

Technical Working Party for Vegetables

TWV/55/16

**Fifty-Fifth Session
Antalya, Turkey, May 3 to 7, 2021****Original:** English
Date: May 7, 2021

REPORT*Adopted by the Technical Working Party for Vegetables (TWV)**Disclaimer: this document does not represent UPOV policies or guidance*Opening of the session

1. The Technical Working Party for Vegetables (TWV) held its fifty-fifth session, hosted by Turkey and organized by electronic means, from May 3 to 7, 2021. The list of participants is reproduced in Annex I to this report.
2. The session was opened by Ms. Marian van Leeuwen (Netherlands), Chairperson of the TWV, who welcomed the participants and thanked Turkey for hosting the TWV session.
3. The TWV was welcomed in a video message by Ms. Ayse Aysin Isikgece, Deputy Minister, Minister of Agriculture and Forestry. A copy of the welcoming remarks is provided in Annex II to this report.
4. The TWV received a video presentation on plant variety protection in Turkey.

Adoption of the agenda

5. The TWV adopted the agenda as presented in document TWV/55/1 Rev..

Short Reports on Developments in Plant Variety Protection*(a) Reports on developments in plant variety protection from members and observers*

6. The TWV noted the information on developments in plant variety protection from members and observers, provided in document TWV/55/3 Prov. The TWV noted that reports submitted to the Office of the Union after April 23, 2021 and until May 7, 2021, would be included in the finalized version of document TWV/55/3.

(b) Reports on developments within UPOV

7. The TWV received a presentation by the Office of the Union on latest developments within UPOV, a copy of which is provided in document TWV/55/2.

Development of guidance and information materials

8. The TWV considered document TWP/5/1.

Program for the development of relevant guidance and information materials

9. The TWV noted the program for the development of relevant guidance and information materials, as set out in document TWP/5/1, Annexes I and II.

(a) *Information documents*

Exchange and use of software and equipment

10. The TWV considered document TWP/5/5.

Document UPOV/INF/16 “Exchangeable Software”

11. The TWV noted that the Council, at its fifty-fourth ordinary session, had adopted document UPOV/INF/16/9 “Exchangeable software” on October 25, 2020 in a procedure by correspondence.

12. The TWV noted that the Office of the Union had issued on April 8, 2021, Circular E-21/030 inviting the designated persons of the members of the Union in the TC to provide or update information regarding the use of the software included in document UPOV/INF/16/10 Draft 1 “Exchangeable software” to the Office of the Union by May 7, 2021.

13. The TWV noted that the Office of the Union had received a proposal from China to include in document UPOV/INF/16 software “DUS Excel 2.0 - Data Analysis System for DUS Testing of Plant Varieties”. A copy of the user manual was provided in the Annex to document TWP5/5.

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

14. The TWV noted that the Council, at its fifty-fourth ordinary session, had adopted document UPOV/INF/22/7 “Software and equipment used by members of the Union” on October 25, 2020, in a procedure by correspondence.

15. The TWV noted that the Office of the Union had issued on April 8, 2021, Circular E-21/030 inviting the designated persons of members of the Union in the TC to provide or update information in document UPOV/INF/22/8 Draft 1 “Use of software and equipment” to the Office of the Union by May 7, 2021.

16. The TWV noted that the TC, at its fifty-seventh session, would be invited to consider whether to include any proposed software or equipment in document UPOV/INF/22/8 Draft 1, or whether to request further guidance from other relevant bodies.

Availability of documents UPOV/INF/16 “Exchangeable software” and UPOV/INF/22 “Software and equipment used by members of the Union” in a searchable form

17. The TWV noted that the information in documents UPOV/INF/16 and UPOV/INF/22 was available in a searchable format on the UPOV website (see: https://www.upov.int/it_resources/en/exchangeable_software.html).

(b) *TGP documents*

Revision of document TGP/5 “Experience and cooperation in DUS testing”, Section 6 “UPOV Report on Technical Examination and UPOV Variety Description”

18. The TWV considered document TWP/5/14.

Testing facility and location

19. The TWV agreed with the proposal to amend document TGP/5 Section 6, chapters “UPOV Report on Technical Examination” and “UPOV Variety Description”, as follows:

Chapter: UPOV Report on Technical Examination

13. Testing ~~station~~ facility(ies) and ~~place~~ location(s)

[...]

16. Date and document number of UPOV Test Guidelines

17. Date and/or document number of Reporting Authority’s test guidelines

Chapter: UPOV Variety Description

Item 11 to read “Testing ~~station~~ facility(ies) and ~~place~~ location(s)”

Additional information to be included in DUS test reports

20. The TWV considered the proposal to revise document TGP/5, Section 6 “UPOV Report on Technical Examination and UPOV Variety Description” to include additional information in DUS test reports. The TWV agreed that the proposed additional information was not useful for individual DUS test reports and presented practical difficulties for reporting authorities. The TWV agreed that the proposed additional information should be provided through other means, such dedicated information platforms and specified in cooperation agreements, where appropriate.

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

21. The TWV considered document TWP/5/10.

22. The TWV noted that the TC had 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 TWPs and the TC at their sessions in 2021.

23. The TWV agreed with the inclusion of the guidance on “Different forms that variety descriptions could take and the relevance of scale levels” in document TGP/8 Part I Section 2 “Data to be recorded” as new Section 2.5.

24. The TWV agreed to invite members of the Union to propose the inclusion of software incorporating their methods for converting observations into notes in document UPOV/INF/16 or document UPOV/INF/22, as appropriate, with a reference to the availability of such methods in document TGP/8 Part I, new Section 2.5

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

25. The TWV considered document TWP/5/11.

26. The TWV considered 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 TWP/5/11.

27. The TWV noted the report from the expert from the United Kingdom that DUS Centers in that country would evaluate the COYU Splines software on a range of crops in 2021 and that the COYU Splines method likely to be implemented from 2022. The TWV agreed to invite the United Kingdom to make a presentation at its fifty-sixth session to report on the evaluation of COYU Splines for any vegetable crops.

28. The TWV noted that evaluation versions of software for COYU Splines in both “R” and “DUSTNT” software would be released in 2021.

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

30. The TWV noted the invitation for members to participate in a test campaign of the COYU Splines software in 2021.

31. The TWV noted the request that the TWC would prepare a report of the results of the test campaign of the COYU Splines software for consideration by the TC, at its fifty-seventh session, in conjunction with the revision of document TGP/8.

Variety denominations

32. The TWV considered document TWP/5/6.

Possible revision of document UPOV/INF/12 “Explanatory Notes on Variety Denominations under the UPOV Convention”

33. The TWV noted the developments concerning a possible revision of document UPOV/INF/12 “Explanatory Notes on Variety Denominations under the UPOV Convention” at the CAJ, at its seventy-sixth session, by correspondence, and at its seventy-seventh session, as set out in document TWP/5/6, paragraphs 9 to 22.

Possible development of a UPOV similarity search tool for variety denomination purposes

34. The TWV noted the developments concerning a possible UPOV similarity search tool for variety denomination purposes, as set out in document TWP/5/6, paragraphs 28 to 36.

Indication of grouping characteristics in UPOV Test Guidelines (Table of characteristics and TQ 5)

35. The TWV received a presentation on “Grouping characteristics - Addition of the grouping information (G) in the table of characteristic and the technical questionnaire” by an expert from the European Union. A copy of the presentation is provided in document TWV/55/5.

36. The TWV agreed that the proposal to add the indication of grouping characteristics in the Test Guidelines (Table of characteristics and Technical Questionnaire) should be proposed to the Technical Committee for a possible future revision of document TGP/7 and inclusion in the Web based TG template.

Use of disease resistance characteristics

37. The TWV recalled discussions at its fifty-fourth session on the naming of the intermediate state of expression in disease resistance characteristics (see document TWV/54/9, paragraphs 81 to 83) and the conclusion from the group, as reproduced below:

“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”.

The TWV agreed 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.”

38. The TWV recalled the invitation for the experts from France and the Netherlands to present their current practice on using quantitative disease resistance characteristics (with intermediate state of expression) at its fifty-sixth session. The TWV noted the offer made by ISF to present the views of the vegetable seed breeding industry on the terminology used for disease resistance characteristics, at its fifty-sixth session.

39. The TWV agreed to propose that disease resistance characteristics should be presented in Section 5 of Technical Questionnaires with the addition of a state of expression “not tested”, when a characteristic was not indicated with an asterisk at the table of characteristics.

40. The TWV received a presentation on “Harmorescoll - Towards a European, harmonized collection of reference material for DUS resistance tests” by an expert from France. A copy of the presentation is provided in document TWV/55/6. The TWV agreed to invite the expert from France to report on further progress on the Harmorescoll project at its fifty-sixth session. The TWV noted the interest of members outside the European Union and agreed that further consideration should be given to accessing material from Harmorescoll.

41. The TWV agreed that access to reference materials and availability of control varieties was key when performing DUS tests of disease resistance characteristics. It further agreed that, when revising or drafting Test Guidelines, the availability of inoculum, example varieties and control varieties for disease resistance characteristics should be checked and updated.

Molecular Techniques

(a) *Developments in UPOV*

42. The TWV considered document TWP/5/7.

Developments at the nineteenth session of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular

43. The TWV noted the papers presented at the nineteenth session of the BMT, held in 2020, as set out in document TWP/5/7, paragraph 12.

44. The TWV noted that the BMT would hold its twentieth session jointly with the TWC, during the week of September 20, 2021.

45. The TWV noted the draft agenda for the BMT at its twentieth session, to be held in 2021, as set out in document TWP/5/7, paragraph 14.

Merger of the Working Group on Biochemical and Molecular Techniques and DNA-profiling in Particular (BMT) and the Technical Working Party on Automation and Computer Programs (TWC)

46. The TWV noted that the Council had established the Technical Working Party on Testing Methods and Techniques (TWM) encompassing the work of the TWC and BMT, to take effect from 2022.

47. The TWV noted the terms of reference for the TWM, as reproduced in document TWP/5/7, paragraph 17.

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

48. The TWV 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 Annex I to document TWP/5/7.

49. The TWV formed a discussion group to allow participants to exchange information on their work on biochemical and molecular techniques and explore areas for cooperation. Tomato, lettuce and pepper were discussed during the discussion group.

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

50. The TWV agreed with the revision of document UPOV/INF/17/1 on the basis of document UPOV/INF/17/2 Draft 5 and document TWP/5/7, Annex II.

Cooperation between international organizations

Inventory on the use of molecular marker techniques, by crop

51. The TWV 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, by December 15, 2020.

52. The TWV 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

53. The TWV noted that the TC, at its fifty-sixth session, had agreed that another joint OECD, UPOV, ISTA workshop on molecular techniques should be organized in the near future.

54. The TWV noted that the TC had agreed that a 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

55. The TWV noted that a draft joint document explaining the principal features of the systems of OECD, UPOV and ISTA would be presented for consideration by the TC at its fifty-seventh session.

(b) Presentation on the use of molecular techniques in DUS examination

56. The TWV received a presentation on “Confidentiality & Ownership of Molecular Information” by an expert on behalf of the African Seed Trade Association (AFSTA), the Asia and Pacific Seed Association (APSA), the International Community of Breeders of Asexually Reproduced Horticultural Plants (CIOPOA), CropLife International, Euroseeds, the International Seed Federation (ISF) and the Seed Association of the Americas (SAA). A copy of the presentation is provided in document TWV/55/4.

57. The TWV considered the proposal to revise document TGP/5, Section 3: Model Application Form, to include a request for confidentiality of molecular information of candidate varieties as follows:

“I/We request that molecular information pertaining to the variety remains confidential and exchange to another UPOV member or examination office is subject to approval by the applicant.”

58. The TWV noted that some authorities were creating databases with molecular information and using this information for selecting similar varieties and organizing the growing trial.

59. The TWV agreed to request information on whether the proposal could prevent the authority receiving an application from obtaining molecular information from the candidate variety for DUS purposes and whether the proposal was only aimed at preventing the receiving authority from passing on molecular information of the variety to other authorities without approval by the applicant.

60. The TWV noted that a further discussion with breeders will be needed to find a pragmatic solution to address the concerns of the breeders but to prevent unnecessary administrative burden for authorities.

61. The TWV noted that the same presentation would be scheduled for other TWPs at their sessions in 2021, which would allow further consideration of the proposal.

Cooperation in examination

62. The TWV considered document TWP/5/9.

63. The TWV noted that members of the Union have the possibility to update information on a person(s) to be contacted for matters concerning international cooperation in DUS examination by:

(i) updating information when invited to provide information for document TC/[xx]/4 “List of genera and species for which authorities have practical experience in the examination of distinctness, uniformity and stability”; and/or

(ii) notifying the Office of the Union by sending an e-mail to upov.mail@upov.int;

64. The TWV noted the development of a package of compatible IT tools to address the technical and related administrative concerns that prevent cooperation in DUS examination, as reported in document TWP/5/9, paragraphs 7 to 12.

65. The TWV noted the presentation made by the Office of the Union on the development of the “DUS Exchange Platform” and the “DUS Arrangement Tool”, that would be made available as an Addendum to document TWP/5/9.

66. The TWV noted the developments concerning the web-based TG template to enable the drafting individual authorities’ test guidelines (IATG) in different languages, as set out in document TWP/5/9, paragraph 13.

67. The TWV noted that the development of a platform for UPOV member databases containing variety description information would depend on UPOV members indicating which databases they would wish to share.

68. The TWV noted that machine translation technology opportunities would be pursued as a matter of priority to reduce translation costs for UPOV documents in UPOV languages and to make UPOV materials available in a wider range of languages, within available resources.

69. The TWV noted that the CAJ, at its seventy-eighth session would consider:

(i) the policy or legal barriers identified by the TC as preventing international cooperation in DUS examination and possible measures to address those barriers; and

(ii) proposals for developing guidance to encourage members of the Union, 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.

70. The TWV noted that the impact of the proposed plan would be assessed on the basis of the number of cooperation agreements reported by members of the Union, as presented in document C/[xx]/INF/5 "Cooperation in examination".

Information and databases

(a) UPOV information databases

71. The TWV considered document TWP/5/4.

GENIE database and UPOV code system

72. The TWV noted that 177 new UPOV codes had been created in 2020 and a total of 9,213 UPOV codes were included in the GENIE database.

Amending the UPOV code system to provide information on variety groups or types

73. The TWV agreed with the proposal for amending the UPOV code system to provide information on variety types, groups and denomination class, as set out in document UPOV/INF/23/1 Draft 2.

Proposals for amending UPOV codes

74. The TWV noted that the proposals for amending UPOV codes in document TWP/5/4 had been made on the basis that they would be made in conjunction with the adoption of document UPOV/INF/23/1.

75. The TWV noted that a timetable for implementing the proposed changes would be presented to the TC for approval at its fifty-seventh session.

*UPOV codes for *Beta vulgaris**

76. The TWV agreed with the proposal to amend the UPOV codes for *Beta vulgaris*, as reproduced in document TWP/5/4, Annex I.

77. The TWV agreed to append information on denomination classes to UPOV codes for *Beta vulgaris* subsp. *vulgaris* to establish the following groups:

- (i) Fodder beet group: Class 2.1 ("21FB"),
- (ii) Sugar beet group: Class 2.1 ("21SB"),
- (iii) Beetroot group: Class 2.2 ("22BR"),
- (iv) Leaf beet group: Class 2.2 ("22LB").

*UPOV codes for *Brassica oleracea**

78. The TWV agreed to amend the botanical names for *Brassica oleracea* in accordance with GRIN, as provided in document TWP/5/4, Appendix to Annex III.

79. The TWV agreed to append information to the UPOV code for *Brassica oleracea* L. var. *capitata* L. (BRASS_OLE_GC) to create variety groups or types for White and Red Cabbage, as follows:

- White Cabbage: 1W (e.g. BRASS_OLE_GC_1W)
- Red Cabbage: 2R (e.g. BRASS_OLE_GC_2R)

80. The TWV considered the proposal from the Netherlands to replace mentions to the botanical nomenclature of *Brassica oleracea* by the respective group type. For example, reference would be made to *Brassica oleracea* Curly kale Group instead of *B. vulgaris* L. var. *sabellica* (synonym of *B. vulgaris* L. convar. *acephala* (DC.) Alef. var. *sabellica* L.). The TWV agreed to invite the Netherlands to make a presentation at its fifty-sixth session to consider the proposal further.

UPOV codes “ZEAAA_MAY_SAC”, “ZEAAA_MAY_EVE” and “ZEAAA_MAY_MIC”

81. The TWV agreed with the proposal to delete the UPOV Codes ZEAAA_MAY_SAC, ZEAAA_MAY_EVE and ZEAAA_MAY_MIC, that would be covered by the UPOV code ZEAAA_MAY_MAY, as presented in document TWP/5/4, paragraph 71.

82. The TWV agreed to append information on variety types or groups to the UPOV code ZEAAA_MAY_MAY to establish the following variety types or groups:

- (a) Corn; Maize: “1MA” (e.g. ZEAAA_MAY_MAY_1MA);
- (b) Sweet Corn: “2SW” (e.g. ZEAAA_MAY_MAY_2SW);
- (c) Popcorn: “3PO” (e.g. ZEAAA_MAY_MAY_3PO).

83. The TWV agreed that the UPOV code for Durango teosinte should not be changed and should remain as ZEAAA_MAY_MEX.

UPOV codes for Cichorium intybus

84. The TWV considered the proposal from the Netherlands to append information to the UPOV code for *Cichorium intybus* to create the following variety groups: “leaf chicory group”; “industrial/large-rooted chicory group”; and “witloof chicory group”. The TWV recalled that, at its fifty-fourth session, it had noted that approximately 1200 varieties with UPOV code CICH_OINT in the PLUTO database could not be allocated with certainty to either one of the variety groups (see document TWV/54/9 “Report”, paragraph 66). The TWV agreed to invite the Netherlands to make a presentation on the proposal to create variety groups for *Cichorium intybus* for consideration at its fifty-sixth session.

TWP checking

85. The TWV noted the invitation to check the amendments, new UPOV codes or information, and UPOV codes used in the PLUTO database for the first time, as reproduced in document TWP/5/4, Annex IV and submit comments to the Office of the Union by December 31, 2021.

PLUTO database

86. The TWV noted the summary of data contributions from members of the Union to the PLUTO database from 2016 to 2020, as presented in document TWP/5/4, Annex V.

(b) *Variety description databases*

87. The TWV considered document TWP/5/2.

88. The TWV noted the reports made at the TWPs in 2020 on databases containing morphological and/or molecular data.

89. The TWV noted that members of the Union would be invited to report to the TWPs on work concerning the development of databases containing morphological and/or molecular data.

90. The TWV received a presentation on “Management of the reference collection – European Union Melon database” by an expert from France. A copy of the presentation is provided in document TWV/55/7.

91. The TWV received an oral report on the “Tomato database” from an expert from the Netherlands.

92. The TWV welcomed the work done in relation to the constitution of such databases for managing reference collections and invited participating authorities to share knowledge and information in order to build harmonized and reliable variety descriptions. It further welcomed the proposal made by an expert from the

Netherlands to make a presentation, at the fifty-sixth session of the TWV, on the collection of variety descriptions that would be publically available for further use.

(c) *UPOV PRISMA*

93. The TWV considered document TWP/5/3 and noted the developments concerning UPOV PRISMA.

94. The TWV noted the comment received by an expert from the United Kingdom that UPOV PRISMA was being used as their unique online system to submit application data in the United Kingdom for Plant Breeder's Rights and National Listing.

95. The TWV noted the comments received by representatives from ISF, CLI and Euroseeds on the usefulness of the tool and the importance to work towards a full integration with national/regional PVP systems. It further noted the work done with users' task force groups to identify where UPOV PRISMA could be improved to offer a reliable and robust service. The TWV noted that all participating authority in UPOV PRISMA were invited to check their PVP Office procedures made available via UPOV PRISMA to applicants, and report on any need for updates to the Office of the Union by June 30, 2021.

96. The TWV noted the report by a representative of ISF, on the ISF Seed Talks Exclusive web event on "Get to know UPOV PRISMA", held on March 17, 2021 on the World Seed Channel to promote the use of UPOV PRISMA by providing testimonials from active users. The representative of ISF encouraged TWV participants to watch the interview available at: <https://youtu.be/jBKL6z1N-i0>.

Increasing participation in the work of the TC and the TWPs

97. The TWV considered document TWP/5/12.

Participation at the TC and TWP meetings by electronic means

98. The TWV noted the information on participation via electronic means at the TWPs and TC in 2020.

99. The TWV noted the increased participation in the TWPs in 2020 and agreed that it would be relevant to continue investigating possibilities to further increase the number of participating members in the technical work of UPOV, such as increasing the number of opportunities for interaction and exchange of information.

100. The TWV noted the measures to improve virtual meetings held in the future, as set out in document TWP/5/12, paragraphs 14 to 20.

Proposals to encourage participation in TWPs and TC in the future

101. The TWV considered the possible measures for physical and virtual participation at TWP meetings, as set out in document TWP/5/12, paragraph 26, and agreed as follows:

Proposal (according to paragraph 26 in document TWP/5/12)	View of the TWV	Remarks
(a) 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.	supported	<ul style="list-style-type: none"> - The Leading Expert should report any pressing or cross-cutting issues at the TWP session. There should be opportunities during the TWP session to consider the key topics coming from discussions of Test Guidelines. - Further guidance should be provided on milestones to be achieved for subgroups discussing Test Guidelines, such as number of meetings and preferred timings (e.g. at end of interested experts' comments period). - Consideration should be given to whether the exact dates of the TG subgroup meetings should

		<p>be agreed in advance and/or restricted to particular periods (e.g. end of year and the month before TWP session). The deadline for circulating the first draft could be advanced.</p> <ul style="list-style-type: none"> - Sufficient time should be allocated to report on the conclusions from the subgroups to the TWP session. - To train Leading experts on how to run discussions effectively by electronic means. - Prior discussions might not be needed in the case of some partial revisions
(b) To organize virtual preparatory workshops prior to the TWPs. Those preparatory workshops to be recorded and be made available on the UPOV website.	supported	<ul style="list-style-type: none"> - The live session for questions and answers with panelists and the Office is useful and should be maintained. This part of the workshop should not be recorded or made available online.
(c) To offer the possibility to provide comments and questions on documents in advance of the meeting.	supported	<ul style="list-style-type: none"> - Deadlines to provide documents for discussion at TWP sessions should be mentioned in meeting report (e.g. eight weeks before meeting). - Documents should be posted online earlier in advance of the session to allow time for participants to consult internally.
(d) To organize electronic participation during the TWPs, using one of the following options, according to host facilities:	Supported	<ul style="list-style-type: none"> - Further consideration should be given to alternating one year of physical meeting with one year of virtual meeting.
(i) The host to provide the platform for virtual participants (with integrated audio/video on site), in addition to onsite participation in the meeting.	supported	<ul style="list-style-type: none"> - Might require additional planning and costs for the host
(ii) 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.	supported	<ul style="list-style-type: none"> - To be considered as an alternative
(e) 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:	supported	<ul style="list-style-type: none"> - Better to match geographical time-zone
(i) visits to DUS trials or related facilities;	supported	<ul style="list-style-type: none"> - Virtual field tour is an adequate solution when no other possibilities
(ii) pre-organized bilateral discussions/ meetings on cooperation;	supported	<ul style="list-style-type: none"> - On specific topics

(iii) sessions to facilitate discussion or exchange of knowledge for DUS examination.	supported	- Informal space is needed for discussion, especially for new members (UPOV family spirit)
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102. The TWV noted that organization of Test Guidelines subgroup discussions by electronic means prior to the TWP's would allow more time during physical meetings for other relevant issues, such as disease resistance characteristics.

103. The TWV noted the comment made by a representative of the breeding industry on the need to see the changes implemented in subsequent draft versions of Test Guidelines and the request that consideration be given to implementing such a functionality in the Web based TG template.

Experiences with new types and species

104. The TWV noted the comment made by the expert of Turkey on the increasing number of applications received for *Solanum torvum* Sw.. The TWV recalled the presentation received on the same species at its fifty-second session (see document TWV/52/14).

Revision of Test Guidelines

105. The TWV considered document TWP/5/13.

106. The TWV agreed not to consider the addition of asterisks where the proposed new TQ characteristics do not currently have an asterisk in the table of characteristics and to consider that matter further at the next full revision of the Test Guidelines concerned.

107. The TWV recalled guidance in document TGP/7 "Development of Test Guidelines" concerning the relationship between asterisks in the Test Guidelines and TQ characteristics, as reproduced below.

"GN 13 *Characteristics with specific functions*

1. *Asterisked characteristics (Chapter 7)*

1.1 *The General Introduction (Chapter 4.8: Table: Functional Categories of Characteristics) states that asterisked characteristics are "characteristics that are important for the international harmonization of variety descriptions." The criteria for selecting a characteristic as an asterisked characteristic are that:*

(a) *it must be a characteristic included in the Test Guidelines;*

(b) *it should always be examined for DUS and included in the variety description by all members of the Union except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate;*

(c) *it must be useful for the international harmonization of variety descriptions;*

(d) *particular care should be taken before selection of disease resistance characteristics.*

1.2 *It should be clarified that criterion (b) is worded to ensure that members of the Union which are not able to examine the characteristic do not use this as a reason to object to the characteristic being agreed as an asterisked characteristic. Thus, any characteristic which satisfies the criteria and, in particular, is useful for the international harmonization of variety descriptions should be selected as an asterisked characteristic, even if it cannot be examined for all varieties or by all members of the Union. The number of asterisked characteristics should, therefore, be determined by the characteristics which are required to achieve useful internationally harmonized variety descriptions.*

2. *Grouping characteristics (Chapter 5.3)*

2.1 *Selection*

The General Introduction (Chapter 4.8: Table: Functional Categories of Characteristics) explains that grouping characteristics are characteristics in which the documented states of expression, even where recorded at different locations, can be used either individually or in combination with other such

characteristics: to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness, and/or to organize the growing trial so that similar varieties are grouped together.

Thus, the General Introduction specifies that grouping characteristics:

1. *Must be:*
 - (a) *qualitative characteristics or,*
 - (b) *quantitative or pseudo qualitative characteristics which provide useful discrimination between the varieties of common knowledge from documented states of expression recorded at different locations.*
2. *Must be useful for:*
 - (a) *selecting varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness and/or,*
 - (b) *organizing the growing trial so that similar varieties are grouped together.*
3. *Should be:*
 - (a) *an asterisked characteristic and/or, (see also GN 13.4)*
 - (b) *included in the Technical Questionnaire or application form.*

The number of grouping characteristics is not fixed. If there are only a few characteristics which satisfy the criteria these are all likely to be selected as grouping characteristics. However, if there are many characteristics which fulfill the criteria these might not all be selected as grouping characteristics in the Test Guidelines. In the latter case, a selection of the most efficient characteristics for the uses set out in 2(a) and 2(b) might be made.

[...]

3. *Technical Questionnaire (TQ) characteristics (Chapter 10: TQ 5)*
 - 3.1 *The model Technical Questionnaire included in the Test Guidelines seeks information on specific characteristics of importance for distinguishing varieties.*
 - 3.2 *Characteristics to be included in the Technical Questionnaire should comprise:*
 - (a) *the grouping characteristics and*
 - (b) *the most discriminating characteristics,*

unless it is considered unrealistic to expect breeders to describe these characteristics.
 - 3.3 *In addition to the characteristics identified in Section 3.2, the Technical Questionnaire may also include characteristics that are agreed to be important for the management of the trial and the planning of observations.*
 - 3.4 *Where necessary, characteristics in the Test Guidelines can be simplified (e.g. color groups can be created rather than requesting an RHS Colour Chart reference) for inclusion in the Technical Questionnaire (TQ), if this would be of assistance for the breeder completing the TQ. Furthermore, the characteristics contained in the Test Guidelines can be formulated in a different way, if breeders would then be able to describe them more precisely and the information would be useful for performing the test. For example, the TQ for peach may request information on whether the variety is a “melting” or “non-melting” type, which although not a characteristic in the Table of Characteristics would provide information on the states of expression of certain characteristics included in the Table of Characteristics.*
 - 3.5 *In the case of quantitative characteristics for which an abbreviated scale is used in the Table of Characteristics (e.g. use of 3, 5, 7 for characteristics with notes 1-9), all states of expression should be presented in the Technical Questionnaire (e.g. notes 1, 2, etc. to 9).*
 - 3.6 *GN 13(4)(b) explains that “TQ characteristics selected from the Table of Characteristics should, in general, receive an asterisk in the Table of Characteristics”. Certain characteristics, particularly disease resistance characteristics, which are potentially useful as grouping characteristics might not be indicated with an asterisk in the Table of Characteristics. In the case of disease resistance characteristics, for example, there may be obstacles to the use of the characteristic for a number of members of the Union because of technical or quarantine requirements. Those same obstacles might also make it difficult for applicants to provide information on those characteristics if they were included in the Technical Questionnaire, Section 5 “Characteristics of the variety to be indicated”. Therefore, for such characteristics, information should be sought in Section 7 “Additional information which may help in the examination of the*

variety” of the Technical Questionnaire. The guidance on the presentation of the characteristics for Section 5 (see GN 13.3 & 13.4 above would also apply for the presentation of characteristics in Section 7.

4. Relationship between Asterisked, Grouping and TQ characteristics

The relationship between grouping, asterisked and TQ characteristics can be summarized as follows:

(a) Grouping characteristics selected from the Table of Characteristics should, in general, receive an asterisk in the Table of Characteristics and be included in the Technical Questionnaire.

(b) TQ characteristics selected from the Table of Characteristics should, in general, receive an asterisk in the Table of Characteristics and be used as grouping characteristics. TQ characteristics are not restricted to those characteristics used as grouping characteristics;

(c) Asterisked characteristics are not restricted to those characteristics selected as grouping or TQ characteristics.”

108. The TWV considered the proposals for partial revisions of the Test Guidelines for Maize, Carrot, Spinach, Cucumber, Melon, Squash, Watermelon and Tomato Rootstocks, as set out in document TWP/5/13, paragraph 17 and Annexes I to IX.

109. The TWV noted that no proposals were received for Onion and Shallot. The TWV noted a proposal from CPVO to add new characteristics to the Technical Questionnaire of the crops concerned, circulated shortly before the session. The TWV agreed that the proposal should be considered at its fifty-sixth session.

110. The TWV agreed the need for further discussions on the proposals for partial revisions of the crops listed in document TWP/5/13 at its fifty-sixth session. The TWV agreed to invite the experts that had submitted proposals (CZ, GB, IL, JP, MD, QZ, UA), and other interested experts (including representatives from the breeders) to organize a meeting by December 2021 to propose characteristics to be included in the Technical Questionnaires. Conclusions from discussions would be reported to the TWV at its fifty-sixth session, including any elements of document TGP/7 that might need to be revised.

111. The TWV noted the comments provided by the breeders’ organizations that characteristics in the TQ should reflect requirements for selecting similar varieties and organizing the growing trial. It further noted comments provided by the breeders’ organizations that international harmonization should consider the demands on applicants in terms of work and planning needed to provide data and PVP Offices to receive the required information.

Harmonization of Technical Questionnaires in the European Union

112. The TWV received a presentation on a “Project to harmonize Technical Questionnaires in the European Union” by an expert from the European Union. A copy of the presentation is provided in document TWV/55/8. The TWV agreed to invite the expert from the European Union to report further developments on the project for harmonization of TQs at its fifty-sixth session.

Guidance for drafters of Test Guidelines

113. The TWV considered document TWP/5/8.

114. The TWV noted that the web-based TG template and database of characteristics would be migrated to cloud servers by 2022, including an upgrade to new technologies in infrastructure and program to address issues reported by users and to enable use for drafting individual authorities’ test guidelines.

115. The TWV noted that the Office of the Union would issue a circular to identify requirements of UPOV members for the development of individual authorities’ test guidelines using the web-based TG template.

116. The TWV noted that training on the web-based TG template could be organized via electronic means upon experts’ request.

Discussions on draft Test Guidelines

Chinese cabbage (*Brassica. rapa L. subsp. pekinensis (Lour.) Kitam., hybrids between B. rapa L. Emend. Metzg. ssp. pekinensis (Lour.) Hanelt and B. rapa L. Emend. Metzg. ssp. chinensis (L.) Hanelt, hybrids between B. rapa L. Emend. Metzg. ssp. pekinensis (Lour.) Hanelt and B. rapa L. var. rapa (L.) Thell., Brassica xturicensis O. E. Schulz & Thell.) (Revision)*

117. The subgroup discussed document TG/105/5(proj.1), presented by Mr. Chan Woong Park (Republic of Korea), and agreed the following:

1.2	to read "Guidance on the use of Test Guidelines for species in the same genus, interspecific hybrids and intergeneric hybrids...."
4.1.1, 4.2.5	to be deleted
4.2.2	to read "These Test Guidelines have been developed for the examination of seed-propagated varieties including cross-pollinated and hybrid varieties..."
4.2.4, 4.2.5	to be deleted
4.2.6	to read "For the assessment of uniformity of single cross hybrid varieties ..."
5.3 (c)	to be deleted as grouping characteristic
Table of Chars.	- to add all states for QN characteristics with abbreviated scale (e.g. all notes from 1 to 9) - to remove wording in brackets from the name of the characteristic and move information as explanation to Chapter 8.2 (e.g. chars. 10, 12, 13, 15, 16...) - to check whether to add new characteristic: "Male sterility", VS/MS; QL; absent (1) (Emiko, Kasumi); present (9) (Hanko)
Char. 2	to add to Chapter 5.3 as grouping characteristic
Char. 4	to read "Outer leaf: width" and add explanation that observations should be made on the broadest part
Char. 9	- to add example varieties: 1 - EX King santosai 2 - Parkin, Sprinkin 4 - Red Dragon - to add example variety for state 3
Char. 10	- to read "Outer leaf: intensity of color" - to check whether to be combined with Char. 9 to have only existing color and intensity combinations
Char. 12	to have notes 1 to 5
Char. 15	- to delete example variety "Musu" and to check whether to replace with a different variety - state 2 to read "medium"
Char. 17	- to be indicated as QN and check wording of states of expression
Char. 21	to add example variety for state 2
Char. 23	to read "Head: width" and add explanation that observations should be made on the broadest part
Char. 25	- to check whether to be combined Characteristics 25 and 29 - to check example variety "Monument" (does not look open)
Char. 26	- to add example variety for state "white" - to delete "Bilko" from state 4
Char. 28	to check whether to be deleted or to add example varieties and/or illustrations
Char. 32	to read "Head: shape of apex of internal stem"
Char. 34	to be indicated as MG/VG
8.1	to have two times of observation only: (a) Observations should be made at the beginning of head formation, before harvest maturity. (for Chars. 1 to 21) (b) Observations should be made at harvest maturity. (for Chars. 22 to 34)
Ads. 1, 6, 25	to add missing illustrations
Ad.16	to add illustrations or delete
Ad. 27	to update according to Char. 27
Ad. 32	to check whether highlighting the shapes in the pictures for better visibility
9.	to be completed

TQ 5	- to add all states for QN characteristics with abbreviated scale (e.g. all notes from 1 to 9) - to add "Plant: height"
TQ 6	to add example

Egg plant (Solanum melongena L.) (Revision)

118. The subgroup discussed document TG/117/5(proj.2), presented by Ms. Céline Morineau (European Union), and agreed the following:

4.2.4	to be reviewed (specify to which characteristics this paragraphs applies)
Char. 1	- to add example variety for note 1: "Brigitte" - to add example variety for note 7: "Wase Shinkuro"
Char. 2	to add example variety for note 1: "Wase Shinkuro"
Char. 4	to add example variety for note 7: "Hakatanaga"
Char. 5	to delete "Konasu"
Char. 6	to add example variety for note 3: "Wase Shinkuro"
Char. 8	- to delete "Konasu" - to check wording (sinuation, lobing, incisions?)
Char. 9	to add example variety for note 3: "Wase Shinkuro"
Char. 12	to check whether to read "Inflorescence: truss" with states absent (1) and present (9) and to be indicated as QL
Char. 14	- to add example variety for note 1: "Masumi" - to check whether to add illustrations
Char. 15	to check whether to be deleted
Char. 16	to add the following example varieties: 3- Tasca 5- Flavine, Nigral 7- Melana 9- Senegal
Char. 17	- to have states from "very narrow" to "very broad" - to have the following example varieties: 1- White Egg, Valentina 3- Avan, Mistral 5- Tasca, Oriental 7- Bonica, Tudela 9- Birgah, Picola
Char. 18	- to have states from "very low" to "very high" - to have the following example varieties for states 5 to 9: 5- Flavine, Mistral 7- Indira 9- Valentina
Char. 19	to add example variety for note 7: "Scorpio"
Char. 20	- to check whether to reduce scale to have notes 1 to 5 - to add example variety for note 3: "Wase Shinkuro"
Char. 21	state 1 to read "indented"
Char. 23	- to check whether to reduce scale and have states and notes Absent or weak (1), medium (2) (with example variety "Hakatanaga"), strong (3) - to provide example varieties
Char. 24	- to be indicated as PQ - to delete "at harvest maturity"
Char. 25	- to read "Only for varieties with green or violet skin color: " - to check whether to add example varieties, indicating their color - to check whether to be combined with Char. 24 to only indicated existing color and intensity combinations - to check whether to split the characteristic
Char. 26	- to check whether to reduce scale to have notes 1 to 3 or 1 to 5 - to delete "Konasu"

Chars. 27 to 30	- to be reviewed (see document TGP/14 to find a better pattern term for “patches”; to check whether ground/over color or main/secondary color approach applies) - to check whether to create one single characteristic for all patterns (Fruit: pattern with states patches, stripes etc.) - in general, to reconsider the description of the color and pattern for the fruit: more than one color, area, distribution
Char. 34	- to check whether to reduce scale - to check correlation with Char. 25 and whether to delete - to check whether to combine with Char. 33
Char. 36	- to have the following example varieties: 1 – Blanche ronde à oeuf, Dourga, Mirval 3 – Abrivado 5 – Miléda 7 – Baluroi, Wase Shinkuro 9 – Birgah, Tasca - to check whether to add illustrations
Char. 37	to have the following example varieties: 1 - Freia, Lato 3 - Destan, Oscar 5 - Bonica, Rioca 7 - Bibo, Baluroi
Char. 38	- to change example varieties: 1 - Madalena, Birgah 2 - Baluroi, Angela 3 - Linda, Listada de Gandia - to check whether to have scale of notes 1 to 3 or 1 to 5
Char. 39	- to be indicated as QL - to indicate “white” and “green”
Char. 40	- to delete (e) - to check whether to be deleted
8.1	to delete “seedling”, “plant & stem”, ...
Ad. 2	to replace photos with drawings
Ad. 8	to check whether to read “Situacion of margin is composed by incisions of the leaf margin. It may form some lobing that never reach the midrib. It must be explained that it does not involve undulation of the margin.” (see also comment on Char. 8)
Ad. 16, Ad. 17	- to combine the explanations in the same drawing / picture. - to keep the sentence to observe the width
Ad. 18	to be deleted
Ad. 20	to delete reference to software to be used
Ad. 21	to be updated with photos
Ad. 25	to be reviewed (to delete illustrations for color, to check whether to move example varieties to Char. 25)
Ads. 27, 28, 29	to be reviewed (see comment on Chars. 27 to 30)
Ad. 34	to check whether to be deleted
Ad. 37	- wording to be coherent with Char. 37 - to check whether to read “... the number and the size of the spines.”
Ad. 38	to check whether to have only one illustration per state
TQ 7.3	- “Resistance to pests and diseases”: to be checked or completed - “Type of culture”: to add tick boxes for options “under glass” and “in the open” - to check whether to add ASW 16 (where a photograph of the variety is to be provided)

**Garden Rocket (Eruca sativa Mill.) (Partial revision)*

119. The subgroup discussed documents TG/245/1 and TWV/55/9, presented by Ms. Marian van Leeuwen (Netherlands), and agreed the following:

5.3	(a) to read “Leaf: anthocyanin coloration of veins (characteristic 4)” (add characteristic number)
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Kale (*Brassica oleracea L. var. costata DC.*; *B. oleracea L. var. medullosa Thell.*; *B. oleracea L. var. sabellica L.*; *B. oleracea L. var. viridis L.*; *B. oleracea L. var. palmifolia DC.*) (*Revision*)

120. The subgroup discussed document TG/90/7(proj.3), presented by Mr. Takayuki Nishikawa (Japan), and agreed the following:

2.2	to read "... in the form of seeds or seedlings"
4.2.4	to be deleted
Table of Chars.	- to add all states for QN characteristics with abbreviated scale (e.g. all notes from 1 to 9) - to delete example varieties "Ragged Jack" and "Starmaker" throughout the table of characteristics
Char. 4	to be indicated as MS/MG/VG
Char. 6	to add explanation to read "Observations should be made at widest point."
Char. 7	- to read "Young leaf: color" - to be moved after characteristic 27
Char. 10	to be deleted
Char. 12	to check whether to be deleted
Char. 17	- to read "Leaf blade: width/length ratio" - to have 9 states from "very low" to "very high" - to be indicated as QN
Char. 22	- to read " <u>Only for varieties with Leaf blade: undulation of margin: absent or very weak to weak:...</u> " - to be moved after Char. 25
Ad. 3	to add "Observations of the position of the growing point should be made in relation to the top of the plant."
Ad. 6	to read: "Observations should be made on fodder-types only, at widest point."
Ad. 7	to read "Observations should be made on immature leaves at the apex of the plant."
Ad. 17	to check whether to place illustrations in a grid
Ad. 18 and 19	to check whether to replace "extended leaf blade" with "unfolded leaf blade"
Ad. 20	state 6 to read "very strongly recurved"
Ad. 21	to check whether to add "Blistering is the difference in height of the surface of the leaf between the veins." (as in TG Tomato)
Ad. 24	- to correct spelling of note 4 "strong" and adjust notes (see Char. 24) - to improve illustrations (photos taken from same perspective)
Ad. 26	sentence on observation of petiole width to be moved to Ad. 27
Ad. 27	to add "Observations should be made at the base of petiole."
Ad. 28	to be improved
TQ 5	to add all states for QN characteristics with abbreviated scale (e.g. all notes from 1 to 9)
TQ 6	to add example

**Lettuce* (*Lactuca sativa L.*) (*Partial revision*)

121. The subgroup discussed documents TG/13/11 Rev. and TWV/55/11, presented by Ms. Amanda van Dijk (Netherlands), and agreed the following:

3.2	to distinguish <i>mo1²</i> genotypes from <i>mo1⁰</i> and <i>mo1¹</i> genotypes: editorial correction (italics)
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**Melon* (*Cucumis melo L.*) (*Partial revision*)

122. The subgroup discussed documents TG/104/5 Rev. 2 and TWV/55/14, presented by Ms. Chrystelle Jouy (France), and agreed the following:

Pictures	- Ad. 69 A, 11.2; Ad. 69 B, 11.2, Ad. 70.1 to 70.5, 10.3, 11.2: to add "Courtesy of GEVES – SNES in the framework of CPVO Harmores project" - Ad. 69 A, 6.: to add "Courtesy of Woldseed.org website"
General	Form: 1.2 (0, 1, 2) with a blank after the double dot. Same for Px: 1 etc.

Ads. 69 A, 69 B, 70, 71, 5.	to move reference to Chapter 9 "Literature"
Char. 69 A	to review example varieties
Char. 69 B	- to be reviewed - to check whether it is appropriate to create a QL characteristic based on state of expression "intermediate" - to check whether to read "Resistance to <i>Fusarium oxysporum</i> f. sp. <i>melonis</i> – Race 1.2 (Fom: 1.2)" with states susceptible (1) and intermediate resistance (3)
Ad. 69 A, 10.2	to read "4x10 ⁵ to 1x10 ⁶ sp / mL"
Ad. 69 A, 12.	to delete "with a higher concentration of inoculum" from the picture
Ad. 69 B	to adjust title according to characteristic name
Ad. 69 B, 9.2	to check whether indication of 3 replicates is necessary
Ad. 69 B, 10.1	to read "Scrape" instead of "scrap" and "darkness" instead of "obscurity"
Char. 70 and 71	to add the ISF codes of the diseases in the name of the characteristic (Px and Gc.)
Char. 70.1	to check whether to apply same wording as 70.2/3/4: intermediate resistant.
Ad. 70, 71, 6.	table with differentials to be updated
Ads. 70 and 71, 11.3	to read "response" instead of "comportment"

*Pea (*Pisum sativum* L.) (Partial revision)

123. The subgroup discussed documents TG/7/10 Rev. 2 and TWV/55/15, presented by Ms. Chrystelle Jouy (France), and agreed the following:

Ads. 58, 59, 60, 11.2	to add "Courtesy of GEVES – SNES in the framework of CPVO Harmores project"
Ad. 58	to check whether to update example varieties and update 9.3 and 11.3 accordingly (Susceptible: Aviron, Curling Resistant: Astronaute, LG Amigo)
Ad. 58, 5	- to replace strain by isolate - to check whether to delete 'race'
Ad. 58, 8.8	- to read "between 4 and 8 hours, ..." - 2nd sentence to read "The spores can be stored more than 3 years at -20°C."
Ad. 58, 9.1	to check whether to read "At least 20 inoculated plants and 5 non-inoculated control plants of the same sample per variety."
Ad. 58, 9.3	- to add "Little Marvel" as susceptible control and "Bingo" as resistant control (resistance level to be confirmed)
Ad. 58, 9.9	to read "It is important to compare the inoculated plants with the non-inoculated control plants of the same sample. This allows interpretation of symptoms of root rot, senescence or 'wilting' caused by the stress of having roots cut and not those caused by <i>F. oxysporum</i> infection."
Ad. 58, 10.1	to read "Initial fungal growth on agar plates (Malt or PDA), this is then used as liquid medium inoculum after remove hyphen fragments by filtering solution through muslin. For liquid medium, filter through muslin to remove large hyphal fragments."
Ad. 58, 11.2	Class 0 to read "No symptoms or equivalent to non-inoculated control plants of the same variety, 1 or 2 senesced (wilted/dried) lower leaves and slight reduction in growth compared to non-inoculated control plants of same variety are acceptable."
Ad. 58, 11.3	to be reviewed
Ad. 58, 13.	to add proposal to repeat with a higher number of non-inoculated plants as an option
Ad. 59	to check whether to update example varieties and update Chapter 9.3 accordingly (Susceptible: Astronaute, Aviron, Curling, Dexter, Balltrap, Ingrid Resistant: LG Amigo, Boogie, Oracle)

Ad 59, 5	- to move reference to CPVO project to Chapter 9 "Literature" - to check whether to delete "/race"
Ad. 59, 9.4	to read "No non-inoculated control plant of the same sample as it is impossible to place them exactly in the same conditions (due to risk of contamination)."
Ad. 59, 9.6	- to add that it is advised to perform test at 20°C, but depending on laboratory condition, test can be performed until 25°C - to check whether 25 or 27°C
Ad. 59, 10.2	- to read "1x10 ⁵ to 1x10 ⁶ spores/mL" - to add that an estimated proportion of one diseased plant (with a strong sporulation) can allow to inoculate 10 plants.
Ad. 59, 10.4	to check whether to add that this method of inoculation is performed by "a sprinkling" of the spores from the multiplication plants. To detach the spores, the multiplication plants are shacked above the tray of plants to inoculate.
Ad. 59, 13.	to read "Watering for plant growth on the substrate (no spraying) to avoid washing the spores off the surface of the leaves. It is not possible to freeze spores. Need to maintain on plants as pathogen is an obligate biotroph and cannot survive outside the living plant."
Ad. 59, 13	2nd sentence to improve: It is not possible to revive frozen spores. Maintain on plants.
Ad. 60	to check whether to delete example variety "Nina"
Ad. 60, 5.	to move reference to CPVO project to Chapter 9 "Literature"
Ad. 60, 8.8	to read "between 4 and 8 hours, ..."
Ad. 60, 9.1	to read "At least 20 inoculated plants and 5 non-inoculated plants per variety."
Ad. 60, 10.1	to read "Remove hyphal fragments by straining solution through muslin."
Ad. 60, 11.2	- to read "Class 0: no symptoms" (keep plural) - illustration to be updated
Ad. 60, 11.3	The decision on susceptible or resistant better fits at item 12. It will be helpful if the diagram (below the pictures of the classes) is clear on the position of Rondo and Madonna.

**Pepper (Capsicum annum L.) (Revision)*

124. The subgroup discussed document TG/76/9(proj.3), presented by Ms. Marian van Leeuwen (Netherlands), and agreed the following:

1.	to add ASW 0 to read "In the case of ornamental and rootstock varieties, in particular, it may be necessary to use additional characteristics or additional states of expression to those included in the Table of Characteristics in order to examine Distinctness, Uniformity and Stability."
4.2.5	to delete "single cross" and refer to hybrids in general
6.5	7 to read "not applicable"
Char. 3	to be indicated as MG/MS/VG
Char. 8	to be deleted
Chars. 15, 16, 17 and Chars. 55, 56, 57, 58 and 59	to create groups for ornamental, vegetable varieties and rootstocks in Chapter 5.3
Char. 15	- to check wording of states 2 and 3 (see TGP/14 for color distribution and patterns) - state 5 to read "throughout"
Char. 27	to check whether to be combined with Char. 28 to indicate only existing combinations of colors and intensities
Char. 28	to check whether to present example varieties for different colors and intensities in a table in an explanation and/or delete example varieties, because it is not possible to provide example varieties for all colors and all intensities
Char. 29	to read "Excluding varieties with Immature fruit: color: purple: Immature fruit: anthocyanin coloration"
Char. 34	- to check whether to use only 2D or 3D shapes (see document TGP/14) - to review example varieties
Char. 53	to be indicated as QN

8.1 (a)	to read "Observations on plant, stem, internodes and leaves..."
Ad. 4	to be improved (add borders to table)
Ad. 6	to be deleted
Ad. 25	to improve illustrations
Ad. 26	state 3 to read "totally present"
Ad. 33	to check whether to be improved (link states better to illustrations)
Ad. 34	to separate from Ad. 33 and have a separate illustration for Char. 34
Ad. 35	- to check whether to add that observations should be made excluding the tip - to provide better illustration for state 2 (could currently be confused with S-shaped)
Ad. 39	to add illustration for state 9
Ad. 53	to delete "(2)" in the explanation
8.3	to be deleted and move information to the legend in Chapter 6.5

**Vegetable Marrow, Squash (Cucurbita pepo L.) (Partial revision)*

125. The subgroup noted the presentation prepared by Ms. Chrystelle Jouy (France) on "Squash - ZYMV and WMV biotests results: 2018, 2019, 2020 DUS campaigns". A copy of the presentation is provided in document TWV/55/12 Add..

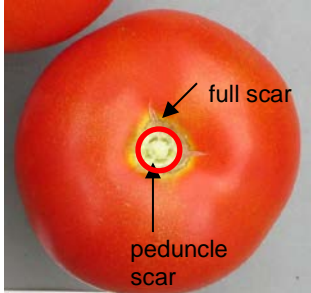
126. The subgroup discussed documents TG/119/4 Corr. 2 and TWV/55/12, presented by Ms. Chrystelle Jouy (France), and agreed the following:

Chars. 82, 83	- to check wording of states of expression (resistant, high resistant or highly resistant) - to check general approach (QN with 5 notes, but states "not used" or "not identified")
Char. 82	- to delete "Not used" for states 2 and 4 - state 2: to correct spelling of "susceptible"
Char. 83	- to delete "Not used" for state 2 and "Not identified" for state 5 - to add type of expression: QN - state 2: to correct spelling of "susceptible" - to delete "Mikonos"
Ad. 82, 11.3	- to read "... and are depending on" (instead of "of") - The sentence "The two intermediate and resistant controls are necessary to validate the aggressiveness of the test appears at 11.3 for ad 82 and at 9.3 for ad. 83. Should they not be at the same place?"
Ad 83, 9.3	- to move sentence "The two levels in intermediate resistant controls are not just for the aggressivity of the test, but they discriminate varieties." to 11.3 - to read <ul style="list-style-type: none"> • Susceptible: Cora • Intermediate resistant : <ul style="list-style-type: none"> ○ Sofia (low threshold level) ○ Syros (higher level of intermediate resistant than Sofia)= Intermediate resistant to resistant
Ad. 83, 11.3	- to read "... and are depending on" (instead of "of")
Ad. 83, 12.	second to last paragraph: to replace "Mikonos" with "Syros"

Tomato (Solanum lycopersicum L.) (Revision)

127. The subgroup discussed document TG/44/12(proj.1), presented by Ms. Amanda van Dijk (Netherlands), and agreed the following:

Coverage	to update UPOV codes (for <i>Solanum lycopersicum</i> x <i>Solanum pimpinellifolium</i> the authors are missing)
2.3	(b) to read "vegetatively propagated varieties: 25 non-grafted young plants without fruit. ..."
3.4	to add new paragraph to read "When resistance characteristics are used for assessing distinctness, uniformity and stability, records must be taken under conditions of controlled infection and, unless otherwise specified, on at least 20 plants."

Char. 4	to delete (a) and to add to Ad. 4 “Observations should be made in the upper third of the plant.”
Char. 15	to add state “semi-drooping” with example varieties
Char. 19	to replace “Pedicel” by “Peduncle”
Char. 25	to be indicated as VG/MS
Char. 38	- to check whether to add new state “purple” (or is it anthocyanin coloration?) - to replace “cream” with appropriate color name (“yellowish white”?)
Char. 39	to add illustrations
Char. 42	to be moved before Char. 16
Char. 43	to be moved before Char. 25
Char. 44	to check wording of states of expression (resistant, high resistant or highly resistant)
Chars. 56 to 68	names of diseases or viruses to be in <i>italics</i> (also in explanations)
Ad. 16	to add “Observe the ratio of uniparous and multiparous trusses to decide for states 1, 2 and 3. Pictures are for clarification of uniparous, multiparous and multiflora trusses.”
Ad. 30	to add the following illustration and check whether the wording “full scar” is correct 
Ads. 32, 33	to add/correct illustrations
Ad. 36	to add “Be aware of bad fruit set which may cause hollow fruits with lower amount of gel, also in normal fruit type.”
Ad. 37	second sentence to read “It should be noted that parent lines homozygous for the RIN gene do not ripen at all. In that case the fruits look green but are unripe and this characteristic is not applicable.”
Ad. 38	to add “It should be noted that parent lines homozygous for the RIN gene do not ripen at all. In that case the flesh looks green but the fruits are unripe and this characteristic is not applicable.”
Ads. 44 to 68	to check whether reference to MATREF to be removed for control varieties and differential hosts
Ad. 44, 8.3	to read “2nd leaf stage”
Ad. 44, 8.5	to read “... (around 5-10g near each plant, ...)
Ad. 44, 9.3	resistant control “Anahu x Casaque Rouge” to be replaced
Ad. 44, 11.2	sentence below image to read “...seeds that did not produce a plant due to the presence of nematodes, and add these to plants in class 4.”
Ad. 44, 12.	- to replace last sentence with the following text: “If significantly different from highly resistant and intermediate resistant control (result between highly resistant and intermediate resistant controls), the variety is judged as intermediate resistant. If significantly different from intermediate resistant and susceptible control (result between intermediate resistant and susceptible controls), the variety is judged as susceptible. If results are not clear, statistical analysis is advised. - to add a figure to help to understand the interpretation.
Ad. 45	to add “6. Establishment isolate identity” to read “use differential varieties, see ISF website: https://www.worldseed.org ”
Ad. 45, 13.	to add “Note : Resistance to <i>V. dahliae</i> based in the Ve gene is also effective to <i>V. albo-atrum</i> . Isolates of both fungal species may be used to evaluate the UPOV characteristic “Resistance to <i>V. dahliae</i> ” or <i>V. albo-atrum</i> as long as the isolate belongs to the non-Ve breaking race 0. Resistance-breaking isolates have been described in both species.”
Ad. 46, 9.3.3	to add “Murdoch” as resistant control (if appropriate with footnote referring to Matref)

Ad. 46, 11.3	to add “controls with medium level of resistance can show a higher number of plants in class 2 and 3”
Ad. 50, 6.	to add “, see https://www.worldseed.org ”
Ad. 50, 9.3	control varieties to be updated
Ad. 56 (i), 9.3	to check whether to delete “Mocimor”
Ad. 56 (ii)	to adjust wording (e.g. “allele for resistance” instead of “resistant allele”)
Ad. 59, 9.3	control varieties to be checked
Ad. 60, 9.3	to add “Montfavel H 63.5” as susceptible control
Ad. 61, 9.6	to read “24°C or 23°C/17°C”
Ad. 65 (ii)	to adjust wording (e.g. “allele for resistance” instead of “resistant allele”)
TQ 5.13	to add option “not applicable”
TQ 6	to add example
TQ 7.3	format to be reviewed

*Tomato rootstock (Partial revision)

128. The subgroup discussed documents TG/294/1 Corr. Rev. 3 and TWV/55/13, presented by Ms. Amanda van Dijk (Netherlands), and agreed the following:

Ad. 22, 8.3	to read “2 nd leaf stage”																								
Ad. 22, 8.5	to read “... (around 5-10g near each plant, to adapt depending on ...”																								
Ad. 22, 11.2	to read “...that did not produce a plant due to the presence of the nematode, and add these to plants in class 4.”																								
Ad. 22, 12.	<p>- to add “If significantly different from resistant and intermediate resistant control (result between highly resistant and intermediate resistant intermediate resistant controls), the variety is judged as intermediate resistant. If significantly different from intermediate resistant and susceptible control (result between intermediate resistant and susceptible controls), the variety is judged as susceptible. - to add illustration</p>																								
Char. 23	to replace “Big Power” with “Bruce, Emperador, King Kong”																								
Ad. 24,11.2	to add the following table to illustrate the scale of symptoms, with 4 classes.																								
	<table border="1"> <thead> <tr> <th>Class 0</th> <th>Class 1</th> <th>Class 2</th> <th>Class 3</th> </tr> </thead> <tbody> <tr> <td>Healthy compared to the non-inoculated control.</td> <td>Healthy compared to the non-inoculated control with brown vessel above the cotyledon (observed when plants are cut in case of variety with different levels of symptoms)</td> <td>Higher than 50% of growth reduction and/or yellowing and/or wilting on cotyledons and/or leaves.</td> <td>Nearly dead: strong reduction with plants look dwarf (there can be necrosis but not always) or dead</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">If all plants in class 0 or if all plants in classes 2 and 3, it is not necessary to cut the plants.</td> </tr> <tr> <td colspan="4">In case of variety or control with different levels of symptoms, cut the plants to check presence or not of strong brown vessel above cotyledons.</td> </tr> <tr> <td colspan="4">In case of no brown vessels or below cotyledons, the plant is note 0. In case of brown vessels above cotyledons, the plant is note 1.</td> </tr> </tbody> </table>	Class 0	Class 1	Class 2	Class 3	Healthy compared to the non-inoculated control.	Healthy compared to the non-inoculated control with brown vessel above the cotyledon (observed when plants are cut in case of variety with different levels of symptoms)	Higher than 50% of growth reduction and/or yellowing and/or wilting on cotyledons and/or leaves.	Nearly dead: strong reduction with plants look dwarf (there can be necrosis but not always) or dead					If all plants in class 0 or if all plants in classes 2 and 3, it is not necessary to cut the plants.				In case of variety or control with different levels of symptoms, cut the plants to check presence or not of strong brown vessel above cotyledons.				In case of no brown vessels or below cotyledons, the plant is note 0. In case of brown vessels above cotyledons, the plant is note 1.			
Class 0	Class 1	Class 2	Class 3																						
Healthy compared to the non-inoculated control.	Healthy compared to the non-inoculated control with brown vessel above the cotyledon (observed when plants are cut in case of variety with different levels of symptoms)	Higher than 50% of growth reduction and/or yellowing and/or wilting on cotyledons and/or leaves.	Nearly dead: strong reduction with plants look dwarf (there can be necrosis but not always) or dead																						
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In case of variety or control with different levels of symptoms, cut the plants to check presence or not of strong brown vessel above cotyledons.																									
In case of no brown vessels or below cotyledons, the plant is note 0. In case of brown vessels above cotyledons, the plant is note 1.																									
Char. 26	to replace “Big Power” with “Vitalfort” for groups A, C and E (sub-characteristics)																								

Ad. 26, 9.3	to have the following control varieties: Susceptible: King Kong, (<i>Solanum lycopersicum</i>) Monalbo, Moneymaker Resistant for race 0: Bruce, (<i>Solanum lycopersicum</i>) Vagabond, Vagabond x IVT 1149, IVT 1154, Purdue Resistant for race group A: ... Vitalfort, (<i>Solanum lycopersicum</i>) Sonato, Purdue, IVT1154, IVT1149 Resistant for race group B: ... Bruce, (<i>Solanum lycopersicum</i>) Vétomold, IVT1154, IVT1149 Resistant for race group C: ... Vitalfort, (<i>Solanum lycopersicum</i>) IVT1154, IVT1149 Resistant for race group D: ... Bruce, (<i>Solanum lycopersicum</i>) Vétomold, IVT1154 Resistant for race group E: .. Vitalfort, (<i>Solanum lycopersicum</i>) IVT 1154
TQ 7.3.1	to move all diseases resistances to Section TQ 5 and add an option “not tested” for characteristics without (*)
TG 7.3.1 (h)	to read “wilt” instead of wild

*Turnip (*Brassica rapa L. var. rapa L.*) (Revision)

129. The subgroup discussed document TG/37/11(proj.7), presented by Mr. Dominique Rousseau (France), and agreed the following:

6.4	to move information on types of example varieties (A) and (S) to 6.5
Chars. 4, 8, 9, 14	state 2 to read “very weak to weak”
Char. 6	state 2 to read “very few to few”
Char. 7	state 2 to read “very shallow to shallow”
8.1 (b)	- to read “... to be lobed if: ...” - to correct title of Chars. 12 and 13 (“lobe” instead of “lobed”)
9.	to add missing cities/regions and countries to the individual references
TQ 5.3	state 2 to read “very few to few”

*Wild Rocket (*Diplotaxis tenuifolia (L.) DC.*) (Partial revision)

130. The subgroup discussed documents TG/244/1 and TWV/55/10, presented by Ms. Marian van Leeuwen (Netherlands), and agreed the following:

5.3	(a) to read “Leaf: anthocyanin coloration of veins (characteristic 4)” (add characteristic number)
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Recommendations on draft Test Guidelines

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

131. The TWV agreed that the following draft Test Guidelines should be submitted to the TC for adoption at its fifty-seventh session, to be held in Geneva on October 25 and 26, 2021 on the basis of the following documents and the comments in this report:

Subject	Basic Document(s) (2021)
*Garden Rocket (<i>Eruca sativa</i> Mill.) (Partial revision: addition of a characteristic concerning anthocyanin coloration of leaf blade)	TG/245/1, TWV/55/9
*Lettuce (<i>Lactuca sativa</i> L.) (Partial revision: Char. and Ad. 53 “Resistance to LMV”; addition of DNA marker test)	TG/13/11 Rev., TWV/55/11
*Tomato rootstock (Partial revision: coverage: to remove <i>S. cheesmaniae</i> , Chars. and Ads. 22 “Resistance to Mi”, 23 “Resistance to Va and Vd”, 24 “Resistance to Fol”, 26 “Resistance to Ff”)	TG/294/1 Corr. Rev. 3, TWV/55/13
*Turnip (<i>Brassica rapa L. var. rapa L.</i>) (Revision)	TG/37/11(proj.7)
*Wild Rocket (<i>Diplotaxis tenuifolia (L.) DC.</i>) (Partial revision: partial revision: addition of a characteristic concerning anthocyanin coloration of leaf blade)	TG/244/1, TWV/55/10

(b) *Test Guidelines to be discussed at the fifty-sixth session*

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

Full draft Test Guidelines

<u>Subject</u>	<u>Basic Document(s) (2021)</u>
Chinese cabbage (<i>Brassica rapa</i> L. subsp. <i>pekinensis</i> (Lour.) Kitam., hybrids between <i>B. rapa</i> L. Emend. Metzg. ssp. <i>pekinensis</i> (Lour.) Hanelt and <i>B. rapa</i> L. Emend. Metzg. ssp. <i>chinensis</i> (L.) Hanelt, hybrids between <i>B. rapa</i> L. Emend. Metzg. ssp. <i>pekinensis</i> (Lour.) Hanelt and <i>B. rapa</i> L. var. <i>rapa</i> (L.) Thell., <i>Brassica xturicensis</i> O. E. Schulz & Thell.) (Revision)	TG/105/5(proj.1)
Egg plant (<i>Solanum melongena</i> L.) (Revision)	TG/117/5(proj.2)
*Kale (<i>Brassica oleracea</i> L. var. <i>costata</i> DC.; <i>B. oleracea</i> L. var. <i>medullosa</i> Thell.; <i>B. oleracea</i> L. var. <i>sabellica</i> L.; <i>B. oleracea</i> L. var. <i>viridis</i> L.; <i>B. oleracea</i> L. var. <i>palmifolia</i> DC.) (Revision)	TG/90/7(proj.3)
*Pepper (<i>Capsicum annuum</i> L.) (Revision)	TG/76/9(proj.3)
*Tomato (<i>Solanum lycopersicum</i> L.) (Revision)	TG/44/12(proj.1)

Partial revisions

<u>Subject</u>	<u>Basic Document(s) (2021)</u>
*Garden Rocket (<i>Eruca sativa</i> Mill.) (Partial revision: Update on example varieties for several characteristics)	TG/245/1
*Garlic (<i>Allium sativum</i> L.) (Partial revision: addition of plant material: seed and uniformity requirements)	TG/162/4
*Kohlrabi (<i>Brassica oleracea</i> L. convar. <i>acephala</i> (DC.), Alef. var. <i>gongylodes</i> L. (<i>Brassica oleracea</i> L. <i>Gongylodes</i> Group). (Partial revision: (i) Deletion of Char./Ad. 11 "Leaf blade: divisions to midrib (on lower part of leaf)"; (ii) Revision of Char./Ad. 20 "Kohlrabi: color of skin")	TG/65/4 Rev.
*Leaf Chicory (<i>Cichorium intybus</i> L. var. <i>foliosum</i> Hegi) (Partial revision: (i) Char. 8 "Leaf color" (ii) Char. 11 "Leaf: profile of upper side" (iii) Char. 25 "Head: color of cover leaves" (iv) Addition of new Char. " <u>Only varieties with anthocyanin coloration: present</u> Leaf: area covered by anthocyanin coloration" (v) Addition of new Char. "Leaf: profile of margin of apical part"	TG/154/4
*Melon (<i>Cucumis melo</i> L.) (Partial revision: Char. 69 "Resistance to Fom", Char. 70 "Resistance to Px")	TG/104/5 Rev. 2, TWV/55/14
*Pea (<i>Pisum sativum</i> L.) (Partial revision: Char. 58 "Resistance to Fop", Char. 59 "Resistance to <i>E. pisi</i> ", Char. 60 "Resistance to <i>A. pisi</i> ")	TG/7/10 Rev. 2, TWV/55/15
*Spinach (<i>Spinacia oleracea</i> L.) (Partial revision: Char./Ad. 18 "Resistance to <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> ")	TG/55/7 Rev. 6
*Squash (Partial revision: to add new Characteristics "Resistance to ZYMV" and "Resistance to Watermelon mosaic virus")	TG/119/4 Corr. 2, TWV/55/12
*Wild Rocket (<i>Diplotaxis tenuifolia</i> (L.) DC.) (Partial revision: Update on example varieties for several characteristics)	TG/244/1

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

(c) *Draft Test Guidelines for possible future discussion*

134. The TWV agreed on the following draft Test Guidelines for discussion at a future session:

<u>Subject</u>	<u>Basic Document(s) (2021)</u>
Water spinach (<i>Ipomoea aquatica</i>)	NEW

Date and place of the next session

135. At the invitation of Turkey, the TWV agreed to hold its fifty-sixth session in Antalya, Turkey, from April 18 to 22, 2022.

Future program

136. The TWV agreed that in order to allow sufficient time in advance of the meeting to post the documents and provide comments, all documents and presentations invited or to be prepared should be sent to the Office of the Union at least 8 weeks prior to the session.

137. 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. Development of guidance and information materials
6. Possible use of COYU Splines for vegetable crops (document and presentation to be prepared by the United Kingdom)
7. Variety denominations (document to be prepared by the Office of the Union)
8. 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)
9. Experiences with new types and species (oral reports invited)
10. Revision of Test guidelines (document to be prepared by the Office of the Union, and documents invited)
11. Replacing botanical nomenclature of *Brassica oleracea* by variety groups (document to be prepared by the Netherlands)
12. New issues arising for DUS examination (presentations invited from members of the Union)
13. Use of disease resistance characteristics (presentations invited from France, the Netherlands and ISF and other members of the Union and observers)
14. Matters to be resolved concerning Test Guidelines put forward for adoption by the Technical Committee (if appropriate)
15. Discussions on draft Test Guidelines (Subgroups)
16. Recommendations on draft Test Guidelines

17. Guidance for drafters of Test Guidelines
18. Date and place of the next session
19. Future program
20. Report on the session (if time permits)
21. Closing of the session

Virtual Tour

138. On May 5, 2021, the TWV received a presentation on DUS examination in Turkey. Mr. Sitki ERMIS, and Ms. Güleda ÖKTEM, Agricultural engineers, Variety Registration and Seed Certification Center, Ankara, presented the work done for DUS examination on pepper, pea, watermelon, tomato, melon and other vegetable crops. The presentations and the interaction with the experts was greatly appreciated by the participants.

139. The TWV adopted this report at the close of its session.

[Annex I follows]

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III. OFFICE OF UPOV

Peter BUTTON (Mr.), Vice Secretary-General

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

Romy OERTEL (Ms.), Secretary II

Jessica MAY (Ms.), Secretary I

Urška ČERV (Ms.), Administrative support

[Annex II follows]

ANNEX II

WELCOME ADDRESS BY MS. AYSE AYSIN ISIKGECE, DEPUTY MINISTER, MINISTER OF AGRICULTURE AND FORESTRY

DISTINGUISHED DELEGATIONS FROM UPOV MEMBER PARTIES AND PARTICIPANT

AT THE OUTSET, I WOULD LIKE TO EXPRESS MY PLEASURE FOR WELCOMING YOU ALL FOR THE UPOV TECHNICAL WORKING PARTY MEETING FOR VEGETABLES.

AS YOU ALL KNOW, THIS MEETING WAS ORIGINALLY SCHEDULED FOR BEING HELD IN ANTALYA, TURKEY, BUT UNFORTUNATELY BECAUSE OF COVID 19 PANDEMIC IT WAS AGREED TO HOLD THE MEETING BY ELECTONICAL MEANS.

AT THIS POINT, ON BEHALF OF THE TURKISH REPUBLIC AND OUR MINISTY OF AGRICULTURE AND FORESTRY, I WOULD LIKE TO EXTEND OUR DEEPEST CONDOLESENCES TO THOSE WHO HAVE LOST THEIR LIVES BECAUSE OF THE COVID 19 PANDEMIC AND WISH FULL RECOVERY TO THOSE WHO AFFECTED NEGATIVELY.

AS WE ALL ARE WELL AWARE, UPOV IS THE MOST PRESTIGIOUS AND RESPECTED AUTHORITY REGULATING PLANT BREEDERS' RIGHTS PROTECTION THROUGHTOUT THE WORLD. OF COURSE THIS RESPECT DOES NOT COME FROM COINCIDENCE, BUT FROM HARD WORK, EFFORTS AND EXPERIENCE. WE ALSO KNOW THAT YOU ARE THE CORE OF THIS SUCCESS STORY.

DUS TESTING IS ESSENTIAL FOR PBR PROTECTION AND SETTING UP ACCURATE TESTING, TAKING BETTER OBSERVATION, EVALUATING REQUIRED CHARACTERISTICS OFFER US AN ACCEPTABLE TECHNICAL EXAMINATION REPORT. THIS CAN ONLY BE ACHIEVED BY HAVING UPTODATE TECHNICAL GUIDELINES AND YOU ARE THE ONES, AUTOR OF THIS SUCCESS STORY.

THEREFORE, I WOULD LIKE TO THANK YOU ALL FOR YOUR PRECIOUS EFFORTS TO MOVE FORWARD UPOV TO FUTURE AND TO HAVE BETTER PBR SYSTEM WITH IMPROVED TEHCNICAL GUIDELINES.

DISTINGUISHED PARTICIPANTS,

BY TAKING THIS OPPORTUNITY, I WOULD LIKE GIVE YOU SOME BRIEF INFORMATION ON TURKISH PBR SYSTEM. TURKEY HAS BEEN A MEMBER OF UPOV SINCE 2007. OUR PBR SYSTEM IS IN FULL HARMONY WITH THE UPOV CONVENTION. TURKEY IS ALSO A MEMBER OF ISTA AND OECD SEED SCHEME. SO FAR WE HAVE RECEIVED 2620 PBR APPLICATIONS AND GRANTED 1710 APPLICATIONS WITH PBR PROTECTION. ACTIVELY PROTECTED VARIETY NUMBER IS 1347.

TURKEY IS AN ACTIVE MEMBER OF UPOV PRISMA ELECTRONIC APPLICATION SYSTEM AND BY THIS SYSTEM WE HAVE SUCCESSFULLY RECEIVED 108 APPLICATIONS AND EVEN AMONG THOSE PRISMA APPLICATIONS, 23 HAVE BEEN GRANTED WITH PBR PROTECTION. IF WE LOOK OVER ALL APPLICATIONS, 54 PERCENT OF THE APPLICATIONS BELONG TO FOREIGN APPLICANTS.

THIS SHOWS THAT UPOV MEMBER PARTIES ARE FULLY AWARE OF THE TURKISH PBR SYSTEM AND WITHOUT ANY HINDRANCE THEY ENJOY SUBMITTING THEIR PBR APPLICATIONS AND BENEFIT FROM FULL PBR PROTECTION IN TURKEY.

DISTINGUISHED PARTICIPANTS,
TOUGH AND BAD TIMES DO NOT LAST FOREVER, THEREFORE WE, AS THE HUMANKIND, MANAGE TO OVERCOME THE COVID 19 PANDEMIC. ALTHOUGH IT IS A PRIVILEGE AND HONOR FOR US TO WELCOME THIS ELECTRONICAL MEETING IN TURKEY, WE ARE STILL EAGER AND DETERMINED TO WELCOME AND HOST THE NEXT UPOV TECHNICAL WORKING PARTY MEETING FOR VEGETABLES IN ANTALYA NEXT YEAR. SO I KINDLY REQUEST YOUR WORKING PARTY AND UPOV SECRETARIAT TO EVALUATE OUR OFFER ON THIS ISSUE.

DISTINGUISHED PARTICIPANTS,
TO CONCLUDE MY SPEECH, I WOULD LIKE WELCOME YOU ALL ONCE AGAIN, WISH A SUCCESSFUL AND FRUITFUL MEETING AND REITERATE OUR OFFER TO WELCOME AND HOST THE NEXT UPOV TECHNICAL WORKING PARTY MEETING FOR VEGETABLES IN ANTALYA NEXT YEAR.

THANK YOU

[Annex III follows]

LIST OF LEADING EXPERTS

**DRAFT TEST GUIDELINES TO BE SUBMITTED
TO THE TECHNICAL COMMITTEE IN 2021**

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

before June 18, 2021

Species	Basic Document	Leading Expert(s)
*Garden Rocket (<i>Eruca sativa</i> Mill.) (Partial revision: addition of a characteristic concerning anthocyanin coloration of leaf blade)	TG/245/1, TWV/55/9	Ms. Marian van Leeuwen (NL)
*Lettuce (<i>Lactuca sativa</i> L.) (Partial revision: Char. and Ad. 53 "Resistance to LMV"; addition of DNA marker test)	TG/13/11 Rev., TWV/55/11	Ms. Amanda van Dijk (NL)
*Tomato rootstock (Partial revision: coverage: to remove <i>S. cheesmaniae</i> , Chars. and Ads. 22 "Resistance to Mi", 23 "Resistance to Va and Vd", 24 "Resistance to Fol", 26 "Resistance to Ff")	TG/294/1 Corr. Rev. 3, TWV/55/13	Ms. Amanda van Dijk (NL)
*Turnip (<i>Brassica rapa</i> L. var. <i>rapa</i> L.) (Revision)	TG/37/11(proj.7)	Mr. Dominique Rousseau (FR)
*Wild Rocket (<i>Diplotaxis tenuifolia</i> (L.) DC.) (Partial revision: partial revision: addition of a characteristic concerning anthocyanin coloration of leaf blade)	TG/244/1, TWV/55/10	Ms. Marian van Leeuwen (NL)

DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWV/56

(* indicates possible final draft Test Guidelines)

**(Guideline date for Subgroup draft to be circulated by Leading Expert: January 07, 2022
Guideline date for comments to Leading Expert by Subgroup: February 04, 2022)**

New draft to be submitted to the Office of the Union

by March 05, 2022

Full draft Test Guidelines

Species	Basic Document	Leading Expert(s)	Interested Experts (State / Organization) ¹
Chinese cabbage (<i>Brassica rapa</i> L. subsp. <i>pekinensis</i> (Lour.) Kitam., hybrids between <i>B. rapa</i> L. Emend. Metzg. ssp. <i>pekinensis</i> (Lour.) Hanelt and <i>B. rapa</i> L. Emend. Metzg. ssp. <i>chinensis</i> (L.) Hanelt, hybrids between <i>B. rapa</i> L. Emend. Metzg. ssp. <i>pekinensis</i> (Lour.) Hanelt and <i>B. rapa</i> L. var. <i>rapa</i> (L.) Thell., <i>Brassica xturicensis</i> O. E. Schulz & Thell.) (Revision)	TG/105/5(proj.1)	Mr. Chan Woong Park	CN, CZ, DE, FR, JP, NL, PL, QZ, CLI, Euroseeds, ISF, Office
Egg plant (<i>Solanum melongena</i> L.) (Revision)	TG/117/5(proj.2)	Ms. Céline Morineau (QZ)	AU, BR, CN, DE, ES, FR, HU, IT, JP, KE, KR, NL, SK, TR, CLI, Euroseeds, ISF, Office
*Kale (<i>Brassica oleracea</i> L. var. <i>costata</i> DC.; <i>B. oleracea</i> L. var. <i>medullosa</i> Thell.; <i>B. oleracea</i> L. var. <i>sabellica</i> L.; <i>B. oleracea</i> L. var. <i>viridis</i> L.; <i>B. oleracea</i> L. var. <i>palmifolia</i> DC.) (Revision)	TG/90/7(proj.3)	Mr. Takayuki Nishikawa (JP)	AU, CN, DE, FR, GB, IT, JP, KE, KR, NL, QZ, CLI, Euroseeds, ISF, Office
*Pepper (<i>Capsicum annuum</i> L.) (Revision)	TG/76/9(proj.3)	Ms. Marian van Leeuwen (NL)	AU, BG, BR, CA, CN, CZ, DE, ES, FR, HU, IT, JP, KE, KR, NL, PL, QZ, SK, TR, US, CLI, Euroseeds, ISF, Office
*Tomato (<i>Solanum lycopersicum</i> L.) (Revision)	TG/44/12(proj.1)	Ms. Cécile Marchenay (NL)	BG, BR, CA, CN, CZ, ES, FR, HU, IS, IT, KE, JP, PL, KR, NL, QZ, RO, RU, SK, TR, US, CLI, Euroseeds, ISF, Office

Partial revisions

Species	Basic Document	Leading Expert(s)	Interested Experts (State / Organization) ¹
*Garden Rocket (<i>Eruca sativa</i> Mill.) (Partial revision: Update on example varieties for several characteristics)	TG/245/1	Ms. Marian van Leeuwen (NL)	AU, FR, IT, NL, QZ, CLI, Euroseeds, ISF, Office
*Garlic (<i>Allium sativum</i> L.) (Partial revision: addition of plant material: seed and uniformity requirements)	TG/162/4	Ms. Marian van Leeuwen (NL)	BR, CZ, ES, FR, JP, KR, NL, PL, QZ, CLI, Euroseeds, ISF, Office

¹ for name of experts, see list of participants

*Kohlrabi (<i>Brassica oleracea</i> L. convar. <i>acephala</i> (DC.), Alef. var. <i>gongylodes</i> L. (<i>Brassica oleracea</i> L. <i>Gongylodes</i> Group). (Partial revision: (i) Deletion of Char./Ad. 11 “Leaf blade: divisions to midrib (on lower part of leaf)”; (ii) Revision of Char./Ad. 20 “Kohlrabi: color of skin)	TG/65/4 Rev.	Ms. Gosia Blokker (NL)	DE, FR, NL, QZ, CLI, Euroseeds, ISF, Office
*Leaf Chicory (<i>Cichorium intybus</i> L. var. <i>foliosum</i> Hegi) (Partial revision: (i) Char. 8 “Leaf color” (ii) Char. 11 “Leaf: profile of upper side” (iii) Char. 25 “Head: color of cover leaves” (iv) Addition of new Char. <u>“Only varieties with anthocyanin coloration: present Leaf: area covered by anthocyanin coloration”</u> (v) Addition of new Char. “Leaf: profile of margin of apical part”	TG/154/4	Mr. Dominique Rousseau (FR)	CA, IT, NL, QZ, CLI, Euroseeds, ISF, Office
*Melon (<i>Cucumis melo</i> L.) (Partial revision: Char. 69 “Resistance to Fom”, Char. 70 “Resistance to Px”)	TG/104/5 Rev. 2, TWV/55/14	Ms. Chrystelle Jouy (FR)	BR, ES, IT, JP, KE, KR, NL, QZ, SK, CLI, Euroseeds, ISF, Office
*Pea (<i>Pisum sativum</i> L.) (Partial revision: Char. 58 “Resistance to Fop”, Char. 59 “Resistance to <i>E. pisi</i> ”, Char. 60 “Resistance to <i>A. pisi</i> ”)	TG/7/10 Rev. 2, TWV/55/15	Ms. Chrystelle Jouy (FR)	BR, CA, CZ, DE, ES, GB, IT, JP, KE, NL, PL, QZ, US, CLI, Euroseeds, ISF, Office
*Spinach (<i>Spinacia oleracea</i> L.) (Partial revision: Char./Ad. 18 “Resistance to <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> ”)	TG/55/7 Rev. 6	Ms. Marian van Leeuwen (NL)	AU, FR, IT, NL, QZ, CLI, Euroseeds, ISF, Office
*Squash (Partial revision: to add new Characteristics “Resistance to ZYMV” and “Resistance to Watermelon mosaic virus”)	TG/119/4 Corr. 2, TWV/55/12	Ms. Chrystelle Jouy (FR)	CA, CN, ES, IT, JP, KE, KR, NL, PL, QZ, CLI, Euroseeds, ISF, Office
*Wild Rocket (<i>Diplotaxis tenuifolia</i> (L.) DC.) (Partial revision: Update on example varieties for several characteristics)	TG/244/1	Ms. Marian van Leeuwen (NL)	AU, FR, IT, NL, QZ, CLI, Euroseeds, ISF, Office

Draft Test Guidelines for possible future discussion

Species	Basic Document
Water spinach (<i>Ipomoea aquatica</i>)	NEW

[End of Annex III and document]