

Technical Committee**TC/58/3****Fifty-Eighth Session
Geneva, October 24 and 25, 2022****Original:** English
Date: October 5, 2022

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 compiles matters that are not expressly covered by specific agenda items arising from the 2022 sessions of the Technical Working Party for Vegetables (TWV)¹, Technical Working Party for Agricultural Crops (TWA)², Technical Working Party for Ornamental Plants and Forest Trees (TWO)³, Technical Working Party for Fruit Crops (TWF)⁴ and Technical Working Party on Testing Methods and Techniques (TWM).

2. Matters arising from the Technical Working Parties (TWPs) 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) Information required to enhance the use of existing DUS test reports;
- (ii) DUS examination of mutant varieties of apple;
- (iii) Access to plant material for the purpose of management of variety collections and DUS examination;
- (iv) Use of disease resistance characteristics;
- (v) Disease resistance in ornamental crops;
- (vi) New issues arising for DUS examination;
- (vii) Experiences with new types and species;
- (viii) Examining hybrid varieties;
- (ix) New technologies in DUS examination;
- (x) Big data platform for DUS examination;
- (xi) The assessment of color in fruit crops; and
- (xii) Phenotyping and image analysis

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

¹ at its fifty-sixth session, held via electronic means, from April 18 to 22, 2022.

² at its fifty-first session, held in Cambridge, United Kingdom, from May 23 to 27, 2022.

³ at its fifty-fourth session, hosted by Germany and held via electronic means, from June 13 to 17, 2022.

⁴ at its fifty-third session, held via electronic means, from July 11 to 15, 2022

TWM: Technical Working Party on Testing Methods and Techniques
 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:

EXECUTIVE SUMMARY.....	1
MATTERS FOR INFORMATION AND FOR A POSSIBLE DECISION TO BE TAKEN BY THE TECHNICAL COMMITTEE (TC)	2
MATTERS FOR INFORMATION	2
Information required to enhance the use of existing DUS test reports.....	2
DUS examination of mutant varieties of apple.....	2
Access to plant material for the purpose of management of variety collections and DUS examination.....	3
Use of disease resistance characteristics.....	3
Disease resistance in ornamental crops.....	3
New issues arising for DUS examination.....	3
Experiences with new types and species	3
Examining hybrid varieties.....	4
New technologies in DUS examination.....	4
Big data platform for DUS examination	4
The assessment of color in fruit crops.....	4
Phenotyping and image analysis.....	4

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-eight session.

MATTERS FOR INFORMATION

Information required to enhance the use of existing DUS test reports

7. The TWF considered document TWF/53/6 presented by an expert from New Zealand (see document TWF/53/14 "Report", paragraphs 61 to 64).

8. The TWF considered the information to be provided in a UPOV variety description to further promote the exchange and takeover of DUS test reports. The TWF agreed that information should always be provided in Section 16 "Similar Varieties and Differences from These Varieties" to clarify the existence or not of similar varieties.

9. The TWF noted the different possibilities to provide information in Section 16, including to list one or several varieties considered as most similar; and listing only one or multiple characteristics per variety providing distinctness. The TWF agreed that it should always be indicated when no similar varieties had been identified.

10. The TWF agreed that discussions should be continued and invited the expert from New Zealand with support of the experts from Australia, Canada, European Union, France, Germany and Italy to develop a proposal for guidance on how to complete Section 16 of the UPOV variety description.

DUS examination of mutant varieties of apple

11. The TWF received a presentation on "Apple mutants and disclosure of Parentage" from an expert from Canada. A copy of the presentation is provided in document TWF/53/10 (see document TWF/53/14 "Report", paragraphs 53 to 55).

12. The TWF considered whether to create a common database for mutant varieties of apple to be made available on the UPOV website. The TWF noted the reports from Australia, Brazil and Canada that there could be limitations to disclosing the parentage of candidate varieties in their countries. The TWF agreed that variety information would have value for DUS examination in case the parentage was also provided.

13. The TWF agreed to invite the European Union to review the previous practice of collecting information on applications filed for the protection of mutant varieties of apple and report the outcome at the next session. The TWF agreed that the information collected should only be shared among authorities and not to be made publicly available.

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

14. The TWF received a presentation on "Access to plant material for the purpose of management of variety collections and DUS examination" by an expert from the European Union. A copy of the presentation and a model letter for requesting plant material are provided in document TWF/53/11 (see document TWF/53/14 "Report", paragraphs 56 to 57).

15. The TWF agreed to invite the European Union with the support of Canada, France, Germany, Italy and New Zealand to draft a list of elements to be included in requests for submission of plant material of the candidate variety and for varieties of common knowledge for DUS examination. The TWF agreed that the draft elements may be developed for a future Technical Guidance document. The TWF agreed to invite the European Union to report developments at its fifty-fourth session.

Use of disease resistance characteristics

16. The TWV received a presentation on "Harmorescoll - Towards a harmonized collection of reference material for DUS resistance tests" by an expert from France. A copy of the presentation is provided in document TWV/56/6 Corr. (see document TWV/56/22 "Report", paragraph 74).

Disease resistance in ornamental crops

17. The TWO received a presentation on "Resistance to *Puccinia horiana* in Chrysanthemum - Progress report concerning a potential new DUS characteristic" by an expert from the Netherlands. A copy of the presentation is provided in document TWO/54/4. The TWO noted work reported and agreed to invite the expert from the Netherlands to report developments at its fifty-fifth session (see document TWO/54/6 "Report", paragraphs 37 to 39).

18. The TWO noted that resistance to *P. horiana* is a current breeding objective and that it was not yet used in DUS examination. The TWO noted the invitation for further participation in the development of the methodology to assess the characteristic.

19. The TWO noted the particular requirements for maintenance of the isolates of *P. horiana* and agreed that further consideration would be required before introducing such characteristic in the Test Guidelines for Chrysanthemum.

New issues arising for DUS examination

20. The TWV received the following presentations made by experts from the European Union, copies of which are provided in document TWV/56/14 (paragraph 75):

- "Characteristics with one single observation in multi-annual testing";
- "Acceptance of final reports based on variety descriptions with the same notes";
- "Issue of reporting of the absence of similar varieties mentioned under chapter 16 of variety descriptions".

Experiences with new types and species

21. The TWO received a report from an expert from the European Union on applications received for ornamental varieties of *Colocasia esculenta* (L.) Schott. The TWO noted that the Test Guidelines for Colocasia

(document TG/255/1) was not developed for ornamental varieties and noted there was no experience among participants in DUS examination of the crop. (paragraph 63)

Examining hybrid varieties

22. The TWA received a presentation on “Examining Wheat Hybrids” by an expert from the United Kingdom. A copy of the presentation is provided in document TWA/51/10. The TWA agreed that there was not enough experience with DUS examination of wheat hybrids produced through different methods of propagation to consider amending uniformity standards in the Test Guidelines (see document TWA/51/11 “Report”, paragraph 40).

New technologies in DUS examination

23. The TWA received a presentation on “Estimation of plant length in winter wheat by drone imaging” by an expert from Denmark. A copy of the presentation is provided in document TWA/51/6. The TWA noted the work reported and agreed to invite the expert from Denmark to report developments at its fifty-second session (see document TWA/51/11 “Report”, paragraph 38).

Big data platform for DUS examination

24. The TWA received a presentation on “Big Data Platform for DUS Examination” by an expert from China. A copy of the presentation is provided in document TWA/51/7. The TWA noted the work reported agreed to invite the expert from China to report developments at its fifty-second session (see document TWA/51/11 “Report”, paragraph 39).

The assessment of color in fruit crops

25. The TWF received a presentation on “The Assessment of Color in Fruit Crops: A Different Approach?” from an expert from New Zealand. A copy of the presentation is provided in document TWF/53/5 (see document TWF/53/14 “Report”, paragraphs 58 to 60).

26. The TWF noted that RHS Colour Charts were being considered in New Zealand for the assessment of color in fruit crops. The TWF noted a range of challenges to assessing color in fruit crops and agreed that the use of color charts could be considered for variety descriptions and in support of observations.

27. The TWF agreed to include an agenda item and invite presentations on alternative methods for the assessment of color in fruit crops at its Fifty-Fourth session.

Phenotyping and image analysis

28. The TWM received a presentation from Mr. Woo Gun Shin (Republic of Korea) on “Image Analysis in Plant Variety Testing”, a copy of which is reproduced in document TWM/1/4 (see document TWM/1/26 “Report”, paragraphs 61 to 68).

29. Clarifications were provided on the conditions for image correction indoor and outdoor and the use of software in flower color analysis.

30. The TWM received a presentation from Ms. Yanfang Liu (China) on “Color Imaging Analysis System”, a copy of which is reproduced in document TWM/1/5.

31. The TWM received a presentation from Mr. Yongxiang Tong (China) on “DUS characteristics image processor”, a copy of which is reproduced in document TWM/1/6.

32. The TWM received a presentation from Ms. Margaret Wallace (United Kingdom) on “UAV potential in DUS testing”, a copy of which is reproduced in document TWM/1/20.

33. The TWM received a presentation from Mr. Danilo Sarti (Maynooth University) on “Machine Learning InnoVar project”, a copy of which is reproduced in document TWM/1/25.

34. Clarifications were provided that the AMBARTI model could be used to comprehend and predict the behavior of DUS and VCU attributes considering interactions genotypes and environments for the characteristics including crop yield.

35. The TWM agreed to invite further developments on the assessment of color through phenotyping and image analysis to be presented at its second session.

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

- (i) Information required to enhance the use of existing DUS test reports;*
- (ii) DUS examination of mutant varieties of apple;*
- (iii) Access to plant material for the purpose of management of variety collections and DUS examination;*
- (iv) Use of disease resistance characteristics;*
- (v) Disease resistance in ornamental crops;*
- (vi) New issues arising for DUS examination;*
- (vii) Experiences with new types and species;*
- (viii) Examining hybrid varieties;*
- (ix) New technologies in DUS examination;*
- (x) Big data platform for DUS examination;*
- (xi) The assessment of color in fruit crops; and*
- (xii) Phenotyping and image analysis*

[End of document]