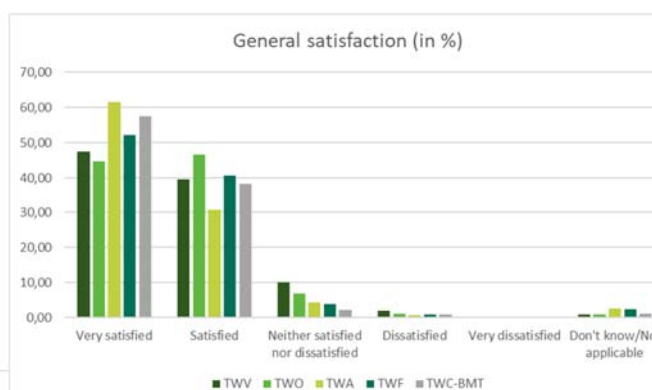
Table: Number of UPOV members participating in TWPs (2015-2020)

	TWV	TWO	TWA	TWF	TWC	BMT
2015	20	16	17	16	7	no BMT in 2015
2016	15	14	19	23	5	12
2017	18	14	28	19	9	19
2018	15	no TWO in 2018	23	18	15	18
2019	15	12	20	19	16	18
Average 2015-2019	17	14	21	19	10	16
2020	27	20	28	26	19	26
Change (%)	+59%	+43%	+33%	+37%	+90%	+62%

Number of TWP participants 2015-2020



General satisfaction of TWP participants in virtual meetings (2020)



69. The TC agreed to invite the TWPs to consider the following possible measures for physical and virtual participation at TWP meetings (see document TC/56/12, paragraph 21):

- To organize Test Guidelines subgroup discussions by electronic means prior to the TWPs instead of during the TWPs. The conclusions from the subgroups would be reported to the TWP session in the same way as the current procedure.
- To organize virtual preparatory workshops prior to the TWPs. Those preparatory workshops to be recorded and be made available on the UPOV website.
- To offer the possibility to provide comments and questions on documents in advance of the meeting.
- To organize electronic participation during the TWPs, using one of the following options, according to host facilities:
 - The host to provide the platform for virtual participants (with integrated audio/video on site), in addition to onsite participation in the meeting.
 - The UPOV Office to provide the platform for virtual participants. All participants (present on site or remotely) would be invited to join to the platform using their personal equipment.
- To have virtual meeting sessions for part of the day (e.g. 2 sessions of 2 hours per day) with sessions for onsite participants for the following:
 - visits to DUS trials or related facilities;
 - pre-organized bilateral discussions/ meetings on cooperation;
 - sessions to facilitate discussion or exchange of knowledge for DUS examination.

UPOV information databases

70. The TC considered document TC/56/8 by correspondence. The TC noted that decisions on document TC/56/8 had been taken by the TC by correspondence as provided in document TC/56/22, paragraphs 50 to 53.

Preparatory workshops

71. The TC considered document TC/56/9.

72. The TC agreed to organize preparatory workshops as a series of webinars at suitable dates according to the schedule of TWP sessions, as follows:

Webinar 1:

- (a) Introduction to UPOV and the role of UPOV Technical Working Parties (TWPs)
- (b) Overview of the General Introduction (document TG/1/3 and TGP documents)
 - Characteristics as the Basis for DUS Examination and Selection of Characteristics.

Webinar 2:

Guidance on drafting Test Guidelines – part I (document TGP/7)

- (a) Method of Observation (MS, MG, VS, VG);
- (b) Types of Expression (QL, PQ, QN), notes and distinctness;

Webinar 3:

Guidance on drafting Test Guidelines – part II (document TGP/7)

- (a) Subject of the Test Guidelines, Material Required and Method of Examination;
- (b) Shape and Color Characteristics;
- (c) Example Varieties;

Webinar 4:

The process for developing UPOV Test Guidelines:

- (a) Web-based TG Template; Additional Standard Wording; and Guidance Notes;
- (b) Role of the leading expert drafting Test Guidelines and how to participate as an interested expert

Webinar 5:

UPOV online resources

- (a) UPOV member laws: UPOV Lex
- (b) PBR Applications: UPOV PRISMA PBR Application Tool
- (c) DUS Examination: GENIE database, UPOV Code
- (d) Variety denomination/novelty: PLUTO database

Webinar 6:

- (a) Situation in UPOV Concerning the Possible Use of Molecular Techniques in DUS Examination
- (b) The Concept of Essentially Derived Varieties
- (c) The Role of UPOV in Variety Identification

73. The TC noted that the webinar presentations would be recorded and made available online, but not the discussions. The TC noted that the Office of the Union would provide content for the webinars and invite experts from members to act as panelists for discussions and to provide practical examples.

74. The TC noted that detailed arrangements concerning the webinars would be finalized by the Office of the Union in coordination with the chairpersons of the TC and TWPs.

75. The TC noted that, subject to a request by the hosts of the TWPs, workshops with physical participation could be organized in conjunction with the TWP sessions. In such cases, the content would be adapted to the particular context.

Test Guidelines

76. The TC considered document TC/56/2 by correspondence. The TC noted that decisions on document TC/56/2 had been taken by the TC by correspondence as provided in document TC/56/22 "Outcome of consideration of documents by correspondence", paragraphs 55 to 61, on the following matters:

- (a) Test Guidelines adopted by correspondence in 2020 (see Annex III to this document)
- (b) Test Guidelines for adoption (see Annex III to this document)
- (c) Corrections to Test Guidelines
- (d) Draft Test Guidelines discussed by the TWPs in 2020
- (e) Draft Test Guidelines to be discussed by the TWPs in 2021
- (f) Additional characteristics

- (g) Status of existing Test Guidelines or draft Test Guidelines
 (h) Superseded test guidelines

Partial revision of Test Guidelines

77. The TC considered document TC/56/22 “Outcome of consideration of documents by correspondence”, paragraphs 61 to 65.

78. The TC noted that the Office of the Union had identified Test Guidelines where a partial revision could be anticipated to produce significant benefits for harmonization between members, as presented in the table below. The TC noted that the following criteria had been used to generate the Test Guidelines: large number of PBR applications in several members of the Union; a number of members of the Union have indicated that their technical questionnaires had differences from the UPOV Technical Questionnaire; and relevant crops for UPOV PRISMA.

TG reference	Test Guidelines Common Name	Français	Deutsch	Español	Botanical Name	UPOV codes	TWPs
TG/2/7	Maize	Maïs	Mais	Chícharo, Maíz	Zea mays L.	ZEAAA_MAY	TWA/ TWW
TG/3/12	Wheat	Blé	Weizen	Trigo	Triticum aestivum L.	TRITI_AES	TWA
TG/11/8 Rev.	Rose	Rosier	Rose	Rosal	Rosa L.	ROSAA	TWO
TG/13/11	Lettuce	Laitue	Salat	Lechuga	Lactuca sativa L.	LACTU_SAT	TWW
TG/14/9	Apple (fruit varieties)	Pommier (variétés fruitières)	Apfel (Fruchtsorten)	Manzano (variedades frutales)	Malus domestica Borkh.	MALUS_DOM	TWF
TG/22/10 Rev.	Strawberry	Fraisier	Erdbeere	Fresa, Frutilla	Fragaria L.	FRAGA	TWF
TG/37/10	Turnip	Navet	Herbst-, Mairübe	Nabo	Brassica rapa L. var. rapa (L.)	BRASS_RAP_R AP	TWW
TG/44/11 Rev.2	Tomato	Tomate	Tomate	Tomate	Solanum lycopersicum (L.) Karst. ex. Farw.	SOLAN_LYC	TWW
TG/46/7	Onion, Echalion; Shallot; Grey shallot	Oignon, Échalion; Échalote; Échalote grise	Zwiebel, Echalion; Schalotte; Graue schalotte	Cebolla, Echalion; Chalota; Chalota gris	Allium cepa (Cepa Group), Allium cepa (Aggregatum Group) and Allium oschaninii O. Fedtsch. and hybrids between them	ALLIU_CEP_CE P, ALLIU_CEP_AG G, ALLIU_OSC	TWW
TG/49/8 Corr.	Carrot	Carotte	Möhre	Zanahoria	Daucus carota L.	DAUCU_CAR	TWW
TG/50/9	Grapevine	Vigne	Rebe	Vid	Vitis L.	VITIS	TWF
TG/53/7 Rev.	Peach	Pêcher	Pfirsich	Durazno, Melocotonero	Prunus persica (L.) Batsch	PRUNU_PER	TWF
TG/55/7 Rev. 5	Spinach	Épinard	Spinat	Espinaca	Spinacia oleracea L.	SPINA_OLE	TWW
TG/61/7 Rev. 2	Cucumber, Gherkin	Concombre, Cornichon	Gurke	Pepino, Pepinillo	Cucumis sativus L.	CUCUM_SAT	TWW
TG/76/8 Rev.2	Sweet Pepper, Hot Pepper, Paprika, Chili	Piment, Poivron	Paprika	Aji, Chile, Pimiento	Capsicum annuum L.	CAPSI_ANN	TWW
TG/81/6	Sunflower	Tournesol	Sonnenblume	Girasol	Helianthus annuus L. & H. debilis Nutt.	HLNTS_ANN; HLNTS_DEB	TWA
TG/84/4 Corr. Rev.	Japanese Plum	Prunier japonais	Ostasiatische Pflaume	Ciruelo japonés	Prunus salicina Lindl.	PRUNU_SAL	TWF
TG/98/7	Actinidia, Kiwifruit	Actinidia	Actinidia	Actinidia	Actinidia Lindl.	ACTIN	TWF
TG/104/5 Rev.	Melon	Melon	Melone	Melón	Cucumis melo L.	CUCUM_MEL	TWW
TG/119/4	Vegetable Marrow, Squash	Rosier	Rose	Rosal	Cucurbita pepo L.	CUCUR_PEP	TWW
TG/142/5	Watermelon	Melon d'eau; Pastèque;	Wassermelone	Sandía	Citrullus lanatus (Thunb.) Matsum. et Nakai, Citrullus vulgaris Schrad.	CTRLS_LAN	TWW
TG/187/2	Prunus Rootstocks	Porte-greffes de Prunus	Prunus-Unterlagen	Portainjertos de prunus	Prunus L.	PRUNU	TWF
TG/276/1	Hemp	Chanvre	Hanf	Cáñamo	Cannabis sativa L.	CANNB_SAT	TWA

TG reference	Test Guidelines Common Name	Français	Deutsch	Español	Botanical Name	UPOV codes	TWPs
TG/294/1 Corr. Rev.2	Tomato Rootstocks	Porte-greffe de tomate	Tomatenunterlag en	Portainjertos de tomate	Solanum habrochaites S. Knapp & D.M. Spooners; Solanum lycopersicum L. x Solanum habrochaites S. Knapp & D.M. Spooners; Solanum lycopersicum L. x Solanum peruvianum (L.) Mill.; Solanum lycopersicum L. x Solanum cheesmaniae (L. Ridley) Fosberg; Solanum pimpinellifolium L. x Solanum habrochaites S. Knapp & D.M. Spooners	SOLAN_LHA, SOLAN_LPE; SOLAN_LCH; SOLAN_PHA	TWV

79. The TC agreed to invite the Office of the Union to consult interested members of the Union to explore for which of these Test Guidelines it would be feasible to propose partial revisions that would enable members of the Union to follow a revised UPOV Technical Questionnaire. The TC agreed that for the Test Guidelines concerned, the Office of the Union would develop proposals for the partial revision of the Test Guidelines, to be presented to the TWPs, at their sessions in 2021.

Matters for information

80. The TC noted that the following documents had been posted as documents for information on the TC/56 webpage:

- (a) List of genera and species for which authorities have practical experience in the examination of distinctness, uniformity and stability (document TC/56/INF/4)
- (b) UPOV information databases (document TC/56/INF/3)
- (c) UPOV PRISMA (document TC/56/INF/2)
- (d) Variety description databases (document TC/56/INF/5)
- (e) Molecular techniques (document TC/56/INF/6)
- (f) Variety denominations (document TC/56/INF/7)

Program for the fifty-seventh session

81. The TC proposed to discuss the following items at its next session:

1. Opening of the session
2. Adoption of the agenda
3. Report on developments in UPOV
4. 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)
5. Matters arising from the Technical Working Parties
6. TGP and INF documents
7. Molecular techniques
8. Cooperation in examination
9. Increasing participation in the work of the TC and the TWPs
10. Information and databases
 - (a) UPOV information databases
 - (b) UPOV PRISMA
 - (c) Exchange and use of software and equipment
 - (d) Variety description databases
 - (e) Web-based TG template
11. Preparatory work
12. Variety denominations
13. Discussion on: minimum distances between varieties

14. Exchange and use of software and equipment
15. List of genera and species for which authorities have practical experience in the examination of distinctness, uniformity and stability
16. Test Guidelines
17. Program for the fifty-eighth session
18. Adoption of the report (if time permits)
19. Closing of the session

82. The TC adopted this report at the close of its session on October 27, 2020.

[Annex I follows]

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PLANTS (CIOPORA) /
INTERNATIONALE GEMEINSCHAFT DER ZÜCHTER VEGETATIV VERMEHRBARER
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IV. BUREAU / OFFICER / VORSITZ / OFICINA

Nik HULSE (Mr.), Chair

Beate RÜCKER (Ms.), Vice-Chair

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

Daren TANG (Mr.), Secretary-General

Peter BUTTON (Mr.), Vice Secretary-General

Yolanda HUERTA (Ms.), Legal Counsel and Director of Training and Assistance

Ben RIVOIRE (Mr.), Head of Seed Sector Cooperation and Regional Development (Africa, Arab Countries)

Leontino TAVEIRA (Mr.), Head of Technical Affairs and Regional Development (Latin America, Caribbean)

Hend MADHOUR (Ms.), IT Officer

Manabu SUZUKI (Mr.), Technical/Regional Officer (Asia)

Romy OERTEL (Ms.), Secretary II

[Annex II follows]

PROGRESS REPORT ON THE WORK OF THE TECHNICAL WORKING PARTIES AND
THE WORKING GROUP ON BIOCHEMICAL AND MOLECULAR TECHNIQUES,
AND DNA-PROFILING IN PARTICULAR (BMT)

Fifty-fourth session of the Technical Working Party for Vegetables (TWV)

Report by Ms. Romana Bravi (Italy), Chairperson of the TWV

1. The TWV held its fifty-fourth session, hosted by Brazil and organized by electronic means, from May 11 to 15, 2020, under the chairmanship of Ms. Romana Bravi (Italy). The report of the session is provided in document TWV/54/9 "Report".
2. The session was attended by 81 participants from 27 members of the Union and 3 observer organizations.
3. The TWV was welcomed by Mr. Marcio Rezende Evaristo Carlos, Deputy Secretary of Animal and Plant Health (SDA), Ministry of Agriculture, Livestock and Food Supply (MAPA).
4. The TWV received a presentation on plant variety protection in Brazil by Mr. Ricardo Zanatta Machado, Coordinator, National Service of Plant Variety Protection (SNPC).
5. The TWV considered the different approaches to convert observations into notes for producing variety descriptions for measured quantitative characteristics, as presented in document TWP/4/10, Annexes III to VII, and information, if any, that could facilitate their application. The TWV noted the comments provided by the European Union and Germany on the methods described in the Annexes of document TWP/4/10 and agreed to request additional information.
6. The TWV received a presentation on "Information on molecular markers in Test Guidelines explanations" from an expert from the Netherlands. A copy of the presentation is provided in documents TWV/54/7 and TWV/54/7 Add. The TWV considered the proposal to determine essential criteria for describing molecular marker assays in Test Guidelines, as presented in documents TWV/54/7 and TWV/54/7 Add.. The TWV agreed to invite the experts from the European Union and France to work with the Netherlands to prepare a new draft proposal for consideration by the TWV, at its fifty-fifth session
7. The TWV considered the proposal to amend the UPOV codes for *Beta vulgaris*, as set out in document TWP/4/4, Annex II. The TWV recalled that, at its fifty-second session, it had agreed that the information on type of maize (popcorn, sweet corn) and red and white cabbage varieties was useful for grouping varieties and organizing growing trials and should remain in the database (see document TWV/52/20 "Report", paragraph 94). The TWV agreed that the same approach should be used for UPOV codes of the different types of beet varieties.
8. The TWV noted that the TC, at its fifty-fifth session, had agreed to propose the revision of the list of classes in document UPOV/INF/12/5 to remove Industrial Chicory from denomination class 205, creating a new denomination class 205B, as follows:

Class 205	<i>Cichorium, Lactuca</i>	CICHO; LACTU
[Class 205B]	<i>Cichorium intybus L. var. sativum</i>	[CICHO_INT_SAT]

9. The TWV noted that Class 205B separated two subspecies in different denomination classes; Leaf Chicory (CICHO_INT_FOL) in Class 205; and Industrial Chicory (CICHO_INT_SAT) in new Class 205B. The TWV agreed that approximately 1200 varieties with UPOV code CICHO_INT in the PLUTO database could not be allocated with certainty to either one of the Classes. The TWV noted the concerns expressed by participants and agreed not to support the proposal to split denomination Class 205 at this stage. The TWV agreed that the proposal should be reconsidered at its fifty-fifth session.
10. The TWV received a presentation on "Data processing for disease resistance characteristics: the Pathostat application" by an expert from France. A copy of the presentation is provided in document TWV/54/6 Rev.. The TWV received a presentation on "Disease resistance tests on *Solanum sisymbriifolium*, *S. torvum* and *S. aethiopicum*: tomato and eggplant rootstocks - Italian laboratory experience" by an expert from Italy. The TWV agreed to propose that the expert from France be invited to present the

Pathostat software to the TWC, at its thirty-eighth session. The TWV noted the offer from France to provide data for interested experts to test the software. The TWV noted the expression of interest of the experts from Germany, Italy and Netherlands to test the software and agreed to invite the expert from France to report developments on testing at its next session, under the agenda item "Use of disease resistance characteristics". The TWV noted the offer from France for UPOV members to use the Pathostat software free of charge. It further invited the expert from France to consider whether to propose the inclusion of Pathostat in document UPOV/INF/16 "Exchangeable Software", in response of Circular E-20/031, issued by the Office of the Union on April 14, 2020.

Naming of intermediate state of expression in disease resistance characteristics

11. The TWV considered the naming of the intermediate state of expression in disease resistance characteristics. The TWV noted that guidance in document TGP/12 "Guidance on certain physiological characteristics" provided an example of quantitative disease resistance characteristic with intermediate state of expression "moderately".

12. The TWV noted that the term "intermediate" was commonly used among experts and agreed to propose amending the example for quantitative disease resistance characteristics with "1–3" scale in document TGP/12 to replace state of expression "moderately" by "intermediate". The TWV agreed that, in general, this should be the term used in Test Guidelines for disease resistance characteristics.

13. The TWV welcomed the offer from France and the Netherlands to present, at its fifty-fifth session, the current practice of the expression of intermediate state in disease resistance characteristics. It further noted the request made by the representative from ISF to seek alignment in the terminology used for disease resistance and invited ISF to make a presentation at its fifty-fifth session, on the view of the breeding vegetable seed industry on the terminology used for disease resistance.

14. The TWV discussed seven draft Test Guidelines and agreed that the draft Test Guidelines for Brown Mustard (*Brassica juncea* (L.) Czern.) and Chick-pea (*Cicer arietinum* L.) (Revision) should be submitted to the TC for adoption at its fifty-sixth session.

15. The TWV agreed to discuss the draft Test Guidelines for Chinese cabbage, Egg plant, Garden Rocket (Partial revision), Garlic (Partial revision), Kale, Lettuce (Partial revision), Melon (Partial revision), Pea (Partial revision), Pepper, Squash (Partial revision), Tomato, Tomato rootstock (Partial revision), Turnip, Wild Rocket (Partial revision) at its fifty-fifth session.

16. At the invitation of Turkey, the TWV agreed to hold its fifty-fifth session in Antalya, Turkey, from May 3 to 7, 2021.

17. 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 (oral report by the Office of the Union)
4. Molecular Techniques
 - (a) Developments in UPOV (document to be prepared by the Office of the Union)
 - (b) Presentation on the use of molecular techniques in DUS examination (presentations invited from members of the Union)
5. TGP documents
6. Variety denominations (document to be prepared by the Office of the Union)
7. Information and databases
 - (a) UPOV information databases (document to be prepared by the Office of the Union)
 - (b) Variety description databases (document to be prepared by the Office of the Union and presentations invited from France and the Netherlands)
 - (c) Exchange and use of software and equipment (document to be prepared by the Office of the Union)
 - (d) UPOV PRISMA (document to be prepared by the Office of the Union)
8. Experiences with new types and species (oral reports invited)

9. New issues arising for DUS examination (presentations invited from members of the Union)
10. Use of disease resistance characteristics (presentations invited from France, the Netherlands and ISF and other members of the Union and observers)
11. Indication of grouping characteristics on the UPOV Test Guidelines (Table of characteristics and TQ5) (presentation by France and the European Union)
12. Matters to be resolved concerning Test Guidelines put forward for adoption by the Technical Committee (if appropriate)
13. Discussions 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

Fifty-second session of the TWO

Report by Mr. Henk de Greef (Netherlands), Chairperson of the TWO

18. The TWO held its fifty-second session, hosted by the Netherlands and organized by electronic means, from June 8 to 12, 2020, under the chairmanship of Mr. Henk de Greef (Netherlands). The report of the session is provided in document TWO/52/11 "Report".

19. The session was attended by 59 participants representing 20 members of the Union, one observer State and one observer organizations.

20. The TWO was welcomed by Mr. Marien Valstar, Senior Policy Officer, Seeds and Plant Propagation Material, Ministry of Agriculture, Nature and Food Quality, DG AGRO.

21. The TWO received a presentation by Mr. Bert Scholte, Head of Variety Testing Department, Naktuinbouw, on plant variety protection in the Netherlands.

22. The TWO considered the revision of document TGP/5 Section 6 "UPOV Report on Technical Examination and UPOV Variety Description" and the explanation to item 16 "Similar Varieties and Differences from These Varieties", as presented in the Annex to Chapter "UPOV Variety Description". The TWO noted there were different interpretations among participants on the sentence: "Only those characteristics that show sufficient differences to establish distinctness should be given." The TWO agreed to invite the European Union to make a presentation on "providing information on 'Similar varieties and differences from these varieties'" at its fifty-third session.

23. The TWO considered the different approaches to convert observations into notes for producing variety descriptions for measured quantitative characteristics, as presented in document TWP/4/10, Annexes III to VII, and agreed that the approaches were primarily aimed at species with larger sample sizes and multi-year data sets, which was not often the case for ornamental species.

24. The TWO received presentations about 'Minimum distances' from an expert of The Netherlands, about a project of distinctness in Tulips, and from an expert from the International Community of Breeders of Asexually Reproduced Ornamental and Fruit-Tree Varieties (CIOFORA), on the conclusions of the project "Minimum distances between vegetatively propagated ornamental varieties - The Pelargonium Case Study". The TWO agreed to invite presentations at its fifty-third session to report on further developments on those projects.

25. The TWO received a presentation on "Disease resistance in ornamental crops" from an expert of The Netherlands. The TWO received an invitation from the Netherlands for interested experts to participate in a ring test for resistance to *Puccinia horiana* in Chrysanthemum varieties. The TWO agreed to invite the Netherlands to report on developments on the ring test at its fifty-third session.

26. The TWO received a presentation on "Possible developments to enable UPOV Codes to provide useful information on variety groups or types for DUS testing purposes" (Plavarlis project) by an expert from the

European Union. A copy of the presentation is provided in document TW/52/9. The TWO agreed to invite the European Union to report developments on the project at its fifty-third session.

27. The TWO discussed 13 draft Test Guidelines and agreed that the draft Test Guidelines for *Calibrachoa* (Partial revision), *Chrysanthemum* (Partial revision), *Coreopsis*, *Hydrangea*, *Lagerstroemia* and *Ranunculus* should be submitted to the TC for adoption at its fifty-sixth session.

28. The TWO agreed to discuss the draft Test Guidelines for *Amaryllis*, *Anthurium* (Revision), *Berberis*, *Echinacea*, *Eustoma*, *Lavender*, *Ling/Scots Heather*, *Magnolia*, *Oxypetalum coeruleum*, *Statice*, *Weigela* and *Zinnia* at its fifty-third session.

29. At the invitation of the Netherlands, the TWO agreed to hold its fifty-third session in Roelofarendsveen, Netherlands, from June 7 to 11, 2021.

30. The TWO agreed 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 (document to be prepared by the Office of the Union)
4. TGP documents (documents to be prepared by the Office of the Union)
5. Information and databases
 - (a) UPOV information databases (document to be prepared by the Office of the Union)
 - (b) Variety description databases (document to be prepared by the Office of the Union and documents invited)
 - (c) Exchange and use of software and equipment (document to be prepared by the Office of the Union)
 - (d) UPOV PRISMA (document to be prepared by the Office of the Union)
6. Molecular techniques (document to be prepared by the Office of the Union)
7. New issues arising for DUS examination (documents invited)
8. Minimum distances between vegetatively propagated ornamental varieties (documents invited)
9. Assessing ornamental crops using individual plant measurements (MS) (document to be provided by Germany, New Zealand and the United Kingdom and documents invited)
10. Disease resistance in ornamental crops (document to be prepared by the Netherlands)
11. Example varieties for asterisked quantitative characteristics when illustrations are provided (document to be prepared by Germany and the United Kingdom)
12. Possible developments to enable UPOV Codes to provide information on variety groups (document to be prepared by the European Union)
13. Procedures for grouping varieties using UPOV codes and relevant information sources (document to be prepared by the Netherlands)
14. Providing information on similar varieties in the UPOV model variety description (document to be prepared by the European Union)
15. Variety denominations (document to be prepared by the Office of the Union)
16. Report on court cases dealing with technical matters (document invited)
17. Experiences with new types and species (oral reports invited)
18. Guidance for drafters of Test Guidelines
19. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee
20. Discussion on draft Test Guidelines (Subgroups)
21. Recommendations on draft Test Guidelines
22. Date and place of the next session
23. Future program
24. Adoption of the Report on the session (if time permits)
25. Closing of the session

Forty-ninth session of the TWA

Report by Ms. Beate Rucker (Germany), Chairperson of the TWA

31. The TWA held its forty-ninth session, hosted by Canada and organized via electronic means, from June 22 to 26, 2020. In the absence of Ms. Cheryl Turnbull (United Kingdom), Chairperson of the TWA, the session was chaired by Ms. Beate Rucker (Germany). The report of the session is provided in document TWA/49/7 "Report".
32. The session was attended by 96 participants representing 28 members of the Union, one observer State and five observer organizations.
33. The TWA was welcomed by Mr. Anthony Parker, Commissioner, Plant Breeders' Rights Office, Canadian Food Inspection Agency (CFIA), who gave a presentation on plant breeders' rights in Canada.
34. The TWA adopted the agenda as presented in document TWA/49/1 Rev. 2. The documents, including Test Guidelines, were considered on the basis of the written comments received in advance to the session.
35. The TWA considered document TWP/4/10. The TWA noted that the document provided a summary of approaches developed for different testing conditions and agreed that it would not be necessary to request further information to facilitate their application at this stage.
36. The TWA considered document TWP/4/11 and agreed that the COYU method was frequently used in the examination of agricultural crops. The TWA thanked the experts from the United Kingdom for the improvements to the method of calculation and its implementation in a new COYU package.
37. The TWA considered document TWP/4/4 and noted the developments concerning alternative solutions to enable the UPOV Code to provide useful information on variety groups or types for DUS testing purposes. The TWA agreed that the introduction of a fourth element to the UPOV Code could be considered as an alternative to provide information on variety groups. The TWA agreed that the TWPs could provide the required information for the establishment of groups for the relevant crops.
38. The TWA considered the proposal to amend the UPOV codes for *Beta vulgaris*, as set out in document TWP/4/4, Annex II. The TWA noted that the proposal would classify different horticultural crops as synonyms under the same taxa, such as beetroot, leaf beet, turnip, turnip rape, sugar beet and fodder beet. The TWA agreed that it would not be appropriate to delete the UPOV codes proposed before a solution was provided to avoid the loss of information on variety groups.
39. The TWA received a presentation on "Developing a strategy to apply SNP molecular markers in the framework of winter Oilseed rape DUS testing" from an expert from France as provided in document TWA/49/5. The TWA agreed to invite France to report on developments on the project at its fiftieth session.
40. The TWA considered the additional characteristics notified to the Office of the Union, as reproduced in document TWP/4/13, Annex I. The TWA agreed that, at present, the additional characteristics should not be posted on the TG Drafters' webpage of the UPOV website.
41. The TWA considered document TWP/4/12 and noted the draft terms of reference for a possible single body to encompass the work of the TWC and BMT. The TWA expressed appreciation for the work on biometrical methods developed by the TWC and that of the BMT for the development of potential applications of molecular techniques to DUS testing. The TWA agreed these activities should be promoted and continued.
42. The TWA discussed ten draft Test Guidelines and agreed to submit the draft Test Guidelines for Rice (*Oryza sativa* L.) (Revision), Rye (*Secale cereale* L.) (Revision), Tea (*Camellia sinensis* (L.) Kuntze) (Revision) and Timothy (*Phleum pratense* L.; *Phleum nodosum* DC.) (Revision) to the Technical Committee for adoption.
43. The TWA agreed to discuss eight Test Guidelines at its fiftieth session, to be held in 2021. The TWA agreed that the Test Guidelines for Potato, Soya Bean, Sugarcane and Sunflower should be marked with an asterisk for 2021. New discussions are expected to begin on Test Guidelines for Cocksfoot (Revision) and Zoysia Grasses (New).
44. At the invitation of the United Republic of Tanzania, the TWA agreed to hold its fiftieth session in Arusha, United Republic of Tanzania, from June 21 to 25, 2021.

45. 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 (written reports to be prepared by members and observers)
 - (b) Report 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)
 - (c) Developments in UPOV (document to be prepared by the Office of the Union)
 - (d) Presentation on the use of molecular techniques in DUS examination (presentations by Argentina, France and presentations invited from members of the Union)
 5. TGP and INF series documents (documents to be prepared by the Office of the Union)
 6. Variety denominations (document to be prepared by the Office of the Union)
 7. Information and databases
 - (a) UPOV information databases (document to be prepared by the Office of the Union)
 - (b) Variety description databases (document to be prepared by the Office of the Union and documents invited)
 - (c) Exchange and use of software and equipment (document to be prepared by the Office of the Union and documents invited)
 - (d) UPOV PRISMA (document to be prepared by the Office of the Union)
 8. New technology used in DUS examination (documents to be prepared by Argentina, Denmark, ISF and documents invited)
 9. Examining hybrid varieties (document to be prepared by United Kingdom and documents invited)
 10. International cooperation in examination
 11. Experiences with new types and species (oral reports invited)
 12. Revision of Test Guidelines (document to be prepared by the Office of the Union)
 13. Guidance for drafters of Test Guidelines
 14. Discussion on draft Test Guidelines (Subgroups)
 15. Recommendations on draft Test Guidelines
 16. Date and place of the next session
 17. Future program
 18. Adoption of the Report on the session (if time permits)
 19. Closing of the session

Fifty-first session of the TWF

Report by Mr. Jean Maison (European Union), Chairperson of the TWF

46. The TWF held its fifty-first session, hosted by France and organized by electronic means, from July 6 to 10, 2020, under the chairmanship of Mr. Jean Maison (European Union). The report of the session is provided in document TWF/51/10 "Report".
47. The session was attended by 101 participants representing 26 members of the Union and one observer organization.
48. The TWF was welcomed by Mr. Laurent Jacquiau, Head, Office of seeds and integrated crop protection, Division for quality, health and plant protection, General Directorate for Food, Ministry of Agriculture and Food. Mr. Jacquiau gave a presentation on the "Regulatory framework and situation of the fruit reproductive material sector in France".
49. The TWF received a presentation by Mr. Fabien Masson, Head, Variety Study Department (SEV), and Ms. Carole Dirwimmer, Head of Fruits DUS testing, *Groupe d'étude et de contrôle des variétés et des semences* (GEVES), on "GEVES – Presentation and focus on Fruits DUS testing".
50. The TWF agreed to propose that meetings via electronic means were considered for advancing discussions on Test Guidelines during the period between TWP's sessions.

51. The TWF noted that characteristics assessed on the basis of measurement of a number of individual plants or parts of plants (MS) were being included in Test Guidelines and agreed to invite members to report on the approaches used to convert observations to notes, at its fifty-second session.

52. The TWF invited the experts from the European Union, Italy and New Zealand, at its fifty-second session to share their experiences on policies and/or model letters/contracts used for the submission of plant material to their authority and/or DUS examination offices. This information could be used as a basis for possible future possible revisions of UPOV Guidance (e.g. TGP/5, Section 11 "Examples of Policies and Contracts for Material Submitted by the Breeder") to help other UPOV members to facilitate access to plant material for the purpose of management of variety collections and DUS examination.

53. The TWF recalled the importance of exchanging information among PVP offices about applications received, especially for apple mutation groups where similar varieties might be submitted in various countries. The TWF agreed that the expert from the European Union should continue to coordinate the exchange of information among authorities involved in DUS testing for apple requesting information on 'Gala', 'Fuji' types, and to include 'Cripps Pink', 'Jonagold' and 'Elstar'. Requests should also be made to breeders on possible synonyms and trademarks.

54. The TWF discussed 11 draft Test Guidelines and agreed to submit the draft Test Guidelines for Common Sea Buckthorn (Partial revision), Pistachio and Physic Nut to the Technical Committee for adoption.

55. The TWF agreed to discuss the draft Test Guidelines for Apple (fruit varieties), Apricot, Argania, Date Palm, Grapevine, Guava, Goji, Hazelnut, Lemon (Partial revision), Mandarin (Partial revision), Mulberry, Raspberry, Sour Cherry/Duke Cherry, Strawberry, Sweet Cherry and Trifoliate Orange (Partial revision) at its fifty-second session.

56. At the invitation of China, the TWF agreed to hold its fifty-second session in Zhengzhou, China, from July 12 to 16, 2021.

57. The TWF proposed to discuss the following items at its fifty-second 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)
 - (e) Developments in UPOV (document to be prepared by the Office of the Union)
 - (f) Presentation on the use of molecular techniques in DUS examination (presentations invited from members of the Union)
5. TGP documents (documents to be prepared by the Office of the Union)
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) Exchange and use of software and equipment (document to be prepared by the Office of the Union)
 - (d) UPOV PRISMA (document to be prepared by the Office of the Union)
8. Experiences with new types and species (oral reports invited)
9. Access to plant material for the purpose of management of variety collections and DUS examination (presentations invited from European Union, Italy, New Zealand and others presentations invited from members of the Union)
10. DUS examination of mutant varieties of apple (document to be prepared by the European Union)
11. Matters relevant in DUS examination for the fruit sector (presentations invited from members and observers)
12. International cooperation on examination (document to be prepared by the Office of the Union and presentations invited from Canada and other members of the Union)
13. Assessing characteristics on the basis of measurements of individual plants or parts of plants for small samples (document to be prepared by the Office of the Union and presentations invited from France and other members of the Union)
14. Guidance for drafters of Test Guidelines

15. Matters to be resolved concerning Test Guidelines put forward for adoption by the Technical Committee (if appropriate)
16. Discussion on draft Test Guidelines (Subgroups)
17. Recommendations on draft Test Guidelines
18. Date and place of the next session
19. Future program
20. Adoption of the Report of the session (if time permits)
21. Closing of the session

Thirty-eighth session of the Technical Working Party on Automation and Computer Programs (TWC)

58. The TWC held its thirty-eighth session, hosted by the United States of America and organized by electronic means, from September 21 to 23, 2020. In the absence of Mr. Christophe Chevalier (France), Chairperson of the TWC, the session was opened by Mr. Nik Hulse (Australia), Chairperson of the TC and the session was chaired by Ms. Beate Rucker (Germany), Vice-Chairperson of the TC. The report of the session is provided in document TWC/38/11 "Report".

59. The session was attended by 44 participants representing 19 members of the Union, one observer State and one observer organization.

60. The TWC was welcomed by Ms. Ruihong Guo, Deputy Administrator, AMS, Science & Technology Program, United States Department of Agriculture (USDA) and received a presentation on Plant Variety Protection in the United States of America from Mr. Jeffery Haynes, Commissioner, Plant Variety Protection Office, USDA.

61. The TWC adopted the agenda as reproduced in document TWC/38/1 Rev.. The documents were considered on the basis of the written comments received in advance to the session.

62. The TWC considered documents TWP/4/10 and TWC/38/5 on international cooperation in examination. The TWC agreed that the information provided in document TWP/4/10 did not provide sufficient information to explain the situations when each method would and would not be suitable. The TWC agreed there were complex circumstances influencing the choice of method to be used for converting observations into notes and agreed to propose that the development of guidance be discontinued.

63. The TWC considered documents TWP/4/11 and TWC/38/6 on the Combined Over Years Uniformity Criterion (COYU). The TWC agreed that document TGP/8 should include two sections on the COYU criterion: one for the superseded version (moving average); and another for the improved method (splines). The TWC agreed that both sections were required for providing guidance to users of the different versions of the method.

64. The TWC agreed amendments to the draft guidance in Annex I to document TWC/38/6 as presented in paragraph 22 and 23 of document TWC/38/11 "Report". The TWC agreed that, once incorporated the amendments, the draft guidance should be proposed to the TC for inclusion in a future revision of document TGP/8.

65. The TWC received a presentation on "A statistical analysis software DUSCEL 2.0" from an expert from China, a copy of which is provided in document TWC/38/9. The TWC noted the developments on the software and that a user's manual would be prepared. The TWC agreed that interested experts should contact China for a demonstration session. The TWC noted the offer from China for the future inclusion of software DUSCEL 2.0 in document UPOV/INF/16 "Exchangeable software."

66. The TWC considered document TWC/38/8 Rev. "A common data set for comparison of software for COYD and COYU". The TWC thanked the experts from the United Kingdom for providing a common data set to allow comparisons of software for both COYD and COYU, as provided in an Excel file on the TWC/38 website. The TWC agreed to invite participants to carry out COYD and COYU tests using the three-years' data provided by the United Kingdom with probability levels of 0.01 for COYD and 0.001 for COYU (or 0.003 in case of the new version of COYU). The TWC noted the expressions of interest to participate in the comparison of software by the experts from China, France, Kenya and the United Kingdom. The TWC agreed to invite the expert from France to coordinate the comparison of software and report to the TWC, at its thirty-ninth session.

67. The TWC considered document TWP/4/12 "Organization of work of the TWC and BMT". The TWC agreed that the merger of the TWC and BMT would be an opportunity to address the topics of common interest

to both groups. The TWC noted the range of elements covered in the draft terms of reference and agreed to caution against the reduction of depth in technical discussions. The TWC agreed that the new body should maintain the level of relevance on discussions to avoid reducing the interest for experts to participate. The TWC agreed that new ways of conducting meetings could be considered to facilitate attendance by experts from different disciplines. This might incorporate the possibility to participate by remote means and creating working groups for specific topics. The TWC agreed to propose a regular review of the creation of a single body to encompass the work of the TWC and BMT to address any issues accruing from the merger.

68. At the invitation of the United States of America, the TWC agreed to hold its thirty-ninth session in Alexandria, Virginia, jointly with the BMT, during the week of September 20, 2021.

69. The TWC 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) Report on developments within UPOV (oral report by the Office of the Union)
4. Tools and methods for DUS examination (documents invited)
 - (a) Comparison of results obtained for COYD and COYU procedures using different software (document to be prepared by France)
 - (b) Development of software for the improved COYU method (splines) (document to be prepared by the United Kingdom)
5. Phenotyping and image analysis (documents invited)
6. Consideration of genotype by environment interaction and its impact in DUS testing (document to be prepared by Finland and Italy and documents invited)
7. Development of guidance and information materials (documents to be prepared by the Office of the Union)
8. Exchange and use of software and equipment (documents invited)
9. Information and databases (documents invited)
 - (a) UPOV information databases (document to be prepared by the Office of the Union)
 - (b) Variety description databases (document to be prepared by the Office of the Union and documents invited)
 - (c) UPOV PRISMA (document to be prepared by the Office of the Union)
10. Molecular Techniques and bioinformatics (document to be prepared by the Office of the Union and documents invited)
11. Date and place of the next session
12. Future program
13. Adoption of the Report on the session (if time permits)
14. Closing of the session

Nineteenth session of The Working Group on Biochemical and Molecular Techniques and DNA-Profiling in Particular (BMT)

Report by Mr. Nik Hulse (Australia), Chairperson of the BMT

70. The BMT held its nineteenth session, hosted by the United States of America and organized by electronic means, from September 23 to 25, 2020. The session was opened by Mr. Nik Hulse (Australia), Chairperson of the BMT. The BMT was co-chaired by Ms. Beate Rücker (Germany), Vice-Chairperson of the Technical Committee. The report of the session is provided in document BMT/15 Corr. "Report".

71. The session was attended by 119 participants from 26 members of the Union, two observer States and nine observer organizations.

72. The BMT was welcomed by Ms. Ruihong Guo, Deputy Administrator, AMS, Science & Technology Program, United States Department of Agriculture (USDA) and received a presentation on Plant Variety Protection in the United States of America from Mr. Jeffery Haynes, Commissioner, Plant Variety Protection Office, USDA. A copy of the presentation is provided in Annex II to this report.

73. The BMT adopted the agenda as reproduced in document BMT/19/1 Rev.. The documents were considered on the basis of the written comments received in advance to the session.

74. The BMT received the following presentations on the use of molecular techniques in relation to DUS examination:

- “vmDUS: Value-molecular linked distinctness determination”
- “CPVO report on IMODDUS: Update on R&D projects”
- “Developing a strategy to apply SNP molecular markers in the framework of winter oilseed rape DUS testing”
- “French strategy for access to molecular data and proof of concept for combining phenotype and genotype”

75. The BMT considered documents BMT/19/3 Rev. and UPOV/INF/17/2 Draft 3 and agreed that the draft guidance presented in Annex III of the Report should be proposed to the Technical Committee as the basis for a future revision of document UPOV/INF/17, subject to incorporating the amendments indicated in the text.

76. The BMT received the following presentations in relation to confidentiality, ownership and access to molecular data:

- “Access to reference material and molecular data from CPVO Examination Offices”
- “Survey on confidentiality and ownership of molecular information”

77. The BMT considered document BMT/19/10 and noted that the TWPs and BMT, at their sessions in 2019, had formed discussion groups to allow participants to exchange information on their work on biochemical and molecular techniques and explore areas for cooperation. The BMT noted the outcomes of discussions at the TWPs and BMT on facilitating cooperation in relation to the use of molecular techniques. The participants at the nineteenth session of the BMT were invited to report on their work on biochemical and molecular techniques and to explore areas for cooperation.

78. The BMT considered document BMT/19/7 and agreed with the TWC that the merger of the TWC and BMT would be an opportunity to address the topics of common interest to both groups. The BMT noted the range of elements covered in the draft terms of reference and agreed with the TWC to caution against the reduction of depth in technical discussions. The BMT agreed with the TWC that the new body should maintain the level of relevance on discussions to avoid reducing the interest for experts to participate. The BMT agreed with the TWC that new ways of conducting meetings could be considered to facilitate attendance by experts from different disciplines. This might incorporate the possibility to participate by remote means and creating working groups for specific topics. The BMT agreed that the frequency of the meetings should be a consideration. The BMT agreed with the TWC to propose a regular review of the creation of a single body to encompass the work of the TWC and BMT to address any issues accruing from the merger.

79. The BMT considered documents BMT/19/3 Rev. “Review of document UPOV/INF/17 “Guidelines for DNA-Profiling: Molecular Marker Selection and Database Construction” and UPOV/INF/17/2 Draft 3. The BMT agreed that the draft guidance presented in Annex III to document BMT/19/15 “Report” should be proposed to the Technical Committee as the basis for a future revision of document UPOV/INF/17, subject to incorporating the amendments indicated in the text.

80. At the invitation of the United States of America, the BMT agreed to hold its twentieth session in Alexandria, Virginia, jointly with the TWC, during the week of September 20, 2021.

81. During its twentieth session, the BMT planned to discuss the following items:

1. Opening of the session
2. Adoption of the agenda
3. Reports on developments in UPOV concerning biochemical and molecular techniques (document to be prepared by the Office of the Union)
4. Short presentations on new developments in biochemical and molecular techniques by DUS experts, biochemical and molecular specialists, plant breeders and relevant international organizations (reports by participants)
5. Report of work on molecular techniques in relation to DUS examination (papers invited)
6. Variety description databases including databases containing molecular data (papers invited)
7. Methods for analysis of molecular data, management of databases and exchange of data and material (papers invited)

8. The use of molecular techniques in examining essential derivation² (papers invited)
9. The use of molecular techniques in variety identification* (papers invited)
10. Cooperation between international organizations (document to be prepared by the Office of the Union)
11. Confidentiality, ownership and access to molecular data, including model agreement template* (papers invited)
12. Session to facilitate cooperation
13. Date and place of next session
14. Future program
15. Report of the session (if time permits)
16. Closing of the session

[Annex III follows]

² Breeders' Day

AMENDMENTS TO THE DRAFT TEST GUIDELINES

Test Guidelines adopted by correspondence*Revisions*

Triticale (x <i>Triticosecale</i> Witt.)	TG/121/4(proj.3)	Mr. Tanvir Hossain (AU)	TWA	
	No. of chars.: 24 No. of (*) chars.: 9	(Interested experts: AR, AT, BR, CA, CZ, DE, DK, ES, FR, GB, HU, IT, KE, KR, NL, NZ, PL, QZ, RO, SK, CLI, Euroseeds, ISF)		

The TC-EDC, at its meeting held in Geneva, on March 24, 2020, considered document TG/121/4(proj.3) and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Triticale be circulated to the TC for adoption by correspondence.

2.3	last paragraph to read "The ears should ..."
3.1.2	to be deleted (only applicable for perennial crops)
4.2.8	"... exception of characteristics 1 and 2"
Char. 12	to read "Stem: density of hairs on neck"
Char. 18	to read "Lower glume: hairs on external surface"

Ginseng (<i>Panax ginseng</i> C.A. Mey)	TG/224/2(proj.4)	Mr. Wonsig Lee/ Mr. Kwanghong Lee (KR)	TWA	
	No. of chars.: 29 No. of (*) chars.: 16	(Interested experts: JP, ISF)		

The TC-EDC, at its meeting held in Geneva, on March 24, 2020, considered document TG/224/2(proj.4) and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Ginseng be circulated to the TC for adoption by correspondence.

Table of Chars.	to sort characteristics by growth stages
Chars. 5, 8	to have scale of notes from "absent or very light" to "very dark" (intensity)
Char. 6	state 2 to read "on lower and upper part only"
Char. 9	to be moved before Characteristic 7
Chars. 19 to 22	to be moved after char. 1 according to growth stage
Char. 22	to read "Time of berry maturity"
8.1 (a)	to delete "among stems"
8.1 (c)	"... compound leaves."
Ad. 4	to read "Measurements should be made on the broadest part of the stem, usually 2-3 cm from soil."
Ad. 11	to remove reference to "b" and "c". They are not used.
Ad. 19	to read "Beginning of flowering is reached when ..."
Ad. 22	to read "Time of berry maturity is reached when ..."
Ad. 26	to remove "c = Lateral root". It is not used anywhere
8.3	to read "8.3 Growth stages"
9.	to remove the space before "C" in the reference to "Victoria B.C."

Portulaca (<i>Portulaca grandiflora</i> Hook.; <i>Portulaca oleracea</i> L.; <i>Portulaca umbraticola</i> Kunth)	TG/242/4(proj.3)	Ms. Andrea Menne (DE)	TWO	
	No. of chars.: 25 No. of (*) chars.: 14	(Interested experts: JP, MX, NL, QZ)		

The TC-EDC, at its meeting held in Geneva, in October 2019, considered document TG/242/4(proj.2) and made the recommendations presented in the table below.

Char. 12	to delete (b)
#Chars. 9, 14, 23	to add example varieties for Characteristics 9, 14 and 23) (see document TGP/7 (GN 28)) (for Characteristics 9 and 14 the ones illustrating the states in Ad. 9 and 14 could be used) <i>provided by Leading Expert</i>
Char. 24	to delete "Only varieties with ..."
8.1 (a)	to read "Observations should be made on the upper side of fully developed leaves from the middle part of a plant."
8.1 (b)	to read "Observations should be made on the inner side of a fully open flower."
8.1 (c)	to read "Observations should be made on the inner side. Unless otherwise indicated observations on the petal of double flowers should be made on the outermost whorl of petals."
Ad. 19	"In varieties with ..."
TQ	to add 1.4.1 and 1.4.2 with empty boxes (e.g. to indicate interspecific hybrids)

The TC-EDC agreed there were editorial clarifications required (indicated above by "#") on the draft Test Guidelines for Portulaca (document TG/242/4(proj.2)) and agreed to reconsider the draft Test Guidelines at its meeting to be held in March 2020.

The items in the list above have been implemented in document TG/242/4(proj.3).

The TC-EDC, at its meeting held in Geneva, on March 24, 2020, considered document TG/224/2(proj.3) and the editorial clarifications previously required (indicated above by "#"). The TC-EDC agreed with the information provided by the Leading Expert and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Portulaca be circulated to the TC for adoption by correspondence.

4.2.4	"... for seed-propagated varieties should ..."
Char. 25	to delete "Only varieties with ..." (as for Char. 24)
Ad. 25	to add full stop after "See Ad. 24"

Test Guidelines for adoption by the Technical Committee by correspondence after its fifty-sixth session

General

6.2.2	to update wording (following adoption of TGP/7/8)
Table of Chars.	to display full scale of notes for all characteristics (following adoption of TGP/7/8)

Partial revisions

TC/56/16 Partial Revision of the Test Guidelines for Calibrachoa

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TC/56/16 and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the partial revision of the Test Guidelines for Calibrachoa be circulated to the TC for adoption by correspondence.

Char. 16	to update Chapters 5.3, 8.2 and TQ 5 accordingly
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TC/56/17 Partial Revision of the Test Guidelines for Chrysanthemum

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TC/56/17 and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the partial revision of the Test Guidelines for Chrysanthemum be circulated to the TC for adoption by correspondence.

1.	to delete second sentence "They are primarily adapted to varieties currently, ..."
TQ 1.3	to read "1.3 Species or interspecific hybrid (please specify)"

TC/56/18 Partial Revision of the Test Guidelines for Common Sea Buckthorn

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TC/56/18 and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the partial revision of the Test Guidelines for Common Sea Buckthorn be circulated to the TC for adoption by correspondence.


Ad. 21	- first sentence to read "For female plants...(the stigmas emerge from the leaf axils)." - second sentence to read "For male plants.... when anthers release pollen."
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New Test Guidelines

Brown Mustard (<i>Brassica juncea</i> (L.) Czern.)	TG/BRASS_JUN(PROJ.8), TC/56/19	Mr. Takayuki Nishikawa (JP)	TWV	*
	No. of chars.: 34 No. of (*) chars.: 11	(Interested experts: TWA, CA, CZ, DE, FR, KR, NL, PL, QZ, ZA, CropLife, ESA, ISF)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered documents TG/BRASS_JUN(proj.8) and TC/56/19 and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Brown Mustard be circulated to the TC for adoption by correspondence.

4.2.4	to check whether to read "For the assessment of uniformity of self-pollinated varieties, ..."
Char./Ad. 26	to have the following order of states and illustrations (see TG/BRASS_JUN(proj.8) for original size of illustrations)
	 <p style="text-align: center;">1 2 3 4</p> <p style="text-align: center;">narrow conic broad conic rounded branched</p>
Ad. 3	to read "Observations should be made...."
Ad. 8	to reallocate letters to corresponded to order of characteristics (e.g. a=8, b=9, etc.)
Ads. 15, 30	to replace "extention" with "extent"
Ad. 34	insert comma after "Alternatively"

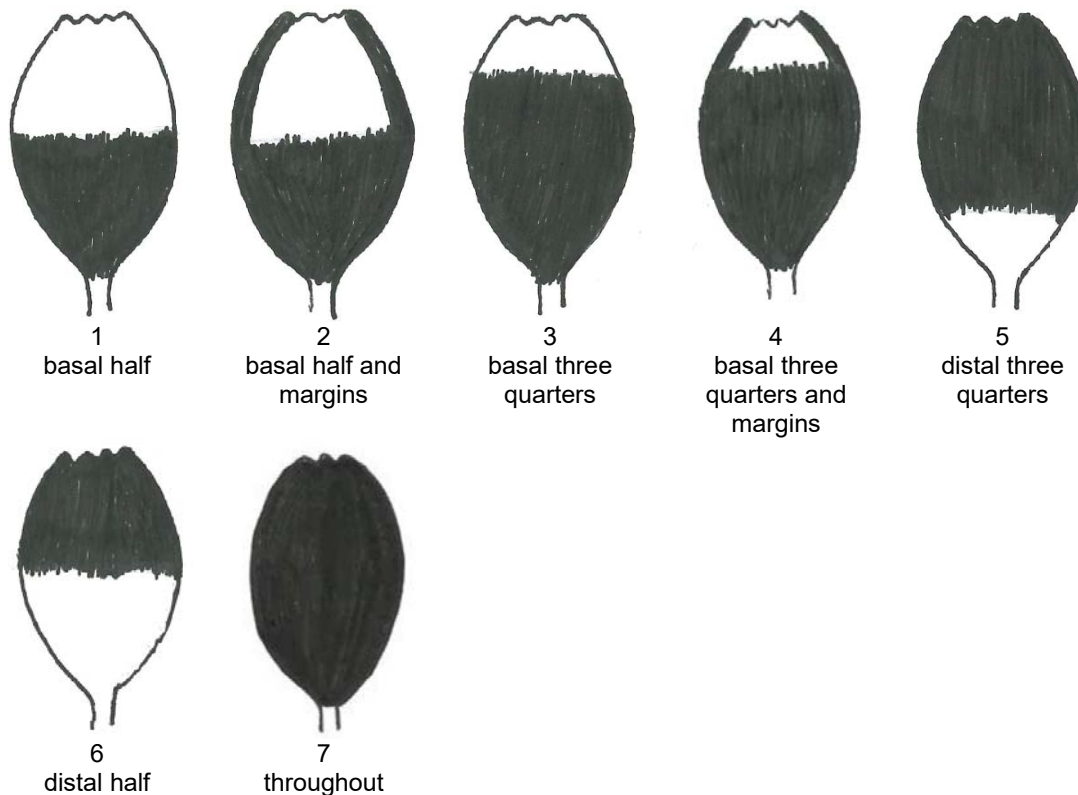
Coreopsis (<i>Coreopsis</i> L.)	TG/COREO(proj.3), TC/56/20	Mr. Peter Baker (GB)	TWO	*
	No. of chars.: 44 No. of (*) chars.: 34	(Interested experts: AU, CA, DE, FR, JP, KR, MX, NZ, QZ)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered documents TG/COREO(proj.3) and TC/56/20 and made the recommendations presented in the table below.

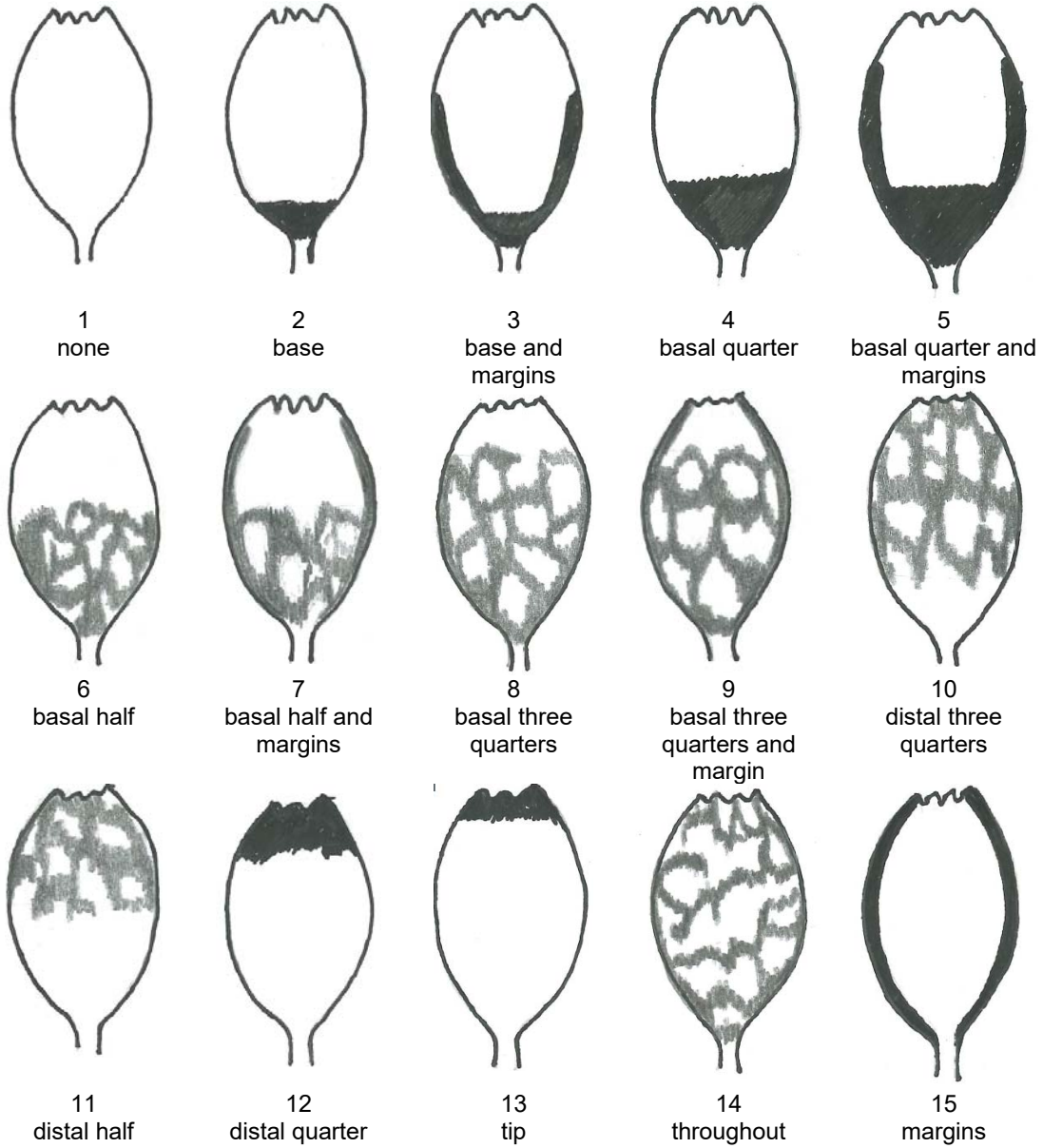
The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Coreopsis be circulated to the TC for adoption by correspondence.

#Chars. 1, 8, 17, 20, 24, 27, 39, 40, 41, 42	to add example varieties (see document TGP/7 (GN 28)) <i>provided by Leading; see Annex to document TC/56/20</i> TWO: - agreed - Char. 17: PRO358 to read PRO538
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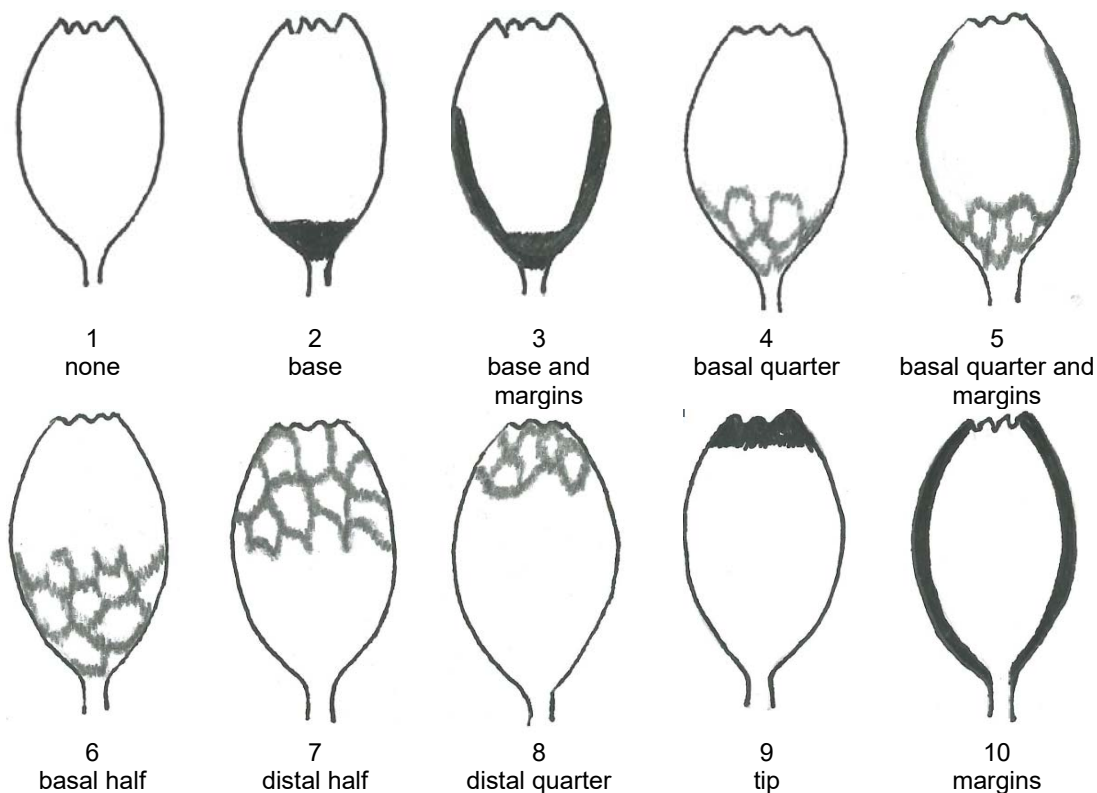
#Chars. 6 to 11 and 15 to 17	According to Ad. 5, all varieties may have both types of leaves. Clarification necessary whether all characteristics should be described for varieties with note 1, 2 and 3 in char. 5 <i>Leading Expert: To have an additional explanation in Chapter 8.1 labelled (c) to apply to Characteristics 6 to 11 and 15 to 17, to read: "Observations should only be made in relation to the predominant leaf type according to Characteristic 5. Where no predominance is observed for Characteristic 5, i.e. both simple and divided leaf type occur in similar amounts, observations should be made on both types of leaf." TWO agreed</i>
Chars. 12 to 14	to be moved after char. 17 <i>TWO agreed</i>
Char. 30	"throughout" should be note 15 <i>TWO agreed</i>
Char. 32	to be moved before char. 30 <i>TWO: to keep it as it is as it follows standard order of characteristics</i>
8.1 (d)	first 8.1(d) to be relabeled "(b)" (type-o) <i>TWO agreed</i>
8.1 (e)	to be replaced by the standard wording (see document TGP/14) <i>TWO agreed</i>
Ad. 5	to read "Some varieties have both types of leaves. The predominant leaf type should be assessed. The state ..." <i>TWO agreed</i>
Ad. 19	to be deleted (see VG) <i>TWO agreed</i>
Ad. 29	Drawings to be improved. Main color should appear solid to prevent confusion with drawings for char. 30 and 32. <i>TWO agreed</i>



#Ad. 30	<p>- to add explanation clarifying how secondary color can occupy more than 50% of surface (to check whether to read "If the secondary color is not solid, it may be distributed on more than half of the ray floret and the total area is still less than the main color.")</p> <p>- Drawings to be improved. Secondary color should <u>not</u> appear solid for state 6 to 11 and 14 to prevent confusion with drawings for char. 30.</p> <p><i>Leading Expert: agreed with proposed wording for Ad. 30 and provided new illustrations</i></p> <p><i>TWO agreed</i></p>
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#Ad. 33	<p>- to check whether to read "If the tertiary color is not solid, it may be distributed in up to half of the ray floret and the total area is still less than the secondary color." - Drawings to be improved. Secondary color should <u>not</u> appear solid for state 4 to 8 to prevent confusion with drawings for char. 30 and 32. <i>Leading Expert: agreed with proposed wording for Ad. 33 and provided new illustrations TWO agreed</i></p>
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Physic Nut (<i>Jatropha curcas</i> L.)	TG/JATRO_CUR(PROJ.4)	Mr. Alejandro Barrientos-Priego (MX)	TWF	*
	No. of chars.: 30 No. of (*) chars.: 10	(Interested experts: BR, IL, QZ)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TG/JATRO_CUR(proj.4) and made the recommendations presented in the table below.

The TC-EDC agreed there were editorial clarifications required (indicated below by "#") on the draft Test Guidelines for Physic Nut and agreed to reconsider the draft Test Guidelines at its meeting to be held in March 2021.

Cover page	- French main common name to read "Jatropha" - to add "Pourghère", "Noix des Barbades" as alternative French names
Header, p. 2 to 7	remove additional space to read "...Nut, 2020..."
#4.2.2	"These Test Guidelines have been developed for the examination of vegetatively and cross-pollinated seed-propagated varieties."
#Char. 1	to add explanation on the stage of development of the leaf blade
Char. 3	- to be moved before characteristic 1 - state 2 to read "semi-upright"

#Char. 6	- to check whether to have states “rounded” and “straight” 2 - to check whether to crop pictures to only show base of leaf - to check whether to add explanation “Observations should be made on the base of the cordate leaf.”												
Char. 7	to read “Leaf blade: serration on margin”												
#Char./Ad. 9	to provide better illustration for state 3 or add an explanation; alternatively, the number of lobes could become the states of the characteristic												
Char. 12	- to read “Plant: sex” - state 2 to read “female”												
Char.19	to be moved after characteristic 22												
Char. 24	to be moved after characteristic 27												
Char. 24/Ad. 24	- to rotate illustrations in order to have base at bottom: - to have states elliptic (1), oblong (2), obovate (3) and have grid as below												
	<table border="1"> <thead> <tr> <th></th> <th colspan="2">← broadest part →</th> </tr> <tr> <th>relative width</th> <th>at middle</th> <th>above middle</th> </tr> </thead> <tbody> <tr> <td>narrow</td> <td>  2 oblong </td> <td></td> </tr> <tr> <td>medium</td> <td>  1 elliptic </td> <td>  3 obovate </td> </tr> </tbody> </table>		← broadest part →		relative width	at middle	above middle	narrow	 2 oblong		medium	 1 elliptic	 3 obovate
	← broadest part →												
relative width	at middle	above middle											
narrow	 2 oblong												
medium	 1 elliptic	 3 obovate											
8.1	all explanations to read “Observations should be made...”												
8.1 (a)	to read “Observations on the leaf blade should be made on mature leaves taken from the middle third of the current’s season’s shoot.”												
8.1 (d)	“Observations should be made on fruits taken from the middle part of the fruiting area of the plant at the time of fruit ripening.”												
Ad. 25	to rotate illustration by 180 degrees (as in Ad. 24/ to have base at bottom)												

Pistachio (<i>Pistacia vera</i> L.)	TG/PISTA(PROJ.5)	Ms. Urszula Braun-Mlodecka (QZ)	TWF	*
	No. of chars.: 37 No. of (*) chars.: 17	(Interested experts: AU, ES, IT, KE, MX, ZA)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TG/PISTA(proj.5) and made the recommendations presented in the table below.

The TC-EDC agreed there were editorial clarifications required (indicated below by “#”) on the draft Test Guidelines for Pistachio and agreed to reconsider the draft Test Guidelines at its meeting to be held in March 2021.

1.2	to be deleted
3.1.1	to be deleted
3.1.2	- to combine both sentences into one single paragraph - to add a comma: “For female varieties, the minimum...”
3.1.3	to add a comma: “For male varieties, the minimum...”
#Char. 1	In 8.1 (d) and 8.1 (e), there is an indication of “hermaphrodite varieties”; however, this is not an option in Char 1. Should there be a Note 3 female and male? If there is a change here, what would be the number of growing cycles required for ‘hermaphrodite varieties’ (see 3.1.2 and 3.1.3)?
#Char. 3	- to check whether to be indicated as QN - to add illustrations (do standard illustrations from TGP/14 apply)
Char. 8	state 2 to read “6 to 10”
#Char. 15	to check example variety for state 2 (male variety for female inflorescence characteristic)
#Char. 24	- to change order of states to “ovate (1), narrow elliptic (2), broad elliptic (2)” - provide example variety for state 2 or add illustrations
#8.1 (d)	- to check whether to be deleted (is “fully grown” needed (see satisfactory crop in 3.1)?; for male plants, reference is made to the age of female or hermaphrodite trees) - to check whether to replace “full grown trees” with “mature trees”; other observations also to be done on fully grown trees, not just (d) and (e)
#8.1 (e)	to check whether to delete first sentence (same wording as (d), see comment on 8.1 (d))
8.1 (f)	to add indication of fruit to the illustration
Ads. 13, 14	to make all images the same size.
Ad. 17	- to delete comma before full stop at state 3 - replace “exercising” with “applying”
#Ad. 36	to check whether to read “... when 25% of flower buds are open”
Ad. 37	to read “The time of harvest maturity is reached when 50% of fruits are mature.”
TQ 1.2	to remove “Pistache”
TQ 1.3	to be deleted
TQ 7.3	- to add “7.3.1” to the paragraph relating to photographs - last paragraph to read “7.3.2 In the case of frost or chilling hour requirements for the correct development of plant material of the candidate variety in the DUS trial field, please specify.” (Font size to be reduced).”

Ranunculus (<i>Ranunculus</i> L.)	TG/RANUN(PROJ.4)	Mr. Satoshi Fujisako (JP)	TWO	*
	No. of chars.: 40 No. of (*) chars.: 21	(Interested experts: DE, DK, KR, QZ, CIOPORA)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TG/RANUN(proj.4) and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Ranunculus be circulated to the TC for adoption by correspondence.

5.3 (g)	to remove additional space between the words “secondary” and “color”?
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1.	to delete “and hybrids between these species.” and add UPOV code RANUN_ACO (Hybrids between <i>Ranunculus asiaticus</i> L. and <i>Ranunculus cortusifolius</i> Willd.)
Table of Chars.	to check capitalization of example varieties (abairesekui, abavesca, abizanagi, abperkons, LEMONTEMARI)
Chars. 2 to 11	to remove underlining
8.1 (a) to (d)	to read “Observations should be made...”
8.1 (b)	to add hyphen to “Semi-double”
8.1 (d)	to read “Observations should be made just before the anthers open.”
Ads. 1, 14	to read “Observations should be made...”
Ads. 2, 6	to read “Observations should be made on the predominant leaf type.”
Ad. 16	label “b” to read “Flower: height” (see Ad. 17; no characteristic for flower length)
Ad 24	to slightly reduce the shaded area (currently looks like covering more than 50%)

Revisions

Red Clover (<i>Trifolium pratense</i> L.)	TG/5/8(proj.5), TC/56/21	Mr. Donovan Sonnenberg (ZA)	TWA	*
	No. of chars.: 19 No. of (*) chars.: 11	(Interested experts: BR, CA, AR, AU, BR, CA, CZ, DE, DK, ES, FI, FR, GB, IT, JP, NZ, PL, QZ, RO, SK, TZ, UY, ZA, CLI, Euroseeds, ISF)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered documents TG/5/8(proj.5) and TC/56/21 and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Red Clover be circulated to the TC for adoption by correspondence.

3.3	to add ASW 4 (a) Stage of development for the assessment
3.4	to read “Each test should be designed to result in a total of at least...”
Char. 9	to read “Leaf: conspicuousness of marking”
Chars. 13 and 14	to read “middle leaflet”
#Ad. 8	- to check whether the timing of assessment can be explained more precisely (When has full expression occurred? When vegetation has stopped?) (check how this characteristic is explained in similar crops) <i>Leading Expert: proposed to read “The number of plants showing inflorescences should be recorded for each variety. To be assessed at one occasion on the whole trial when the development stagnates before vernalization.”</i>
Ad. 9	to read “The characteristic leaf marking refers to the conspicuousness of leaf marking.”
Ad. 12	to read “middle leaflet”
#Ad. 16	to check whether to read “Stem length should be measured from the base of plant to the base of terminal inflorescence.” (where is the end point of measurement?) <i>Leading Expert: agreed</i>
#Ad. 17	to improve wording by explaining where the tillering node is situated <i>Leading Expert: There is only <u>one</u> tillering node. Therefore it should be clear to say “<u>the</u> tillering node” and to read “Stem thickness should be measured 2 to 4 cm above the tillering node.”</i>
Ad. 17	to read “Stem thickness should be ...”
8.3	growth stages to read “Principal...” (not “principle”)

Rice (<i>Oryza sativa</i> L.)	TG/16/9(PROJ.5)	Mr. Kohei Imamura (JP)	TWA	*
	No. of chars.: 44 No. of (*) chars.: 22	(Interested experts: AR, AU, BR, CN, ES, FR, HU, IT, KE, KR, MX, QZ, TZ, US, UY, CLI, Euroseeds, ISF)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TG/16/9(proj.5) and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Rice be circulated to the TC for adoption by correspondence.

3.1.2	to be deleted
3.4.1	to replace “sowed” with “sown”.
3.4.2	to replace “plantlets” with “plants”
4.2.6 to 4.2.10	to read <p>“4.2.6 For the assessment of uniformity of lines, a population standard of 0.1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 1500 plants, 4 off-types are allowed. In the case of a sample size of 400 plants, 2 off-types are allowed.</p> <p>“4.2.7 For the assessment of uniformity in a sample size of 100 panicle rows, plants or parts, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 100 panicle rows, plants or parts of plants, 3 off-types are allowed. A panicle row is considered to be an off-type if there is more than one off-type plant within that panicle row.</p> <p>“4.2.8 For “A” characteristics, the assessment of uniformity can be done in 2 steps. In a first step, 20 panicle rows, plants or parts of plants are observed. If no off-types are observed, the variety is considered to be uniform. If more than 3 off-types are observed, the variety is considered not to be uniform. If 1 to 3 off-types are observed, an additional sample of 80 panicle rows, plants or parts of plants must be observed.</p> <p>“4.2.9 For the assessment of uniformity of hybrid varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 1500 plants, 22 off-types are allowed. In case of sample size of 400 plants, 8 off-types is allowed.”</p>
6.5	to add sample sizes A and B to legend (see 4.2.5)
Char. 9	to have states “absent or very sparse, sparse, medium, dense, very dense”
Char. 15	to have states “absent or sparse, medium, dense”
Char. 38	to read “1000 seed weight” (German: Tausendkorngewicht)
Ad. 1	- to remove spaces prior to “%” - to read: “...stained reddish purple”, “...stained reddish blue purple” and “...stained blue purple” - “l2” to read “l ₂ ” (with the 2 as subscript)
Ad. 17	to read “Measurements should be made from the base of the plant to the base of the panicle...”
Ad. 35	remove the two commas
Ad. 41	to read “<1.50” and “>2.50” (no spaces)
Ad. 43	- to read: “Observations should be made on unbroken grains. Place grains in a petri dish with 1.5% solution of KOH, keep still and at a temperature of around 25°C for approximately 24 hours.” - remove “milled” - to read “2 – weak: Only the margins of the grains are dissolved”
Ad. 44	to read: “popcorn”
8.3	to remove additional space to read: “32 2 nd node detectable”

Timothy (<i>Phleum pratense</i> L.; <i>Phleum nodosum</i> DC.)	TG/34/7(PROJ.3)	Mr. Lubomir Basta (SK)	TWA	*
	No. of chars.: 16 No. of (*) chars.: 7	(Interested experts: CA, CZ, DE, FI, FR, IT, JP, NL, NZ, QZ, Euroseeds, ISF)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TG/34/7(proj.3) and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Timothy be circulated to the TC for adoption by correspondence.

3.4.1, 3.4.2	to read "...result in a total of at least..."
5.3	to remove additional space to read: "Stem: length (characteristic 13)"
6.5	to format additional legend items in line with standard legend items
8.1 (c)	to be deleted (covered by growth stage)
Ad. 9	to read "...single plant data, a mean..."
Ad. 13	to read "Observation should be made on the longest stem and include the inflorescence."
8.3	to remove the space before "%"

Rye (<i>Secale cereale</i> L.)	TG/58/7(PROJ.3)	Ms. Beate Rücker (DE)	TWA	*
	No. of chars.: 21 No. of (*) chars.: 13	(Interested experts: AU, BR, CA, CZ, DK, ES, FI, FR, GB, IT, KR, NZ, PL, QZ, SK, ZA, CLI, Euroseeds, ISF)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TG/58/7(proj.3) and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Rye be circulated to the TC for adoption by correspondence.

4.2.2	"For varieties with other types of propagation, the ..." Add comma after propagation.
6.4	remove reference to winter/spring example varieties (covered by 6.5)
6.5	additional legend items to be formatted in line with standard legend items
3.3.3	B to read "drilled plots"
4.2.2	to delete "(excluding single crosses from inbred lines)"
Char. 13	- to read "Stem: density of hairs below ear" - to have states "absent or very sparse, sparse, medium, dense, very dense"
Ad. 8	"From this data, the average time..." Add comma after data.
TQ	to add ASW 13 (TQ for hybrid varieties)

Lagerstroemia (<i>Lagerstroemia</i> L.)	TG/95/4(PROJ.4)	Ms. Stéphanie Christien (FR)	TWO	*
	No. of chars.: 37 No. of (*) chars.: 29	(Interested experts: AU, JP, KR, QZ)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TG/95/4(proj.4) and made the recommendations presented in the table below.

The TC-EDC agreed there were editorial clarifications required (indicated below by "#") on the draft Test Guidelines for Lagerstroemia and agreed to reconsider the draft Test Guidelines at its meeting to be held in March 2021.

Cover page	"Crepe Myrtle" should be added as there are 2 alternative spellings for the English common name
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3.1.1	to be replaced with the 2 following paragraphs: “The minimum duration of tests should normally be two independent growing cycles. “The two independent growing cycles may be observed from a single planting, examined in two separate growing cycles.”
Char. 2	to check whether to be indicated as QN
Char. 4	to check whether to delete MG
Char. 5	to check whether to delete MG
Char. 7	state 2 to read “on margin”
#Char. 10	- to read “Leaf blade: undulation” - to check whether to reduce scale to 5 notes (According to Ad. 10 the difference between 1 and 5 does not seem to be sufficient for a difference of 9 states)
#Char. 17	to check whether to read “area of anthocyanin coloration”
Char. 20	state 1 to read “globose”, state 2 to read “conic”
Chars. 24, 25	to be moved after characteristic 28
Char. 29	to have notes 1 and 2
#Char. 33	to use the example varieties from char. 31 and 32 in 33 (at least for state “medium”)
Char. 34	to have states from “very light” to “very dark”
8.1 (f)	to replace “darkest” with “darker” (twice)
8.1 (g)	to read “Observations...”
Ad. 12	to delete second paragraph
#Ad. 20	- to replace photograph with drawing and add one for irregular shapes - add explanation that observations should be made on the maximum dimension of the main axis
Ad. 23	to be deleted
#Ad. 24	to add indication where to assess length
Ad. 28	to have only one photo for each state.
Ad. 37	to read “The time of beginning of flowering is reached when all plants have some open flowers on approximately 10% of thyrses.”
TQ 5.8 (ii)	to add option “Other (please indicate)”

Hydrangea (<i>Hydrangea</i> L.)	TG/133/5(PROJ.5)	Ms. Stéphanie Christien (FR)	TWO	*
	No. of chars.: 47 No. of (*) chars.: 26	(Interested experts : AU, CA, DE, JP, KR, MX, NZ, QZ, ZA, CIOFORA)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TG/133/5(proj.5) and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Hydrangea be circulated to the TC for adoption by correspondence.

Cover page	Please consider adding “Hydrangée” for the name in French
5.3 (k)	to add “with the following groups” after characteristic name
Char. 30	to read “Only varieties with Inflorescence: conspicuousness of fertile flowers: medium and strong: Inflorescence: arrangement of sterile flowers”
Char. 33	states 1 to 4 to read “3 and 4; only 4; 4 and 5; 5 and 6”
Char. 35 to 45	to use plural: “sepals”
Char. 37	- state 2 to read “weakly concave” - to add hyphen to “cross-section”
Char. 38	“Only varieties with Sterile flower: number of sepals: 3 and 4 to 4 and 5: Sterile flower: overlapping of sepals”
Char. 46	state “blue” to have note 6
8.1 (a), (b), (d)	to read “Observations should be made”

Chickpea (<i>Cicer arietinum</i> L.)	TG/143/4(PROJ.3)	Ms. Chrystelle Jouy (FR)	TWV	*
	No. of chars.: 20 No. of (*) chars.: 17	(Interested experts: TWA, AU, BR, CA, CN, DE, ES, IT, KR, QZ, TR, US, Euroseeds, ISF)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TG/143/4(proj.3) and made the recommendations presented in the table below.

The TC-EDC agreed that, subject to agreement by the Leading Expert on the recommendations provided, the draft Test Guidelines for Chickpea be circulated to the TC for adoption by correspondence.

4.2.2	to read "These Test Guidelines have been developed for the examination of self-pollinated varieties. ..."
4.2.3	to read "For the assessment of uniformity of self-pollinated varieties..."
Char. 1	to read "Plant: growth habit"
Chars. 15 to 19	to add explanation that observations should be made on dry mature seed (to become 8.1(c))
8.1 (b)	to read "Observations should be made when the green seeds are fully grown."
Ad. 6	to be deleted
Ad. 7	to be deleted
Ad. 13	to be deleted
Ad. 14	- to delete photograph - to read: "Percentage of pods with 2 seeds:"
Ad. 20	to read "The time of seed maturity is reached when plants and seeds are fully dry."

Tea (<i>Camellia sinensis</i> (L.) Kuntze)	TG/238/2(PROJ.4)	Mr. Simeon Kibet Kogo (KE)	TWA	*
	No. of chars.: 33 No. of (*) chars.: 19	(Interested experts: AR, BR, CN, KR, JP, TZ, US)		

The TC-EDC, at its meeting, organized by electronic means, from October 20 to 22, 2020, considered document TG/238/2(proj.4) and made the recommendations presented in the table below.

The TC-EDC agreed there were editorial clarifications required EDC (indicated below by "#") on the draft Test Guidelines for Tea and agreed to reconsider the draft Test Guidelines at its meeting to be held in March 2021.

3.3.2	to be deleted
Table of Chars.	to add explanations for "one and a bud stage" and "three and a bud stage".
Char. 1	to be moved after characteristic 3
Char. 7	state 5 to be moved to after state 1
Char. 8	to read "Young shoot: density of bud pubescence"
#Chars. 14 and 15	- to be moved after char. 22 - to check whether there is a difference between upper and lower side; if so, to add this information in an explanation
#Char. 16	to read "Leaf: length/width ratio" with states from low to high and check whether 3 or 5 notes and review to which states example varieties belong
Char. 17	to reverse order of states 1 and 3
Char. 23	to delete "full"
Char. 25	to read "Sepals: anthocyanin coloration on outer side" and reordered according to TGP/7 (same for characteristics 26, 29, 31, 32, 33)
Char. 26	to read "Sepals: pubescence of outer side"
Char. 29	to read "Ovary: density of pubescence"
Char. 31	to read "Style: length"
Char. 32	to read "Style: position of splitting" with stats 1 low, 2 medium, 3 high
Char. 33	to read "Stigma: position in relation to stamens"

8.1 (a)	to delete "as appropriate"
8.1 (c)	"Observations should be made..."
Ad. 6	to read "The time of beginning of "one and a bud" stage is reached when 30% of plants have shoots at the "one leaf and a bud" stage."
#Ad. 10	to delete wording and add explanation or illustration on where to observe

[End of Annex III and of document]