

Technical Committee**TC/55/3****Fifty-Fifth Session
Geneva, October 28 and 29, 2019****Original:** English
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MATTERS ARISING FROM THE TECHNICAL WORKING PARTIES*Document prepared by the Office of the Union**Disclaimer: this document does not represent UPOV policies or guidance***EXECUTIVE SUMMARY**

1. This document summarizes matters arising from the 2019 sessions of the Technical Working Party for Ornamental Plants and Forest Trees, Technical Working Party for Vegetables, Technical Working Party for Fruit Crops and Technical Working Party for Agricultural Crops which are not expressly covered by specific agenda items.

2. Matters arising are presented in two sections. The first section, "Matters for information and for a possible decision to be taken by the Technical Committee (TC)", identifies matters raised which may require a decision to be taken by the TC. The Office of the Union (Office) has highlighted aspects where the TC may wish to take a decision by introducing a proposed decision paragraph. The second section, "Matters for information", is provided for the information of the TC but does not require decisions at this stage.

3. The TC is invited to note developments in the TWPs concerning:

- (i) Use of Disease resistance characteristics;
- (ii) Access to plant material for the purpose of management of variety collections and DUS examination;
- (iii) DUS examination of mutant varieties of apple;
- (iv) Experiences with defining trees, shrubs and vines;
- (v) Defining "growing cycle" for ornamental species;
- (vi) Experiences with characteristics assessed on the basis of bulk samples;
- (vii) Experience with the RHS Colour Chart and possible future addition of colors;
- (viii) Experience with taxonomic databases
- (ix) Inconsistencies between TQ information and plant material submitted for trial;
- (x) Experiences with new types and species;
- (xi) New issues arising for DUS examination;
- (xii) Matters relevant in DUS examination for the fruit sector; and
- (xiii) Discussion groups to discuss "New technology used in DUS examination"

4. The following abbreviations are used in this document:

CAJ:	Administrative and Legal Committee
TC:	Technical Committee
TC-EDC:	Enlarged Editorial Committee
TWA:	Technical Working Party for Agricultural Crops
TWC:	Technical Working Party on Automation and Computer Programs
TWF:	Technical Working Party for Fruit Crops
TWO:	Technical Working Party for Ornamental Plants and Forest Trees
TWPs:	Technical Working Parties
TWV:	Technical Working Party for Vegetables

5. The structure of this document is as follows:

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MATTERS FOR INFORMATION AND FOR A POSSIBLE DECISION TO BE TAKEN BY THE TECHNICAL COMMITTEE (TC)

6. There are no matters for a decision by the Technical Committee at its fifty-fifth session.

MATTERS FOR INFORMATION

Use of Disease resistance characteristics

Developments at the Technical Committee

7. The TC, at its fifty-fourth session, held in Geneva on October 29 and 30, 2018, considered the reports of discussions on disease resistance characteristics in DUS examination at the TWPs, at their sessions in 2017 and 2018, as set out in document TC/54/3, paragraphs 43 to 55 (see document TC/54/31 “Report”, paragraphs 202 and 203)

8. The TC noted the plans of the TWV to discuss disease resistance characteristics in DUS examination at its subsequent session and agreed to invite the TWV to report on developments to the TC, at its fifty-fifth session. The TC recalled the importance of standardized methodologies and the need to meet the requirements of TGP/7 for disease resistance characteristics. It also agreed that it would be useful for the Office of the Union to present at the TWV the relevant guidance in TGP documents covering disease resistance characteristics, including the guidance in TGP/7 “Development of Test Guidelines”, TGP/12 “Guidance on Certain Physiological Characteristics” and TGP/15 “Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)”.

Developments at the Technical Working Party for Vegetables

9. The TWV, at its fifty-third session, held in Seoul, Republic of Korea, from May 20 to 24, 2019, received the following presentations, copies of which are provided in document TWV/53/13 Rev. (see document TWV/53/14 Rev. “Revised Report”, paragraphs 59 to 62):

- (a) “Use of disease resistance characteristics”, presented by an expert from the European Union.
- (b) “Evaluation of disease resistance in vegetable varieties according to UPOV standards. A focus on the Italian activities”, presented by an expert from Italy.
- (c) “Disease resistance in DUS”, presented by experts from France and the Netherlands.
- (d) “Harmonization of resistance tests to diseases for DUS testing: Harmores 3”, presented by an expert from France (on behalf of the working group).
- (e) “Disease resistance in vegetables: What does the European industry do in terms of claims?”, presented by an expert from the European Seed Association (ESA).
- (f) “ISF Working Group Disease resistance terminology”, presented by an expert from the International Seed Federation (ISF).

10. The TWV agreed that the current guidance provided in UPOV documents in relation to the use of disease resistance characteristics in Test Guidelines and in DUS examination was clear and sufficient for the time being. The TWV noted that in the scope of disease resistance characteristics, when using QN as type of expression, more than 3 states could be used.

11. The TWV agreed that disease resistance is an important breeding goal therefore cooperation among all stakeholders would be beneficial to ensure the development of DUS examination and Test Guidelines in line with the expectation of the users of the system.

12. The TWV agreed that disease resistance characteristics are important for DUS examination and in particular for distinctness, grouping and variety descriptions. The TWV therefore agreed that it is the responsibility of each TWP to update TGs when and if relevant, and take the appropriate time to include and/or update characteristics with an approved methodology for the assessment of the characteristics (e.g. type of expression QN/QL, common agreed terminology) and for the validated disease test protocol to be followed. In order to achieve this goal the TWV agreed that all stakeholders (i.e. DUS experts, pathologists, breeders) should be consulted/involved and sufficient time should be given to ensure that all DUS examination offices agreed before adding new disease resistance characteristics or a new disease test protocol.

Access to plant material for the purpose of management of variety collections and DUS examination

13. The TWF, at its fiftieth session, held in Budapest, Hungary, from June 24 to 28, 2019, received a presentation on “Canada’s experience in accessing plant material for DUS testing” by an expert from Canada as presented in document TWF/50/9. The TWF also received presentations on “China’s practice in accessing to plant materials for variety collection management and DUS test” by an expert from China and “Access to plant material for variety testing purposes: Status quo, problems and possible solutions” by an expert from Italy. Copies of these presentations were published as an addendum to document TWF/50/9. The TWF also received oral reports by experts from the European Union and Spain on the situation in relation to access to plant material for the purpose of management of variety collections and DUS examination (see document TWF/50/13 “Report”, paragraphs 40 to 44).

14. The TWF noted the following difficulties and challenges in relation to access to plant material for the purpose of management of variety collection and DUS examination:

- Plant health (risk to introduce pathogens in a variety collection)
- Importing plant material (phytosanitary measures)
- Lack of understanding from breeders on the merit to submit material of their varieties for reference purposes
- Lack of willingness of breeders to make their material available in cases where the DUS test takes place at the premises of another breeder
- Breeders requesting a guarantee about the use of the plant material provided
- Building, maintaining and renewing a collection of living plant material
- Often no access to plant material on the market, circulation of material in closed networks (club varieties)
- Limited use of technologies that could help: DNA, image analysis in limiting the necessity to transfer plant material
- Increasing number of protected and non protected varieties to be included. In the fruit sector, varieties are often developed worldwide and are adapted to grow in a wide range of environments
- Difficulty to access information (in particular when varieties are registered with different denominations or synonyms in national catalogues)

15. The TWF recalled the guidance provided in document TGP/4 “Constitution and maintenance of variety collections”, and in particular the importance of cooperation, as reproduced below:

[...] 3.1.2.2 Sources of living plant material

3.1.2.2.4 Breeders are an important source of living plant material and cooperation with breeders is encouraged (see Section 3.2.3). In particular, for protected varieties, breeders have a particular incentive to maintain their varieties since lack of maintenance of a variety may lead to the cancellation of the plant breeder’s right. [...]

3.2.2 Cooperation between authorities

3.2.2.1 For the establishment of variety collections, the availability of information on varieties of common knowledge is a key requirement. Exchange of information between authorities, breeders, botanic gardens, gene banks, and any other possible source of information is very important to define the list of varieties to be included in the collection (see Section 2.2). [...]

3.2.3 Cooperation with breeders

3.2.3.1 Cooperation is a means by which authorities can increase the efficiency of the establishment and maintenance of variety collections, consequently strengthening plant breeders' rights.

3.2.3.2 Breeders are particularly encouraged to cooperate in the provision of living plant material, on the basis that the inclusion of varieties in the growing tests and other trials is important for the quality of the examination of distinctness and in consequence the quality of protection for a variety.

3.2.3.3 Cooperation with breeders can involve, for example, breeders or breeders' associations maintaining a collection of living plant material which is made available to the testing authority as required."

16. The TWF agreed that breeders are an important source of information and living plant material and that it was in the interest of the breeders to cooperate in the constitution and maintenance of variety collections. The TWF noted the comment by a representative from CIOPORA on the importance to protect breeders' interests when plant material is provided by breeders. They further commented on the risk perceived by breeders when examination offices performed breeding activities and how to ensure that the living collections were not used for breeding purposes. The TWF highlighted the need to have a high level of trust between PVP offices and breeders to ensure fruitful cooperation. The TWF noted that the European Union has adopted a policy on the use of plant material submitted for DUS testing purposes.

17. The TWF agreed to continue the discussion at its next session and invited the expert from Italy to prepare a document summarizing the issues faced by PVP offices and breeders, and to make proposals on how these issues might be addressed within UPOV. The TWF noted that experts from Canada, Chile, China, European Union, France, Germany, New Zealand, Spain and CIOPORA would help in preparing this document.

DUS examination of mutant varieties of apple

18. The TWF, at its fiftieth session, held in Budapest, Hungary, from June 24 to 28, 2019, considered document TWF/50/10 and received a presentation on "DUS examination of mutant varieties of apple" by an expert from the European Union. A copy of the presentation is provided in the Annex to document TWF/50/10 Rev. (see document TWF/50/13 "Report", paragraphs 45 to 49).

19. The TWF noted the developments since the forty-ninth session of the TWF in 2018. The TWF noted that, without an appropriate variety collection for the DUS examination, the accuracy of the DUS report might be affected, which could inhibit cooperation and exchange of DUS reports between PVP Offices for apple mutant varieties.

20. The TWF was informed by the European Union that discussions were being held in the European Union on the possibility to observe applications for mutant varieties of apple in a different location because of the strong influence of the environment on the fruit color. It was observed that some varieties were bred in an environment quite different from the conditions under which the DUS testing was conducted in a centralized testing system. The TWF agreed that the current UPOV guidance provided for fruit crops explained that tests were normally conducted at a single location and it might not be appropriate to deviate from this guidance in particular cases (e.g. Gala mutant varieties).

21. The TWF noted the comment made by the expert from the European Union that measurements for characteristics (instead of visual observations) had proven to be useful in court cases based on DUS reports. The TWF agreed that image analysis could be considered for the observation of color but recalled that statistical analyses were not commonly used in the DUS examination for fruit crops.

22. The TWF invited the expert from the European Union make a presentation at its fifty-first session on further developments in the European Union on DUS examination of mutant varieties of apple.

Experiences with defining trees, shrubs and vines

23. The TWO, at its fifty-first session, held in Christchurch, New Zealand, from February 18 to 22, 2019, received a presentation on the “Classification: Tree/Vine versus Shrub” by an expert from the European Union. A copy of the presentation is provided in document TWO/51/9 “Experiences with defining trees, shrubs and vines” (see document TWO/51/12 “Report”, paragraphs 64 to 68).

24. The TWO received a presentation on “Classification of Trees and Vines in Australia” by an expert from Australia. A copy of the presentation is provided as an Addendum to document TWO/51/9.

25. The TWO noted there were different interpretations among UPOV members of the notion of trees and vines for the purposes of the provisions of novelty and the duration of protection.

26. The TWO agreed to propose to invite authorities to make available the list of genera and species considered as trees and vines through UPOV PRISMA. The TWO agreed to invite authorities to report to the TWO at its following session on information provided to UPOV PRISMA.

27. The TWO agreed there were certain genera and species for which a decision on whether a variety should be considered as tree or vine could not be generalized. The TWO agreed to request authorities to provide information on the genera and species they considered should be treated on a case-by-case basis.

Defining “growing cycle” for ornamental species

28. The TWO, at its fifty-first session, held in Christchurch, New Zealand, from February 18 to 22, 2019, considered document TWO/51/10 “Defining “growing cycle” for ornamental species” (see document TWO/51/12 “Report”, paragraphs 62 and 63).

29. The TWO recalled that the TC had agreed to include a standard sentence in Test Guidelines to explain that “The testing of a variety may be concluded when the competent authority can determine with certainty the outcome of the test”. The TWO agreed there was no need to distinguish between “growing cycle” and “testing cycle” for the examination of ornamental varieties at this stage.

Experiences with characteristics assessed on the basis of bulk samples

30. The TWO, at its fifty-first session, held in Christchurch, New Zealand, from February 18 to 22, 2019, received a presentation on “Experience with Bulk Sampling” by an expert from the United Kingdom. A copy of the presentation is provided in document TWO/51/8 “Experience with bulk sampling” (see document TWO/51/12 “Report”, paragraph 69).

Experience with the RHS Colour Chart and possible future addition of colors

31. The TWO, at its fifty-first session, held in Christchurch, New Zealand, from February 18 to 22, 2019, received a presentation on an “Update on possible additions of colors to future RHS Colour Chart edition” by an expert from the United Kingdom. A copy of the presentation is provided in document TWO/51/4 (see document TWO/51/12 “Report”, paragraph 75).

Experience with taxonomic databases

32. The TWO, at its fifty-first session, held in Christchurch, New Zealand, from February 18 to 22, 2019, received a presentation on “Experience with taxonomic databases” by an expert from the United Kingdom. A copy of the presentation is provided in document TWO/51/5 (see document TWO/51/12 “Report”, paragraphs 76 to 78).

33. The TWO received a presentation on “Experience with taxonomic databases in Australia” by an expert from Australia. A copy of the presentation would be provided as an Addendum to document TWO/51/5.

34. The TWO noted the importance of the GRIN database as a source of taxonomic information for UPOV members and as the primary source of taxonomic information for the UPOV Code System.

Inconsistencies between TQ information and plant material submitted for trial

35. The TWO, at its fifty-first session, held in Christchurch, New Zealand, from February 18 to 22, 2019, received a presentation on “Inconsistencies between TQ information and plant material submitted for DUS trial in the European Union PBR system” by an expert from the European Union. A copy of the presentation is provided in document TWO/51/6 (see document TWO/51/12 “Report”, paragraphs 79).

Experiences with new types and species

36. The TWO, at its fifty-first session, held in Christchurch, New Zealand, from February 18 to 22, 2019, received a presentation by an expert from China on “A proposal for new Test Guidelines for Magnolia,” a copy of which was included in document TWO/51/3 “Reports on Developments in Plant Variety Protection from Members and Observers” (see document TWO/51/12 “Report”, paragraph 89).

37. The TWV, at its fifty-third session, held in Seoul, Republic of Korea, from May 20 to 24, 2019, received a presentation on Water spinach (*Ipomoea aquatica*) by an expert from China. A copy of the presentation is provided in document TWV/53/11 (see document TWV/53/14 Rev. “Revised Report”, paragraphs 65 and 66).

38. The TWV welcomed the work done to develop a national Test Guidelines for Water spinach (*Ipomoea aquatica*) on the basis of the guidance provided in TGP/7 and agreed to invite experts from China and any other members to report on further developments on the number of applications and the breeding activities to be able to consider the development of a UPOV Test Guidelines for the future, if relevant.

39. The TWA, at its forty-eighth session, held in Montevideo, Uruguay, from September 16 to 20, 2019, considered document TWA/48/6 and received a presentation on “Experiences with new types and species of agricultural crops in the Czech Republic”. A copy of the presentation is provided in the Annex to document TWA/48/6 (see document TWA/48/9 “Report”, paragraph 121 to 123).

40. The TWA agreed that the information provided by the Czech Republic on how deal with new types and species was a useful guide for new and experienced members. The TWA noted the experience of the Czech Republic with different modalities of cooperation in DUS examination, such as the takeover of test reports, commissioning examination by another authority and cooperation with breeders, in addition to performing the examination directly.

41. The TWA received an oral report by an expert from Argentina about applications for the following crops filed for the first time in Argentina:

- *Brassica rapa* L. subsp. *rapa*
- *Ononis natrix* L.
- *Plantago lanceolata* L.

New issues arising for DUS examination

42. The TWV, at its fifty-third session, held in Seoul, Republic of Korea, from May 20 to 24, 2019, considered the oral report by the representative of Crop Life International in relation the discussion which took place at the fifty-second session on “Aberrant phenotypes in *Brassica oleracea* var. *botrytis*” (see document TWV/52/20 report”, paragraph 52). It was reported by the representative of Crop Life International, after consultation with members of Crop Life International, that it was not an increasing issue and was not seen, for the time being, as a major problem in plant breeding programs globally. The TWV agreed not to continue further discussion on this item, while inviting experts from France and from observers to report on any developments in the future, if and when relevant (see document TWV/53/14 Rev. “Revised Report”, paragraphs 63 and 64).

43. The TWV noted the comment made by an expert from the Netherlands on the increasing use of vegetatively propagated varieties in normally seed-propagated species (e.g. pepper). The TWV recalled that, at its fiftieth session, held in Brno, Czech Republic, it had received a presentation by an expert from the Netherlands, on the same topic” (see document TWV/50/25 “Report”, paragraph 57). The TWV invited the expert from the Netherlands and other experts to report on latest developments in relation to this trend, and in particular to explain the potential challenges in the scope of DUS examination.

Matters relevant in DUS examination for the fruit sector

44. The TWF, at its fiftieth session, held in Budapest, Hungary, from June 24 to 28, 2019, considered the topic of “matters relevant in DUS examination in the fruit sector. No presentation was prepared for consideration at the session. However, the TWF agreed to discuss the following topics, under this agenda item, at its fifty-first session (see document TWF/50/13 “Report”, paragraph 50):

- “Blueberry, new production techniques and its possible influence on the expression of characteristics”, to be prepared by experts from Canada and New Zealand;
- “Raspberry CPVO project”, to be presented by an expert from Germany;
- “Strawberry ring test”, to be presented by an expert from the European Union;
- “Test on the use of RHS Colour Chart in apricot DUS examination in New Zealand”, to be presented by an expert from New Zealand (see paragraph 24 of this document).

Discussion groups to discuss “New technology used in DUS examination”

45. The TWA, at its forty-eighth session, held in Montevideo, Uruguay, from September 16 to 20, 2019, noted that discussion groups were formed to discuss “Cooperation in DUS examination” and “Molecular techniques in DUS examination” at its forty-eight session. The TWA agreed that discussion groups provided a useful opportunity for the exchange of experiences among participants and agreed to propose that discussion groups were formed to discuss “New technology used in DUS examination” at its forty-ninth session.

46. *The TC is invited to note developments in the TWPs concerning:*

- (i) Use of Disease resistance characteristics;*
- (ii) Access to plant material for the purpose of management of variety collections and DUS examination;*
- (iii) DUS examination of mutant varieties of apple;*
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