

Technical Working Party for Fruit Crops

TWF/52/10

Fifty-Second Session
Zhengzhou, China, July 12 to 16, 2021

Original: English
Date: July 16, 2021

REPORT

adopted by the Technical Working Party for Fruit Crops

Disclaimer: this document does not represent UPOV policies or guidance

1. The Technical Working Party for Fruit Crops (TWF) held its fifty-second session, hosted by China and organized by electronic means, from July 12 to 16, 2021. The list of participants is reproduced in Annex I to this report.
2. The session was opened by Mr. Chris Barnaby (New Zealand), Chairman of the TWF, who welcomed the participants and thanked China for hosting the TWF session.
3. The TWF was welcomed by Mr. Xinming Zhang, Division Director of PVP, Development Center of Science and Technology, Ministry of Agriculture and Rural Affairs. A copy of the presentation is provided in Annex II to this report.

Adoption of the agenda

4. The TWF adopted the agenda as reproduced in document TWF/52/1 Rev..

Short reports on developments in plant variety protection

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

5. The TWF noted the information on developments in plant variety protection from members and observers provided in document TWF/52/3 Prov. The TWF noted that reports submitted to the Office of the Union after June 29, 2021 and until July 16, 2021, would be included in the final version of document TWF/52/3.

(b) Reports on developments within UPOV

6. The TWF received a presentation from the Office of the Union on latest developments within UPOV, a copy of which is provided in document TWF/52/2.

Molecular Techniques

(a) Developments in UPOV

7. The TWF considered document TWP/5/7.

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

8. The TWF noted the papers presented at the nineteenth session of the BMT, held in 2020, as set out in document TWP/5/7, paragraph 12. The TWF noted that the BMT would hold its twentieth session jointly with the TWC, during the week of September 20, 2021. The TWF 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)

9. The TWF 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. The TWF 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

10. The TWF 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 document TWP/5/7, Annex I.

11. On Wednesday, July 14, 2021, the TWF held a discussion session to allow participants to exchange information on their work on biochemical and molecular techniques and explore areas for cooperation for Apple, Strawberry and Peach. The TWF agreed to invite the experts from the European Union and France to make presentations on the use of molecular techniques in DUS examination of apple varieties, at its fifty-third session.

Review of document UPOV/INF/17 “Guidelines for DNA-Profiling: Molecular Marker Selection and Database Construction (‘BMT Guidelines’)”

12. The TWF agreed a draft 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

13. The TWF 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. The TWF 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

14. The TWF 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. The TWF 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

15. The TWF 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

16. The TWF received a presentation on “Confidentiality & Ownership of Molecular Information” from the representative of CropLife International 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 (CIOPORA), 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 TWF/52/4.

17. The TWF noted that the matter of confidentiality and ownership of molecular information had not been considered in any detail in the fruit sector and agreed that further discussion was required. The TWF agreed to invite presentations from members and observers on this topic under the agenda item “Presentation on the use of molecular techniques in DUS examination” at its fifty-third session.

Development of guidance and information materials

18. The TWF considered documents TWP/5/1 and TWF/52/8.

Program for the development of relevant guidance and information materials

19. The TWF 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

20. The TWF considered document TWP/5/5.

Document UPOV/INF/16 “Exchangeable Software”

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

22. The TWF 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.

23. The TWF 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”.

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

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

25. The TWF 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.

26. The TWF 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, on the basis of the recommendation of the TWC at its thirty-ninth session, 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

27. The TWF noted that the information in documents UPOV/INF/16 and UPOV/INF/22 had been made available in a searchable format on the UPOV website (see:

https://www.upov.int/it_resources/en/exchangeable_software.html and https://www.upov.int/it_resources/en/index.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”

28. The TWF considered document TWP/5/14.

Testing facility and location

29. The TWF agreed to amend document TGP/5 Section 6, chapters “UPOV Report on Technical Examination” and “UPOV Variety Description”, as set out in document TWP/5/14, paragraph 5 and in the Annex, to read 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

30. The TWF 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, and whether alternative approaches to provide the desired information might be appropriate.

31. The TWF agreed with the TWV, TWO and TWA that the proposed additional information was not useful for individual DUS test reports and presented practical difficulties for reporting authorities.

32. The TWF agreed that authorities providing DUS test reports should provide information on the most similar variety, as far as possible, in accordance with guidance in the UPOV variety description (document TGP/5 Section 6). The TWF agreed to invite the expert from New Zealand to make a presentation at its fifty-third session, on what should be required as information to enhance the use of existing DUS test reports.

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

33. The TWF considered document TWP/5/10.

34. The TWF 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.

35. The TWF 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.

36. The TWF 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)

37. The TWF considered document TWP/5/11.

38. The TWF 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.

39. The TWF noted that evaluation versions of software for COYU Splines in both "R" and DUSTNT software would be released in 2021. The TWF noted the expression of interest by experts from China, Finland, France and the United Kingdom to review the COYU Splines software. The TWF noted the invitation for members to participate in a test campaign of the COYU Splines software in 2021.

40. The TWF 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

41. The TWF considered document TWP/5/6.

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

42. The TWF 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

43. The TWF 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.

Information and databases

(a) UPOV information databases

44. The TWF considered document TWP/5/4.

GENIE database and UPOV code system

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

46. The TWF noted that the GENIE database and UPOV Test Guidelines used the term “alternative” for botanical names other than the principal botanical name. The TWF agreed to propose that the term “other botanical names” was used in the GENIE database and Test Guidelines to harmonize how synonyms and other previously recognized botanical names were mentioned in UPOV documents.

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

47. The TWF agreed to amend 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

48. The TWF 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.

49. The TWF 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 Citrus

50. The TWF agreed to append the following information to UPOV code CITRU_AUM to create groups mandarins (1MA); and oranges (1OR), as follows:

- (a) Mandarins group: “1MA” (e.g. CITRU_AUM_1MA); and
- (b) Oranges group: “1OR” (e.g. CITRU_AUM_1OR)

51. The TWF agreed to amend the UPOV code CITRU_AUM, following the reclassification of *Citrus clementina* hort. ex Tanaka (UPOV code: CITRU_CLE) as a synonym of *Citrus aurantium* L. (UPOV code: CITRU_AUM), as set out in document TWP/5/4, Annex II.

52. The TWF agreed to propose the partial revision of the Test Guidelines for *Citrus* to move relevant botanical names from the “principle botanical names” box to the “alternative botanical names” box.

TWP checking

53. The TWF 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

54. The TWF 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

55. The TWF considered document TWP/5/2.

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

57. The TWF noted that members of the Union are invited to report to the TWPs on work concerning the development of databases containing morphological and/or molecular data.

58. The TWF noted that Canada, European Union, France, Japan and New Zealand published variety descriptions on their websites. The TWF agreed to invite members to provide information to the Office of the Union, by December 31, 2021, on how to access the variety descriptions published, such as the links to webpages with this information.

59. The TWF noted that information reported to the Office of the Union would be presented to the Technical Working Parties, at their sessions in 2022, in document "Variety Description Databases". The TWF agreed that, once information was available, the Office of the Union should be invited to check whether the information on webpages with variety descriptions could be made available on the UPOV website.

(c) UPOV PRISMA

60. The TWF considered document TWP/5/3 and noted the developments concerning UPOV PRISMA.

61. The TWF noted the report by an expert from New Zealand on a training session for UPOV PRISMA active and potential applicants, organized by the New Zealand PVR Office and the Office of the Union in 2020. It was noted that the Office of the Union remained available to organize similar sessions for any participating authorities in UPOV PRISMA, upon request.

62. The TWF noted the comment made by an expert from Canada on the usefulness of UPOV PRISMA as an online tool for their applicants to submit application data, especially in remote working conditions.

Experiences with new types and species

63. No new experiences with new types or species were reported under this agenda item.

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

64. The TWF considered document TWF/52/5 and received a presentation on "DUS Access to plant material for the purpose of management of variety collections and DUS examination - The CPVO policy" by an expert from the European Union. A copy of the presentation is provided in the Annex to document TWF/52/5.

65. The TWF agreed to invite the expert from the European Union, with the support of Brazil, Canada, France, Italy, Netherlands, New Zealand and Spain to draft a proposal for model letters/contracts to be used for the submission of plant material to the PVP Authority and/or DUS Examination Offices. This draft would be presented at the fifty-third session, as a basis for possible future possible revisions of UPOV Guidance (e.g. TGP/5, Section 11 "Examples of Policies and Contracts for Material Submitted by the Breeder") to help other UPOV members to facilitate access to plant material for the purpose of management of variety collections and DUS examination. The TWF recalled the list of key factors concerning access to plant material for breeders and PVP authorities, as listed in document TWF/52/5, paragraph 3 and agreed to ask the above group of experts to consider whether there was a need to review it.

DUS examination of mutant varieties of apple

66. The TWF considered document TWF/52/6 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/52/6.

67. The TWF agreed that the work done by the expert from the European Union, to collect information among UPOV members on applications under analysis and existing varieties for certain apple mutation groups was important and should be continued.

68. The TWF considered the potential confidentiality issue of disclosing the parentage of a protected variety when exchanging data among PVP Offices and/or making data publically available. The TWF agreed to invite the expert from Canada with the support of Australia, Brazil, European Union, France, Germany and Japan to identify potential confidentiality limitations and to share its findings with the TWF via a presentation at its fifty-third session. It was agreed by the TWF that until the information about confidentiality is clarified, the document collecting information among UPOV members, would not be made publically available.

69. The TWF agreed to invite the above group of experts to explore the possibility of appending information to UPOV codes to address the identification of variety groups in apple.

70. The TWF agreed to invite the above group of experts to consider how the information on applications under analysis and existing varieties for certain apple mutation groups should be made available, such as through the creation of a dedicated database, UPOV's PLUTO database, or posting information on the UPOV website.

Matters relevant in DUS examination for the fruit sector

71. The TWF received a presentation on the “Number of plants of reference variety”, by an expert from the European Union. A copy of the presentation is provided in the Annex to document TWF/52/7.

72. The TWF agreed to invite the expert from the European Union, with the support of Brazil, to draft a proposal on possible changes in document TGP/9/2 paragraph 5.5.5, to be presented at its fifty-third session.

Cooperation in examination

73. The TWF considered document TWP/5/9 and received a presentation from the Office of the Union on development of the “DUS Exchange Platform” and “DUS Arrangement Tool”, a copy of which was provided in document TWP/5/9 Add..

74. The TWF 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;

75. The TWF 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.

76. The TWF 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.

77. The TWF 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.

78. The TWF 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.

79. The TWF 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.

80. The TWF 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".

Increasing participation in the work of the TC and the TWPs

81. The TWF considered document TWP/5/12.

Participation at the TC and TWP meetings by electronic means

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

83. The TWF 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

84. The TWF 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 TWF	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"> - Opportunity to gather relevant experts - Will allow more opportunity to freely discuss, exchange and contribute - Only major outstanding issues could be brought to the main session, if relevant. Most of the technical issues could be solved in subgroup discussions - Difficulty to find suitable time could prevent equal opportunities to participate (time zones) - Discussions via electronic means may benefit from participation of experts that may not attend TWPs
(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"> - To investigate possibility to keep videos available on UPOV website to create a resource collection
(c) To offer the possibility to provide comments and questions on documents in advance of the meeting.	Supported	<ul style="list-style-type: none"> - For the Test Guidelines, comments in advance were seen as useful for the preparation, improving the process of discussion - The possibility to provide comments and questions on documents in advance should be kept in all cases (virtual and/or physical meetings) - Should not preclude discussing the topics at TWPs - Use of the web-based TG template should be encouraged for comments on Test Guidelines

		- Increasing the number of contributing members should be encouraged
(d) To organize electronic participation during the TWPs, using one of the following options, according to host facilities: (i) The host to provide the platform for virtual participants. (ii) The UPOV Office to provide the platform for virtual participants.	Partially supported	- Technology to be used (e.g. video-conferencing platform) should be standardized allowing wide participation of members - Invitations should continue to ask whether participants intend to participate in-person or electronically, in order to assess the need to set up appropriate equipment for the Host.
(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: (i) visits to DUS trials or related facilities; (ii) Pre-organized bilateral discussions/ meetings on cooperation; (iii) Sessions to facilitate discussion on DUS examination.	supported	No comment

Revision of Test Guidelines

85. The TWF considered document TWP/5/13.

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

87. The TWF noted the invitation to consider whether to revise the guidance in document TGP/7 "Development of Test Guidelines" concerning the relationship between asterisks in the Test Guidelines and TQ characteristics, and agreed no comments could be provided at this stage.

88. The TWF agreed with the proposals for partial revisions of the Test Guidelines for Peach, Japanese Plum, Kiwifruit and Prunus Rootstocks, as set out in document TWP/5/13, paragraph 17 and Annexes XIII to XVI.

Guidance for drafters of Test Guidelines

89. The TWF considered document TWP/5/8.

90. The TWF noted that the web-based TG Template (TG Template) and database of characteristics would be migrated to cloud servers by 2022, including an upgrade to new technologies in the infrastructure and a program to address issues reported by users and to enable the use of the TG Template for drafting individual authorities' test guidelines

91. The TWF 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 TG template.

92. The TWF noted that training on the TG template could be organized via electronic means upon experts' request.

Discussion on draft Test Guidelines

Apple (fruit varieties) (Revision) (Malus domestica Borkh.)

93. The subgroup discussed document TG/14/10(proj.4), presented by Mr. Erik Schulte (Germany), and agreed the following:

Cover page	reference to other TGs to read TG/163 and TG/192 (delete version)
4.2.4	to be deleted
Char. 1	to check whether to be indicated MG/VG
Char. 3	- to delete (*) - to check whether to reduce scale to 3 notes
Char. 5	growth stage to be indicated as 00
Char. 10	to be indicated as PQ
Char. 13	growth stage to be indicated as 75/77
Char. 14	- growth stage to be indicated as 75/77 - state 8 to read "long to very long"
Char. 15	- growth stage to be indicated as 75/77 - to add (c)
Char. 16	growth stage to be indicated as 75/77
Chars. 17 to 20	growth stage to be indicated as 60/65
Char. 19	- to move example variety "Devil Gala" from state 2 to state 3 - to have states from "absent or very weak" to "very strong"
Char. 21	- to read "Young fruit: relative area of over color" - growth stage to be indicated as 73/74
Chars. 22 to 47	growth stage to be indicated as 89
Char. 22	- to delete VG - to have states from "very low" to "very high"
Char. 27	state 2 to read "medium"
Chars. 34, 41	to add (f)
Chars. 45, 46	to check approach to present fruit color characteristics (are more characteristics needed?)
Char. 45	to add example variety for state "orange"
Char. 46	- to underline "Only varieties with..." - to check whether to read "...Flesh color: extent of secondary color"
Char. 47	- to underline "Only varieties with..." - to check whether state 1 to read "predominantly around the skin" - state 3 to read "other" - states 4 and 5 to be deleted
Char. 49	to add growth stage 87
Chars. 49, 50	to check whether to extend scales (to cover early and late ripening varieties)
Char. 50	to add explanation containing the following information: - The time of eating maturity is when the fruit is eating ripe and has reached its optimum of flavor and aroma. - eating maturity can be reached on trees or in cold chambers - possibility of optional use of starch test
Ad. 1	to be reviewed
Ad. 5	to correct spelling of "number"
Ad. 25	- should cover Chars. 25 and 26 - to update notes (char. 25 has only 9 notes, not 11)
Ad. 49	to be reviewed
9.	to check author of second reference
TQ 5.	to add Char. 45 (grouping char.)


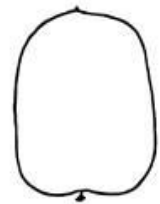

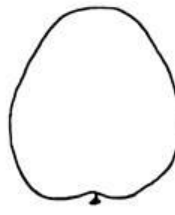
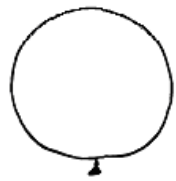

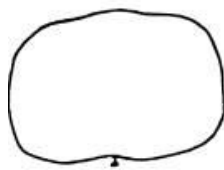
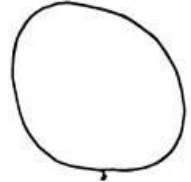
*Apricot (*Prunus armeniaca* L.) (Revision)

94. The subgroup discussed document TG/70/5(proj.5), presented by Mr. Zsolt Szani (Hungary), and agreed the following:


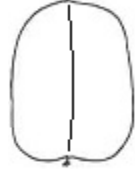
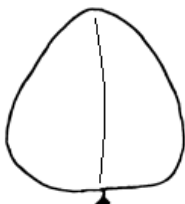
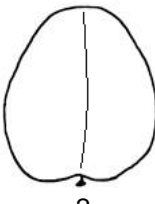
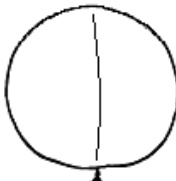

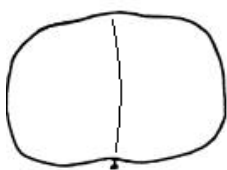
Cover page	to add Test Guidelines for Prunus Rootstock TG/187 under associated documents (see Chapter 1.)
2.2	to delete repetition of "The material is to be supplied in the form of"
Table of Chars.	to delete the following example varieties from all characteristics in which they are used: Alessandrino, A. Vecchioni, Boccuccia, Boccuccia Liscia, Canetta, Calirose, Cibo del Paradiso, Hâtif Colomer, Henderson, Ivonne Liverani, Patriarca Temprano, Precoce di Toscana, Rosa
Char. 1	to delete example variety "Polonais" from state 2
Char. 2	to delete example variety "Polonais" from state 5
Char. 5	to delete example variety "Polonais" from state 2
Char. 6	to delete example varieties "Moniquí, Roxana" from state 3
Char. 7	- to add example variety "Cristal" for state 2 - to delete example varieties "Samarkandskij rannij" from state 3 and "Roxana" from state 7
Char. 8	to add states 1, 2, and 9
Char. 9	- to correct spelling of example variety "Ceglédi Piroska" (capital P) - to add example varieties "Hargrand, Magyar kajszi" for state 6 - to add state 8 "broad to very broad" with example variety "Candela" - to add state "very broad" with example variety "Nadejda"
Char. 11	to add example variety "Ceglédi kedves" for state 2
Char. 13	to delete example variety "Polonais" from state 3
Char. 14	- to delete example variety "Ivonne Liverani" from state 7 - to add state 9 "very long"
Char. 15	to delete example varieties "Rakovszky" and "San Francesco" from state 4
Char. 16	- to delete example variety "Nonno" from state 3 - to add example variety "Polonais" to state 5
Char. 18	- to add example variety "Csic Cebas Mirloblanco" to state 1 - to add example variety "Pricia" to state 2 - to delete example variety "Moniquí" from state 3 - to delete example variety "Skopska Krupna" from state 7
Char. 19	to add states 1, 2, 8, and 9
Char. 21	- to add states 2 and 9 - to delete example variety "Cibo del Paradiso" from state 3
Char. 22	to delete example variety "Cafona" from state 2
Char. 23	- to delete example variety "Bulida" from state 2 - to delete example variety "Pisana" from state 3
Char. 24	to add example variety "Somo" to state 2
Char. 25	to delete example variety "Canetta" from state 1
Char. 29	- to add MG - to have states from "very low" to "very high" - to delete example variety "Tengeribarack C. 1426" from state 1
Char. 31	to delete example varieties "Supergold, Viceroy" from state 4
Char. 32	- to delete example variety "Polonais" from state 5 - to delete example varieties from states 1 and 2 - to add state 9 "very tall"
Char. 33	- to delete example varieties from states 1 and 2 - to add states 8 "broad to very broad" and 9 "very broad"
Char. 34	- to delete example varieties from states 1 and 2 - to add states 8 "broad to very broad" and 9 "very broad"
Char. 35	- to add example variety "Larclyd" to state 1 - to add example variety "Ceglédi arany" to state 2
Char. 37	to delete example variety "Polonais" from state 1
Char. 40	to delete example variety "Luizet" from state 2
Char. 41	to read "Fruit: shape of pistil end in ventral view"
Char. 46	to delete example variety "Portici" from state 5
Char. 48	to add states 1 "very light" and 2 "very light to light"

Char. 49	<ul style="list-style-type: none"> - state 2 to read "very small to small" - to delete example variety "Yerevani" from state 1 - to add example variety "Bayoto" for state 2
Char. 51	<ul style="list-style-type: none"> - to invert order of "whitish green" and "yellowish white" - to delete example variety "Cibo del Paradiso" from state 1 - to delete example variety "Yerevani" from state 4
Char. 53	<ul style="list-style-type: none"> - to add example variety "Harmat" for state 1 - to add example variety "Samarkandskij rannij" for state 2 - to delete example variety "Alessandrino" from state 3 - to add example variety "MK 132" for state 4 - to delete example variety "San Castrese" from state 5 - to add example variety "Lunafull" for state 6 - to add example varieties "Congat, Fardao" for state 8 - to replace current example varieties with "Farclo, Priboto" for state 9
Char. 55	<ul style="list-style-type: none"> - to delete example variety "Hargrand" from state 1 - to delete example variety "Nonno" from state 2 - to delete example variety "Precoce di Toscana" from state 5
Char. 56	- to delete example variety "Monaco Bello" from state 2
Char. 57	<ul style="list-style-type: none"> - to delete (*) - to delete example variety "Orange Red" from state 1 - to delete example variety "Prevete" from state 3
Char. 58	<ul style="list-style-type: none"> - to delete example variety "Boccuccia Liscia" from state 7 - to delete example variety "Skromnyj" from state 9
Char. 59	<ul style="list-style-type: none"> - to delete example varieties "Patriarca Temprano" and "Samarkandskij rannij" from state 1 - to delete example varieties "Hâtif Colomer" and "Monaco Bello" from state 3 - to delete example variety "Polonais" und "Samarkandskij rannij" from state 5
Ad. 3	to read "Observations should be made on the number of lateral branches and shoots, excluding spurs."
Ad. 29	to be deleted

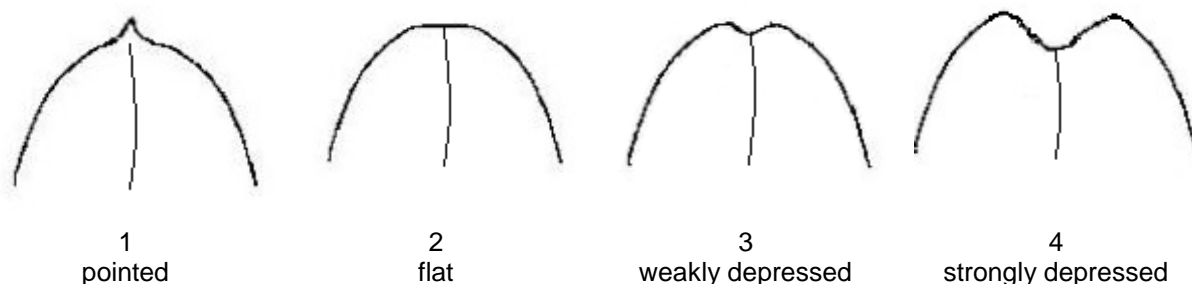
Ad. 30	to amend grid as follows
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		← broadest part →		
		below middle	at middle	above middle
relative width				
narrow			 6 elliptic	
medium			 5 oblong	
	 1 triangular	 2 ovate	 4 circular	 8 obovate
broad			 3 oblate	 7 oblique rhombic

Ad. 31	to amend grid as follows
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		← broadest part →		
		below middle	at middle	above middle
relative width				
narrow			 6 elliptic	
medium			 5 oblong	
	 1 triangular	 2 ovate	 4 circular	 7 obovate
broad			 3 oblate	

Ad. 41	to amend illustrations as follows
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Ad. 47	to read "The over color ..."
8.3	- to delete comma after "Ungarische Beste" - to add "Gönci magyar kajsz" as synonym for "Magyar kajsz" - to delete blank line
9.	to review ordering (alphabetical order: Beketovskaya – Boček)

Guava (Psidium guajava L.; Psidium cattleianum Sabine var. littorale (Raddi) Fosberg) (Revision)

95. The TWF noted that the discussion of the draft Test Guidelines for Guava had been withdrawn from the agenda due to unavailability of the Leading Expert, Ms. Ling Gao (China).

Grapevine (Vitis L.) (Revision)

96. The subgroup discussed document TG/50/10(proj.4), presented by Mr. Luca Aggio (Italy) and Mr. Roberto Carraro (Italy), and agreed the following:

Char. 1	to add the following example varieties: - state 4: "Rkatsiteli" - state 6: "Red globe" - state 8: "King husainy"
Char. 3	to add the following example varieties: - state 2: "Ansonica" - state 8: "Clairette"
Char. 5	to check whether to extend scale to 9 states
Char. 7	to add example variety "Müller-Thurgau" for state 2
Char. 8	to check whether to read "Young leaf: density of erect hairs between ..."
Char. 15	state 1 to read "absent or very sparse"
Char. 17	- to check whether to add example varieties for states 10 and 11 or delete states - to check whether to use a linear scale (state "medium" in the middle)
Char. 19	to have 9 states with the following example varieties: - state 1: "Du Lot, Kyoho" - state 2: "Riesling italico" - state 3: "Chasselas blanc, Crimson seedless" - state 4: "Schiava grossa" - state 5: "Argentina, Müller-Thurgau" - state 6: "Semillon" - state 7: "Merlot" - state 8: to check whether to add example variety - state 9: "Alvarelaho, Gewürztraminer"
Char. 21	to check whether to extend the scales to 9 states
Char. 22	to read " <u>Only varieties with Mature leaf: number of lobes: more than one:</u> Mature leaf: arrangement of lobes of upper lateral sinuses"
Char. 24	to check whether to extend scale to 9 states
Char. 25	to check whether to extend scale to 9 states
Char. 27	to extend scale to 9 states
Char. 28	- to delete example variety "Kyoho" from state 1 - to underline "prostrate"

Char. 29	to underline "erect"
Char. 32	to have 9 states with the following example varieties: - state 1: 161-49 Couderc - state 2: Sylvaner gruen - state 3: Riesling - state 4: Barbera - state 5: Garnacha tinta - state 6: Muscat of Alexandria - state 7: Cardinal, Red globe - state 8: Regal seedless - state 9: Sultanina
Char. 33	to add the following example varieties: - state 2: Supernova - state 8: Carignan
Char. 34	to extend scale to 9 states
Char. 35	to have 9 states with the following example varieties and to check whether to add a state 10: - state 1: Korinthiaki - state 2: Termarina - state 3: Flame seedless, Riesling, Sultanina - state 4: Cabernet franc - state 5: Portugieser, Sugraone - state 6: Perlon - state 7: Muscat d'Alexandria, Red globe - state 8: Autumn royal seedless - state 9: Alphonse lavallée, Kyoho
Char. 37	state "present" to have note 9
Char. 38	- to add "yellow pink" as state 3 with example variety "Sauvitage" and renumber following states - to check wording of state 8 "blue black"
Char. 39	to extend scale to 5 states ("absent or very weak, weak, medium, strong, very strong")
Char. 40	state 2 to read "medium"
Char. 41	to check whether to include more flavours (Candy and muscat-foxy) and provide explanation how to distinguish flavours
8.4	- to add the following varieties: Ansonica, B King husainy, B Perlon, N Riesling italico, B Rkatsiteli, B Sauvitage, Rs Schiava grossa, N Termarina, N - to move "Gloire de Montpellier" and "Du Lot" (alphabetical order)
TQ 5	to add Char. 33 (grouping char.)
TQ 7.3	to add numbering 7.3.1 and 7.3.2

Hazelnut (Corylus avellana L.; Corylus colurna L.) (Revision)

97. The subgroup discussed document TG/71/4(proj.2), presented by Mr. Flavio Roberto de Salvador (Italy), and agreed the following:

General	to check coverage of the TG
2.2	to read "The material is to be supplied in the form of plants on own roots. ..."
4.2.2	to add uniformity standards (relevant ASW option; 5 plants no off-types allowed)
Table of Chars.	to indicate all notes for QN characteristics with abbreviated QN scale (all notes from 1 to 9 or 1 to 5)
Char. 5	to be deleted
Char. 7	to have states "sparse", "medium", "dense"
Char. 9	to read "Bud: color"

Char. 11	- to be indicated as PQ - to check whether to add state “red” (if applicable to fruit varieties) with possible example variety “Comun”
Char. 12	to check whether to add state “pale yellow”
Char./Ad. 13	to be revised
Char. 17	- to check whether to add illustration(s) - to check whether to reduce scale
Chars. 20, 21	to clearly illustrate difference between both characteristics with illustrations (current Ad. 20 looks like serration, add illustrations also for Char. 21 (Ad. 21))
Char. 26	to use wording of adopted version TG/71/3)
Char. 28	- to be checked (see TGP/14) - to check whether to split in two chars (lateral and ventral view)
Char. 36	to read “Nut: size of basal scar related to nut size”
Char. 39	- to check whether to add state “flat globular” - to check wording of states and illustrations (see Ad. 39 and Char. 28)
Char. 42	to be deleted
Char. 46	to read “Kernel: inner cavity”
Char. 49	to check whether to be moved after Char. 52
Char. 50	to be deleted (duplication of Char. 42)
8.1	to check whether to replace photos with drawings in several explanations as drawings might be more clear
Ad. 20	to be checked (more serration than indentation?) (improve photos)
Ad. 28	to check whether to rotate pictures by 180°
Ad. 29	to improve illustration for state “rectangular”
Ad. 36	to change illustrations according to the change of the characteristic name
8.2	to only keep the growth stages in this chapter and move other explanations to the relevant place (explanations covering several or individual characteristics)

Mulberry (Morus L.)

98. The subgroup discussed document TG/MORUS(proj.3), presented by Mr. Yosuke Abe (Japan), and agreed the following:

Cover page (alternative names)	to replace “Maulbeerbaum” by “Maulbeere”
4.1.4	number of plants or parts of plants to be examined to be indicated as 3 for varieties resulting from crossing and varieties resulting from mutation in one single paragraph
5.3	to add (*) to all grouping
Char. 2	to add (*)
Chars. 3 to 8	- to read “Current year’s shoot: ...”
Char. 3	- to check whether to add more example varieties - to be indicated as VG
Char. 4	to be indicated as VG
Char. 5	- to be indicated as MG/MS/VG - to check whether to add more example varieties
Char. 6	to be deleted
Char. 8	to be indicated as MG/MS/VG
Char. 10	states to read “broad triangular, medium triangular, narrow triangular, ovate”
Char. 11	“light grey” to be the last state
Char. 12	to add (*) (grouping char.) - to check whether to add example varieties for states 2 and 5 - to delete (b)
Char. 13	to delete (b)
Char. 14	- to be indicated as MG/MS/VG - to check whether to add example varieties for even states
Char. 15	- to be indicated as MG/MS/VG - to check whether to add example varieties for even states

Char. 16	- to read "Leaf blade: ratio length/width" - to be indicated as MG/MS/VG - to check whether to add example varieties for states 1 and 3
Char. 17	to be indicated as MG/MS/VG
Char. 20	- to check whether to be deleted or add more example varieties - if kept, to add illustrations
Char. 23	- to check whether to read "Leaf blade: margin"
Char. 26	to add (*)
Char. 28	- to be indicated as MG/MS/VG - to check whether to add more example varieties
Char. 30	to add (*) (grouping char.)
Char. 31	to correct spelling of „inflorescence“
Char. 32	- to add (*) - to check whether to add more states
Chars. 33, 34	to be indicated as MG/MS/VG
Char. 35	- to be indicated as MG/MS/VG - to add example varieties
Char. 36	- to add example variety for state 1 - to be indicated as MG/MS - to check whether to be deleted (covered by size?)
Char. 37	to add (*) (grouping char.)
Char. 38	to be indicated as MG/MS/VG
Chars. 40, 41	to check whether to add example varieties for even states
Char. 41	- to add (*) - to add explanation
Chars. 42, 43	- to check whether to add example varieties - to add explanation
8.1 (d)	to read "Observations on the infructescence should be made at the time of full maturity."
8.2	to check reference to other Ads. ("See Ad. 15" to read "See Ad. 14")
Ad. 10	to update wording of states
Ad. 20	to add illustrations for states 2, 3, 4, and 5
Ad. 23	to check whether to replace drawings with photos (if photos are available for all states)
Ads. 39, 40	to be reviewed and completed
TQ 1	to add 1.3 for indicating the botanical species name

Raspberry (Rubus idaeus L.) (Revision)

99. The subgroup discussed document TG/43/8(proj.1), presented by Mr. Erik Schulte (Germany), and received a presentation by the leading expert on the discriminating power of existing characteristics. A copy of the presentation is provided in document TWF/52/9. The subgroup agreed the following:

1.	to replace "and its hybrids" by naming relevant hybrids (UPOV codes on cover page to be updated accordingly)
4.1.4	- number of plants or parts of plants to be examined to be indicated as 5 - to delete second paragraph
Table of Chars.	- to add example varieties - to add indication for explanations covering several characteristics
Char. 8	- to remove underlining - to clarify which cane to be observed
Char. 9	to remove underlining
Chars. 11 to 14	to check whether to delete "Varieties with spines present only:"
Char. 12	to add illustration (drawing where to be observed)
Char. 13	to add illustration
Char. 22	to read "Current year's cane: flower" and to check whether to be indicated as QN
Char. 25	- to add explanation (see TG/Apple) - to check whether to read "Flower: diameter"
Chars. 26, 27	to be reviewed depending on decision on Char. 22

Char. 33	- to check whether additional state is needed if hybrids between raspberries and blackberries are included in the TG - to check whether to add state “reddish purple” or whether covered by “purple” or “dark purple”
Char. 36	to add illustration where to be observed
Char. 37	to check whether to be deleted
Char. 38	to check whether to read “Time of vegetative bud burst on previous year’s cane”
Char. 40	- to check whether to delete “on previous year’s cane” and if so, check whether to be combined with Char. 41 - to add explanation after bearing type issue is clarified
Char. 42	- to check whether to delete “on previous year’s cane” and if so, check whether to be combined with Char. 43 - to add explanation after bearing type issue is clarified
8.	- to move explanations currently in 8.2 as explanations covering several characteristics to 8.1 - current 8.1 to become 8.2
8.2 (c)	to read “...when the cane is fully developed.”
8.2 (f)	to read “Observations on the flower and the fruit should be recorded from canes with flowers and fruit appearing first in the vegetation period (either on previous year’s canes or on current year’s canes). When fruits have been observed on the current year’s cane, they will not be observed on the same canes in the following year.”
TQ 5.8	to be deleted
TQ 1	to add subparagraph 1.3 allowing to indicate for hybrids
TQ 6.	to provide example

Sour Cherry (Prunus cerasus L.); Duke Cherry (Prunus xgondouinii (Poit. & Turpin) Rehder) (Revision)

100. The subgroup discussed document TG/230/2(proj.1), presented by Ms. Szilvia Márkné Deák (Hungary), and agreed the following:

4.1.4	number of plants or parts of plants to be examined to be indicated as 3
5.3	to add the following as grouping characteristics: Fruit: size (characteristic 27) Fruit: color of skin (characteristic 36) Fruit: color of flesh (characteristic 37) Fruit: color of juice (characteristic 38) Time of beginning of flowering (characteristic 46) Time of beginning of fruit ripening (characteristic 47)
Table of Chars.	to indicate all notes for QN characteristics with abbreviated QN scale (all notes from 1 to 9 or 1 to 5) and check whether more example varieties need to be added
Chars. 14, 16	to be indicated as VG/MG
Chars. 21	to reduce scale to notes 1 to 5 with states of expression from “very small” to “very large”
Chars. 23, 27, 30, 39, 43, 45, 46, 47	to be indicated as VG/MG
8.1 (a) to (d)	to read “Observations should be made...”
8.1	to add the following new explanations: (e) Nectaries: Observations of nectaries should be made in early summer on fully developed leaves from the middle third of a well-developed current season’s shoot. (f) Stipule: Observations of stipule should be made on the fifth or sixth fully developed leaf of a long shoot, during the rapid growth.
Ad. 22	to rearrange figures and subtexts
Ads. 17 to 22	to be deleted (information moved to 8.1)
Ad. 28	to align size of illustrations and subtexts
8.3	to amend synonym for “Cigánymeggy” to read “Zigeunersauerkirsche”
9.	to review format
TQ 5.	to indicate all notes for QN characteristics with abbreviated QN scale (all notes from 1 to 9 or 1 to 5)

TQ 6.	to add example
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Strawberry (Fragaria L.) (Revision)

101. The subgroup discussed document TG/22/11(proj.3), presented by Mr. Erik Schulte (Germany), and agreed the following:

3.1.2	to read "The two independent growing cycles should be in the form of a single or two separate plantings."
3.1.3	to be deleted
4.1.4	number of plants or parts of plants to be examined to be indicated as 8
Table of Chars.	to delete comments from characteristics
Char. 1	to add example varieties
Char. 7	to add MS
Char. 10	to add explanations observations should be made on the upper side of the leaf
Char. 15	state 2 to read "straight"
Char. 42	to add (*)
Char. 43	to add (*)
8.1 (c)	to check whether to read "Observations on the stipule and the stolon should be made at the end of bearing. ..."
Ad. 9	to add illustration for state 2
Ad. 17	to improve illustrations (add base of leaf blade to each illustration)
TQ 7.3	to be reviewed (to check whether to ask for more detailed information on bearing type, chilling and cultivating requirements)

Sweet Cherry (Prunus avium (L.) L.) (Revision)

102. The subgroup discussed document TG/35/8(proj.2), presented by Ms. Carole Dirwimmer (France), and agreed the following:

4.1.4	number of plants or parts of plants to be examined to be indicated as 3
Char. 1	- to check whether "intermediate" types to be included - to check whether to add explanation in 8.2 to read (e.g. "compact" varieties have very short internodes, regardless the rootstock)
Char. 2	state 1 to read "very weak"
Char. 3	to read "Only varieties with tree type: standard: Tree: habit"
Char. 22	to be indicated as VG (instead of MG)
Char. 23	- to be indicated as VG - to check which type of "intermediate" flowers are most frequent (in relation to drawing)
Char. 24	to have states from "very small" to "very large"
Char. 25	to have states from "very short" to "very tall"
Char. 26	to have states from "very narrow" to "very broad"
Char. 27	to have the states from "very low" to "very high"
Char. 29	to read "Fruit: shape from above"
Char. 30	to check whether to rename states of expression (e.g. retuse)
Char. 31	- to check whether state 1 to read "retuse" - to check whether to add illustration for state 4 - to check whether to replace photographs by drawings
Char. 41	to check whether to include a bi-colored state of expression
Char. 42	to check whether to reword state "colorless"
Char. 44	to check whether the characteristic meets criteria for DUS
Char. 45	to check whether to reduce scale of notes
Char. 47	to have the states from "very low" to "very high"
Char. 48	to add illustration
8.2 (a)	to insert a hyphen between "year" and "old"
Ad. 2	to read "The vigor of the tree ..."
Ad. 9	to check whether to improve illustration (e.g. state 3)

Ad. 28	- to check whether to delete empty column (in case not used) - to display fruits with base at stalk end (upside down) - to check numbering of states of expression (starting from bottom to top, left to right)
Ad. 29	- to adjust the photographs to have the same size - to add sentence to read "observations should be made from above the fruits"
Ad. 30	- to adjust the photographs to have the same size - to invert images (upside down)
Ad. 31	to invert pictures (upside down)
Ad. 49	To have a full sentence
Ad. 50	- first sentence: to have wording in a full sentence - second sentence: to start with a capital letter
TQ 6.	to add example

Recommendations on draft Test Guidelines

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

103. The TWF 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:

Full draft Test Guidelines

<u>Subject</u>	<u>Basic Document(s) (2021)</u>
*Apricot (<i>Prunus armeniaca</i> L.) (Revision)	TG/70/5(proj.5)

Partial revisions

<u>Subject</u>	<u>Basic Document(s) (2021)</u>
Actinidia (<i>Actinidia</i> Lindl.) (Partial revision: Technical Questionnaire)	TG/98/7 Rev. Corr., TWP/5/13, Annex XV
Japanese Plum (<i>Prunus salicina</i> Lindl.) (Partial revision: Technical Questionnaire)	TG/84/4 Corr. 2 Rev., TWP/5/13, Annex XIV
Peach (<i>Prunus persica</i> (L.) Batsch) (Partial revision: Technical Questionnaire)	TG/53/7 Rev., TWP/5/13, Annex XIII
Prunus Rootstocks (<i>Prunus</i> L.) (Partial revision: Technical Questionnaire)	TG/187/2, TWP/5/13, Annex XVI

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

104. The TWF agreed to discuss the following draft Test Guidelines at its fifty-third session:

Full draft Test Guidelines

<u>Subject</u>	<u>Basic Document(s) (2021)</u>
*Apple (fruit varieties) (Revision) (<i>Malus domestica</i> Borkh.)	TG/14/10(proj.4)
Date Palm (<i>Phoenix dactylifera</i>)	TG/PHOEN_DAC(proj.1)
Grapevine (<i>Vitis</i> L.) (Revision)	TG/50/10(proj.4)
Guava (<i>Psidium guajava</i> L.; <i>Psidium cattleianum</i> Sabine var. <i>littorale</i> (Raddi) Fosberg) (Revision)	TG/110/4(proj.2)
Goji (<i>Lycium barbarum</i> L., <i>L. chinense</i> Mill., <i>L. cylindricum</i> Kuang & A. M. Lu, <i>L. dasystemum</i> Pojark., <i>L. ruthenicum</i> Murray, <i>L. truncatum</i> Y. C. Wang, <i>L. yunnanense</i> Kuang & A. M. Lu)	TG/LYCIUM_BAR(proj.1)

Hazelnut (<i>Corylus avellana</i> L.; <i>Corylus colurna</i> L.) (Revision)	TG/71/4(proj.2)
Lemon (Lemons and Limes (<i>Citrus</i> L. - Group 3)) (Revision)	TG/203/1 Rev.
Mandarin (<i>Citrus</i> L. – Group 1) (Revision)	TG/201/1 Rev.
*Mulberry (<i>Morus</i> L.)	TG/MORUS(proj.3)
Raspberry (<i>Rubus idaeus</i> L.) (Revision)	TG/43/8(proj.1)
Sour Cherry (<i>Prunus cerasus</i> L.); Duke Cherry (<i>Prunus xgondouinii</i> (Poit. & Turpin) Rehder) (Revision)	TG/230/2(proj.1)
*Strawberry (<i>Fragaria</i> L.) (Revision)	TG/22/11(proj.3)
Sweet Cherry (<i>Prunus avium</i> (L.) L.) (Revision)	TG/35/8(proj.2)
Trifoliate Orange ((Poncirus) (<i>Citrus</i> L. - Group 5)) (Revision)	TG/83/4 Rev.

Partial revisions

<u>Subject</u>	<u>Basic Document(s) (2021)</u>
Oranges (<i>Citrus</i> L. - Group 2) (Partial revision: move relevant botanical names from the “principle botanical names” box to the “alternative botanical names” box)	TG/202/1 Rev. 2, TWP/5/4, Annex II
Pummelo (Grapefruit and) (<i>Citrus</i> L. - Group 4) (Partial revision: move relevant botanical names from the “principle botanical names” box to the “alternative botanical names” box)	TG/204/1 Rev. 2, TWP/5/4, Annex II
Walnut (<i>Juglans regia</i> L.) (Partial revision: Characteristics 10 and 11; to add new chars. “Time of vegetative bud burst”, “Predominant location of fruit buds”)	TG/125/7

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

(c) *Possible Test Guidelines to be discussed in the future*

106. The TWF agreed that it should consider the development of Test Guidelines for the following at a future session:

<u>Subject</u>	<u>Basic Document(s) (2021)</u>
Argania (<i>Argania spinosa</i> (L.) Skeels)	TG/ARGAN(proj.5)
Carambola (<i>Averrhoa carambola</i> L.)	NEW
Cape Gooseberry (<i>Physalis peruviana</i> L.)	NEW
Japanese Plum (<i>Prunus salicina</i> Lindl.) (Revision)	TG/84/4 Corr. 2 Rev.
Soursop (<i>Annona muricata</i> L.)	NEW

Date and place of the next session

107. The TWF noted that no invitations for the venue of its fifty-third session had been received. The TWF noted that a decision on the date and place of its next session would be taken by the Council, at its fifty-fifth session, to be held on October 29, 2021.

108. The TWF noted that UPOV members could contact the Office of the Union with offers of date and place to host the next TWF session. If an offer was received sufficiently before the fifty-fifth session of the Council, the offer could be considered by the Council at its fifty-fifth session.

109. The TWF agreed that its fifty-third session should be held via electronic means, from July 11 to 15, 2022, if no alternative offer was received from a member of the Union.

Future program

110. The TWF agreed that documents for its fifty-third session should be submitted to the Office of the Union by March 25, 2022. The TWF noted that items would be deleted from the agenda if the planned documents did not reach the Office of the Union by the agreed deadline.

111. The TWF proposed to discuss the following items at its fifty-third session:

1. Opening of the Session
2. Adoption of the agenda
3. Short reports on developments in plant variety protection
 - (a) Reports from members and observers (written reports to be prepared by members and observers)
 - (b) Reports on developments within UPOV (oral report by the Office of the Union)
4. Molecular Techniques (document to be prepared by the Office of the Union)
 - (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 from the European Union and France and presentations invited from members of the Union)
5. Development of guidance and information materials (documents to be prepared by the Office of the Union)
6. Variety denominations (document to be prepared by the Office of the Union)
7. Information and databases
 - (a) UPOV information databases (documents to be prepared by the Office of the Union)
 - (b) Variety description databases (documents to be prepared by the Office of the Union)
 - (c) Exchange and use of software and equipment (document to be prepared by the Office of the Union)
 - (d) UPOV PRISMA (document to be prepared by the Office of the Union)
8. Experiences with new types and species (oral reports invited)
9. Cooperation in examination (document to be prepared by the Office of the Union and presentations invited)
10. Access to plant material for the purpose of management of variety collections and DUS examination (document to be prepared by the European Union and others presentations invited from members of the Union)
11. DUS examination of mutant varieties of apple (document and presentation to be prepared by the European Union and Canada)
12. Matters relevant in DUS examination for the fruit sector (presentations invited from the European Union and Brazil and other presentations invited from members and observers)
13. Assessing characteristics on the basis of measurements of individual plants or parts of plants for small samples (presentations invited from France and other members of the Union)
14. The assessment of color in fruit crops (presentations to be prepared by New Zealand)
15. Guidance for drafters of Test Guidelines
16. Matters to be resolved concerning Test Guidelines put forward for adoption by the Technical Committee (if appropriate)
17. Discussion on draft Test Guidelines (Subgroups)
18. Recommendations on draft Test Guidelines
19. Date and place of the next session
20. Future program
21. Adoption of the Report of the session (if time permits)
22. Closing of the session

Virtual Technical Visit

112. On July 14, 2021, the TWF received a presentation from Mr. Jianfu Jiang, Senior Examiner, DUS Tests Station for Plant Variety Protection in Zhengzhou, Ministry of Agriculture and Rural Affairs, and Ms. Wantong Zhao, Examiner, DUS Tests Station for Citrus Plant Variety Protection in Chongqing, Ministry of Agriculture and Rural Affairs, on DUS examination of Grape, Peach and Citrus varieties in China. The presentation was followed by questions and answers. A copy of the presentations is provided in Annex III to this report.

113. The TWF adopted this report at the end of the session.

[Annex I follows]

LIST OF PARTICIPANTS

I. MEMBERS

AFRICAN INTELLECTUAL PROPERTY ORGANIZATION (OAPI)

Massaër NGUERE (Mr.), Chargé de Recherche, Directeur, Unité de Production de Plants Fruitières (UPPF), Institut Sénégalais de Recherches Agricoles (ISRA), Dakar, Senegal
(e-mail: Massaer.nguer@isra.sn)

AUSTRALIA

Nahida BHUIYAN (Ms.), Examiner, Plant Breeder's Rights Office, IP Australia, Woden
(e-mail: nahida.bhuiyan@ipaaustralia.gov.au)

Muhammad Ali BHATTI (Mr.), Examiner, Plant Breeder's Rights Office, IP Australia, Woden
(e-mail: ali.bhatti@ipaaustralia.gov.au)

Barkat MUSTAFA (Mr.), PBR Examiner, Plant Breeder's Rights Office, IP Australia, Woden
(e-mail: Barkat.Mustafa@ipaaustralia.gov.au)

Li WANG (Ms.), PBR Examiner, Plant Breeder's Rights Office, IP Australia, Woden
(e-mail: li.wang@ipaaustralia.gov.au)

Clarissa BARBOSA (Ms.), Trainee Examiner, Plant Breeder's Rights Office, IP Australia, Woden
(e-mail: clarissa.barbosa@ipaaustralia.gov.au)

Van Hai LE (Mr.), Trainee Examiner, Plant Breeder's Rights Office, IP Australia, Woden
(e-mail: vanhai.le@ipaaustralia.gov.au)

BELARUS

Marina SOLODUHO (Ms.), Deputy Head, International Cooperation Department, State Inspection for Testing and Protection of Plant Varieties, Minsk
(e-mail: belsort@mail.ru)

Tatsiana SIAMASHKA (Ms.), Deputy Director of DUS Testing, State Inspection for Testing and Protection of Plant Varieties, Minsk
(e-mail: belsort@mail.ru)

BRAZIL

Stefânia PALMA ARAUJO (Sra.), Deputy Coordinator of PVP Office, Plant Variety Protection Office, National Plant Variety Protection Service (Serviço Nacional de Proteção de Cultivares - SNPC), Brasília
(e-mail: stefania.araujo@agricultura.gov.br)

CANADA

Marc DE WIT (Mr.), Examiner, Plant Breeders' Rights Office, Canadian Food Inspection Agency (CFIA), Ottawa
(e-mail: Marc.deWit@Inspection.gc.ca)

CHILE

Manuel Antonio TORO UGALDE (Mr.), Jefe Departamento, Registro de Variedades Protegidas, División Semillas, Servicio Agrícola y Ganadero (SAG), Santiago de Chile
(e-mail: manuel.toro@sag.gob.cl)

Gonzalo PARDO HERNÁNDEZ (Mr.), Head, Subdepartment of Biotechnology, Registration and Control of Seeds and Plant, Servicio Agrícola y Ganadero (SAG), Santiago de Chile
(e-mail: gonzalo.pardo@sag.gob.cl)

Alejandro Ignacio SAAVEDRA PÉREZ (Sr.), Profesional Registro de Variedades, Servicio Agrícola y Ganadero (SAG), Santiago de Chile
(e-mail: alejandro.saavedra@sag.gob.cl)

CHINA

Xinming ZHANG (Mr.), Division Director of PVP, Development Center of Science and Technology, Ministry of Agriculture and Rural Affairs (MARA), Beijing

Ruixi HAN (Mr.), Deputy Director, Division of DUS Tests, Development Center of Science and Technology (DCST), Ministry of Agriculture and Rural Affairs (MARA), Beijing
(e-mail: wudifeixue007@163.com)

Wanxia SHEN (Ms.), Doctor, Citrus Research Institute, Chinese Academy of Agricultural Sciences, Chongqing
(e-mail: shenwanxia@cric.cn)

Shiping ZHU (Ms.), Associate Professor, Citrus Research Institute, Chongqing
(e-mail: zhushiping@cric.cn)

Lirong WANG (Ms.), Researcher, Zhengzhou fruit research institute of CAAS, Zhengzhou City
(e-mail: wanglirong@caas.cn)

Changwen CHEN (Ms.), Associate Researcher, Zhengzhou fruit research institute of CAAS, Zhengzhou City
(e-mail: chenchangwen@caas.cn)

Jianfu JIANG (Mr.), Associate Researcher, Zhengzhou Fruits Station for DUS Tests of New Varieties of Plants, Ministry of Agriculture and Rural Affairs (MARA), Zhengzhou City
(e-mail: jiangjianfu@caas.cn)

Wantong ZHAO (Ms.), Senior Examiner, Citrus Research Institute, Southwest University, Ministry of Agriculture and Rural Affairs (MARA), Chongqing
(e-mail: zhaowantong@cric.cn)

Yang YANG (Ms.), Senior Examiner, Division of Plant Variety Protection, Development Center of Science and Technology (DCST), Ministry of Agriculture and Rural Affairs (MARA), Beijing
(e-mail: yangyang@agri.gov.cn)

Junyu WANG (Mr.), Research Assistant, Tea Research Institute, Chinese Academy of Agricultural Sciences
(e-mail: 786290026@qq.com)

Cuiping CHEN (Ms.), Research Assistant, Qinghai Academy of Agriculture and Forestry Sciences, Xining
(e-mail: chencuiyang@126.com)

Mengqiang CHEN (Mr.), DUS Tester, College of agriculture, South China Agricultural University, Guangzhou
(e-mail: 353300205@qq.com)

Caihuan HAO (Ms.), DUS Tester, Jilin Academy of Agricultural Sciences, Gongzhuling
(e-mail: 123616532@qq.com)

Lyu WU (Mr.), DUS Tester, Jilin Academy of Agricultural Sciences, Gongzhuling Sub-center for DUS Testing, Gongzhuling
(e-mail: 526931819@qq.com)

Lingling WANG (Ms.), Research Intern, Zhengzhou fruit research institute of CAAS, Zhengzhou City
(e-mail: 13693572303@163.com)

Suke WANG (Ms.), Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences, Zhengzhou City,
(e-mail: wangsuke@caas.cn)

Xiaofeng LIU (Mr.), Xingcheng
(e-mail: liuxiaofeng01@caas.cn)

CZECH REPUBLIC

Andrea POVOLNÁ (Ms.), Head of DUS Department, National Plant Variety Office, Central Institute for Supervising and Testing in Agriculture (UKZUZ), Brno
(e-mail: andrea.povolna@ukzuz.cz)

Tomás JAN (Mr.), DUS Expert for fruit, Central Institute for Supervising and Testing in Agriculture (ÚKZÚZ), Brno
(e-mail: tomas.jan@ukzuz.cz)

Dusan NESRSTA (Mr.), DUS Expert for fruit, Central Institute for Supervising and Testing in Agriculture (ÚKZÚZ), Brno
(e-mail: dusan.nesrsta@ukzuz.cz)

Vít RUCKI (Mr.), DUS Expert for Grapevine, Central Institute for Supervising and Testing in Agriculture (ÚKZÚZ), Brno
(e-mail: vit.rucki@ukzuz.cz)

ECUADOR

Edison TROYA ARMIJOS (Sr.), Ingeniero agrónomo, Servicio Nacional de Derechos Intelectuales (SENADI), Quito
(e-mail: etroya@senadi.gob.ec)

Jaime Fernando SÁNCHEZ LARCO (Mr.), Intellectual Property Expert, Instituto Nacional De Investigaciones Agropecuarias (INIAP), Quito
(e-mail: jaime.sanchez@iniap.gob.ec)

EGYPT

Shymaa Zoheir ABOSHOSHA (Ms.), Agriculture Engineer, Plant Variety Protection Office (PVPO), Central Administration for Seed Testing and Certification (CASC), Giza
(e-mail: sh_z9@hotmail.com)

EUROPEAN UNION

Jean MAISON (Mr.), Deputy Head, Technical Unit, Community Plant Variety Office (CPVO), Angers
(e-mail: maison@cpvo.europa.eu)

Jens WEGNER (Mr.), Technical Expert for Ornamental Plants and Fruit Crops, Community Plant Variety Office (CPVO), Angers
(e-mail: wegner@cpvo.europa.eu)

Urszula BRAUN-MLODECKA (Ms.), Technical Expert on Ornamental Plants/Fruit Crops, Community Plant Variety Office (CPVO), Angers
(e-mail: braun@cpvo.europa.eu)

FRANCE

Carole DIRWIMMER (Ms.), Head of the Fruit DUS sector, Groupe d'étude et de contrôle des variétés et des semences (GEVES), Beaucouzé
(e-mail: carole.dirwimmer@geves.fr)

Baptiste LEDERER (Mr.), Fruit Species DUS manager, Groupe d'étude et de contrôle des variétés et des semences (GEVES), Le Thor
(e-mail: baptiste.lederer@geves.fr)

GERMANY

Swenja TAMS (Ms.), Head of Section, Federal Plant Variety Office, Bundessortenamt, Hanover
(e-mail: Swenja.Tams@bundessortenamt.de)

Erik SCHULTE (Mr.), Head of Section 215 (Fruit, Gene banks), Testing Station Wurzen, Bundessortenamt, Wurzen
(e-mail: erik.schulte@bundessortenamt.de)

Benedikt PAEßENS (Mr.), Head of section 219, Head of testing station Haßloch, Bundessortenamt, Haßloch/Pfalz
(e-mail: benedikt.paessens@bundessortenamt.de)

HUNGARY

György PERNESZ (Mr.), Head, Variety Testing Department for Horticultural Crops, National Food Chain Safety Office (NÉBIH), Budapest
(e-mail: perneszgy@nebih.gov.hu)

Zsolt SZANI (Mr.), Senior Expert, fruit species, Variety Testing Dept. for Horticultural Crops, National Food Chain Safety Office (NÉBIH), Budapest
(e-mail: szanizs@nebih.gov.hu)

Szilvia MÁRKNÉ DEÁK (Ms.), DUS Expert, Agricultural Genetic Resources Directorate, National Food Chain Safety Office (NÉBIH), Budapest
(e-mail: DeakSz@nebih.gov.hu)

ITALY

Luca AGGIO (Mr.), Research Centre for Viticulture and Enology, Council of Agricultural Research and Economics (CREA) - CPVO Examination Office Grapevine, Conegliano
(e-mail: luca.aggio@crea.gov.it)

Silvia CAPPELLOZZA (Ms.), Researcher, Laboratory of Sericulture, Research Centre of Agriculture and Environment, Council for Research in Agriculture and Economics (CREA), Padova
(e-mail: silvia.cappellozza@crea.gov.it)

Roberto CARRARO (Mr.), Researcher, Research Centre for Viticulture and Enology, Council for Research in Agriculture and Economics (CREA), Conegliano
(e-mail: roberto.carraro@crea.gov.it)

Petra ENGEL (Ms.), DUS expert, Office for International Cooperation, Council for Research in Agriculture and Economics (CREA), Rome
(e-mail: petra.engel@crea.gov.it)

Flavio Roberto DE SALVADOR (Mr.), DUS Expert, Marino
(e-mail: fr.desalvador@gmail.com)

JAPAN

Toru WATANABE (Mr.), Senior Staff, DUS Test Team, National Center for Seeds and Seedlings (NCSS), Unzen
(e-mail: majiri@affrc.go.jp)

Moyuri KINEBUCHI (Ms.), Senior Staff, Center for Seeds and Seedlings, National Agriculture and Food Research Organization (NARO), Tsukuba-shi
(e-mail: kinebuchim230@affrc.go.jp)

Yoshihiro YAMANAKA (Mr.), Examiner, Intellectual Property Division, Food Industry Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries (MAFF), Tokyo
(e-mail: yoshihiro_yamanak860@maff.go.jp)

Yoshiyuki OHNO (Mr.), Examiner, Intellectual Property Division, Food Industry Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries (MAFF), Ibaraki-Ken
(e-mail: yoshiyuki_ono300@maff.go.jp)

Yosuke ABE (Mr.), Assistant Examiner, Plant Variety Protection Office, Intellectual Property Division, Food Industry Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries (MAFF), Tokyo
(e-mail: yosuke_abe880@maff.go.jp)

Hana MAKINO (Ms.), DUS Tester, National Center for Seeds and Seedlings (NCSS), Nagasaki
(e-mail: hmakino@affrc.go.jp)

Tomoaki KANESHIRO (Mr.), DUS tester, National Center for Seeds and Seedlings (NCSS), Hiroshima
(e-mail: kaneshirot680@affrc.go.jp)

Yoshiaki TAKAMATSU (Mr.), Staff, Center for Seeds and Seedlings, National Center for Seeds and Seedlings (NCSS), Tsukuba
(e-mail: yoshia.tak@affrc.go.jp)

KENYA

Gentrix Nasimiyu JUMA (Ms.), Chief Plant Examiner, Kenya Plant Health Inspectorate Service (KEPHIS), Nairobi
(e-mail: gjuma@kephis.org)

Joshua Suva LUCA'S (Mr.), Senior Plant Inspector, Kenya Plant Health Inspectorate Service (KEPHIS), Nairobi
(e-mail: lsuva@kephis.org)

Faith Mulekhe MUSYIMI (Ms.), Plant Inspector, Kenya Plant Health Inspectorate Service (KEPHIS), Embu
(e-mail: fmusyimi@kephis.org)

MEXICO

Miguel Angel PACHECO AGUILAR (Sr.), Jefe de departamento de Protocolos Técnicos, Servicio Nacional de Inspección y Certificación de Semillas (SNICS), Ciudad de México
(e-mail: angel.pacheagui@gmail.com)

NETHERLANDS

Bert SCHOLTE (Mr.), Head Department Variety Testing, Naktuinbouw NL, Roelofarendsveen
(e-mail: b.scholte@naktuinbouw.nl)

Marco HOFFMAN (Mr.), Taxonomist / DUS Ornamental & Fruit Crops Specialist, Naktuinbouw DUS Ornamentals & Fruit, Roelofarendsveen
(e-mail: m.hoffman@naktuinbouw.nl)

NEW ZEALAND

Christopher J. BARNABY (Mr.), PVR Manager / Assistant Commissioner, Plant Variety Rights Office, Intellectual Property Office of New Zealand, Ministry of Business, Innovation and Employment, Christchurch
(e-mail: Chris.Barnaby@pvr.govt.nz)

Kylie MILLER (Ms.), Senior Plant Variety Rights Examiner, Plant Variety Rights Office, Intellectual Property Office of New Zealand, Ministry of Business, Innovation and Employment, Hawkes Bay
(e-mail: Kylie.Miller@pvr.govt.nz)

POLAND

Marcin KRÓL (Mr.), Head of DUS Testing Department, Research Centre for Cultivar Testing (COBORU), Slupia Wielka
(e-mail: m.Krol@coboru.gov.pl)

Anna TARANCZEWSKA (Ms.), DUS Expert, Research Centre for Cultivar Testing (COBORU), Slupia Wielka
(e-mail: a.taranczewska@coboru.gov.pl)

Tomasz PIOTROWSKI (Mr.), DUS Expert, Research Centre for Cultivar Testing (COBORU), Slupia Wielka
(e-mail: T.Piotrowski@coboru.gov.pl)

PORTUGAL

Anabela ROCHA (Mrs), DUS Examiner, Plant Breeder Rights Office and National List, Divisão de variedades e Sementes (DVS), Direção-Geral de Alimentação e Veterinária (DGAV), Lisboa
(e-mail: anabelarocha@dgav.pt)

REPUBLIC OF KOREA

Mu Seok HAN (Mr.), Senior Researcher, National Forest Seed Variety Center, Chungcheongbuk-do
(e-mail: Mushan@korea.kr)

Dongmin KIM (Mr.), Researcher, Korea Seed and Variety Service (KSVS), Hyeongsangnam-do
(e-mail: acekdm@korea.kr)

Sung-Ryul RYU (Mr.), Researcher, National Forest seed and Variety center (NFSV), Chungcheonbuk-do
(e-mail: 25ryul@korea.kr)

Jin-Seok AN (Mr.), DUS Expert, Korea Seed & Variety Service (KSVS), Gyeongsangbuk-do
(e-mail: jsa0712@korea.kr)

Lakjung CHOE (Mr.), DUS Examiner, Jeju Branch Office, Korea Seed & Variety Service (KSVS), Jeju-do
(e-mail: clj1216@korea.kr)

Hyunwoo OH (Mr.), DUS examiner, Jeju Branch Office, Korea Seed and Variety Service (KSVS), Jeju-do
(e-mail: blackcow@korea.kr)

Sang Don YUN (Mr.), Examiner, PVP Division, Korea Seed and Variety Service (KSVS), Gyeongbuk-do
(e-mail: yunsd@korea.kr)

SLOVAKIA

Ľubomir BASTA (Mr.), National Coordinator for the Cooperation of the Slovak Republic with UPOV, Head of DUS testing, Department of Variety Testing, Central Control and Testing Institute in Agriculture (ÚKSÚP), Bratislava
(e-mail: lubomir.basta@uksup.sk)

SOUTH AFRICA

Carensa PETZER (Ms.), Scientist, Department of Agriculture, Land Reform and Rural Development (DALRRD), Stellenbosch
(e-mail: CarensaP@Dalrrd.gov.za)

Robyn HIERSE (Ms.), Scientist, Department of Agriculture, Land Reform and Rural Development (DALRRD), Stellenbosch
(e-mail: RobynH@dalrrd.gov.za)

Phumza VAKELE (Ms.), Scientist, Department of Agriculture, Land Reform and Rural Development (DALRRD), Stellenbosch
(e-mail: phumzav@dalrrd.gov.za)

Luvuyo Michael KHOZA (Mr.), Scientist Production Grade C, Department of Agriculture, Land Reform and Rural Development, Stellenbosch
(e-mail: LuvuyoK@dalrrd.gov.za)

Hendrik VENTER (Mr.), Scientist Directorate: Genetic Resources, Department of Agriculture, Land Reform and Rural Development (DALRRD), Stellenbosch
(e-mail: HennieV@Dalrrd.gov.za)

SPAIN

Nuria URQUÍA FERNÁNDEZ (Ms.), Jefe de Área de Registro de Variedades, Subdirección General de Medios de Producción Agrícola y Oficina Española de Variedades Vegetales (OEVV), Ministerio de Agricultura, Pesca y Alimentación (MAPA), Madrid
(e-mail: nurquia@mapa.es)

José Federico SÁNCHEZ SEVILLA (Mr.), Responsible for the Spanish Strawberry Examination Center, Centro IFAPA Málaga (Churriana), Málaga
(e-mail: josef.sanchez@juntadeandalucia.es)

Francisco José FABADO GUILLEM (Mr.), DUS Manager, Citrus and other species DUS Testing Unit (UETIV), Instituto Valenciano de Investigaciones Agrarias (IVIA), Moncada
(e-mail: fabado_fra@gva.es)

Mercè ROVIRA (Ms.), Responsable for DUS examination of *Corylus avellana* L., Spanish Plant Variety Office, Constantí
(e-mail: merce.rovira@irta.cat)

Ramón MARTÍNEZ GARCÍA (Mr.), DUS Technical Examiner, Spanish Plant Variety Office, La Alberca
(e-mail: ramon.martinez8@carm.es)

Carmen SORIA NAVARRO (Ms.), Scientific researcher (plant breeding), Centro IFAPA Málaga
(e-mail: maria.soria@juntadeandalucia.es)

UKRAINE

Valentyna MATUS (Ms.), Head of sector, Ukrainian Institute for Plant Variety Examination, Kyiv
(e-mail: matysv@ukr.net)

UNITED STATES OF AMERICA

Mara SANDERS (Ms.), Plant Variety Examiner, Plant Variety Protection Office, USDA, Washington D.C.
(e-mail: mara.sanders@usda.gov)

VIET NAM

Van Khoi DAO (Mr.), Examiner, Plant Variety Protection Office (PVPO), Department of Crop Production, Ministry of Agriculture and Rural Development (MARD), Hanoi
(e-mail: Vankhoi84@gmail.com)

II. OBSERVERS

LAO PEOPLE'S DEMOCRATIC REPUBLIC

Southchay LORVANH (Mr.), Technical official, New Plant Variety Division, Department of Intellectual Property, Ministry of Science and Technology
(e-mail: southchay21@gmail.com)

MALAYSIA

Muhammad Nuradib BIN MAZLAN (Mr.), Agricultural Officer, Registration of Plant Variety Protection Section, Crop quality control Division, Department of Agriculture (DOA), Putrajaya
(e-mail: nuradib@doa.gov.my)

Shabariah ISMAIL (Ms.), Agricultural Officer, Plant Variety Registration Section, Crop Quality Control Division, Department of Agriculture (DOA), Putrajaya
(e-mail: shabariahismail79@gmail.com) [via

Lem MING SIANG (Ms.), Agricultural Officer, Department of Agriculture (DOA), Ayer Hitam
(e-mail: lemmsdoa@gmail.com)

THAILAND

Waraporn THONGPAN (Ms.), Agricultural Research Officer, Plant Varieties Protection Division, Ministry of Agriculture and Cooperatives, Bangkok
(e-mail: waraporn.pvp@gmail.com)

Natthaporn SIANG-ON (Ms.), Agricultural Research Officer, Plant Variety Protection Research Group, Department of Agriculture, Ministry of Agriculture and Cooperatives, Bangkok
(e-mail: puynatt@gmail.com)

Paniphat KRITSMAN (Mr.), Agricultural Research Officer, Plant Varieties Protection Office, Ministry of Agriculture and Cooperatives, Bangkok
(e-mail: paniphatk@yahoo.com)

Wasana MUNGKHUNG (Mr.), Agricultural Research Officer, Plant Varieties Protection Division, Ministry of Agriculture and Cooperatives, Bangkok
(e-mail: wasana.mungkhung@yahoo.com)

III. ORGANIZATIONS

CROPLIFE INTERNATIONAL

Marcel BRUINS (Mr.), Consultant, CropLife International, Bruxelles, Belgium
(e-mail: marcel@bruinsseedconsultancy.com)

INTERNATIONAL COMMUNITY OF BREEDERS OF ASEXUALLY REPRODUCED HORTICULTURAL PLANTS (CIOPORA)

Burgert VAN DYK (Mr.), CIOPORA Head Technical Expert for fruit crops, Regional Director Fall Creek Nursery & Farm South Africa, Paarl, South Africa
(e-mail: burgertvd@fallcreeknursery.com)

Garth SWINBURN (Mr.), Vice President Licensing, Sun World International LLC, Drysdale, Australia
(e-mail: gswinburn@sun-world.com)

An VAN DEN PUTTE (Ms.), IP Manager, Better3fruit, Rillaar, Belgium
(e-mail: an@better3fruit.com)

Jan Wouter VAN ECK (Mr.), License and IP Manager / Crop expert - leader fruit section Strawberry, Fresh Forward Marketing BV, Eck en Wiel, Netherlands
(e-mail: janwouter.vaneck@fresh-forward.nl)

IV. OFFICERS

Christopher J. BARNABY (Mr.), PVR Manager / Assistant Commissioner, Plant Variety Rights Office, Intellectual Property Office of New Zealand, Ministry of Business, Innovation and Employment, Christchurch
(e-mail: Chris.Barnaby@pvr.govt.nz)

V. OFFICE OF UPOV

Peter BUTTON (Mr.), Vice Secretary-General

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

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

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

Romy OERTEL (Ms.), Secretary II

Jessica MAY (Ms.), Secretary I

Kasumi FALQUET (Ms.), Administrative support

[Annex II follows]

ANNEX II

WELCOME ADDRESS BY MR. XINMING ZHANG, DIRECTOR OF PVP DIVISION,
DEVELOPMENT CENTER OF SCIENCE AND TECHNOLOGY,
MINISTRY OF AGRICULTURE AND RURAL AFFAIRS

Distinguished Mr. Peter BUTTON, Vice Secretary-General of UPOV, Mr. Chris Barnaby, Chairperson of the TWF and Dear participants,

Good morning, afternoon or evening.

Thanks UPOV for providing the opportunity to host 52th UPOV technical working party meeting for fruits, I would like to express my pleasure of welcoming all participants.

As we all know, this meeting was originally scheduled for being held in Zhengzhou, Henan province, China. Unfortunately, we can only participate in by electronic means because of the current situation of COVID-19 pandemic. I wish all of us and our families enjoy good health.

As we all know, UPOV is committed to providing and promoting an effective system of plant variety protection, and China is one of beneficiaries of the system. Since joining UPOV in 1999, China has made remarkable achievements in the protection of new varieties. At present, the annual number of applications for PBR has ranked the first among UPOV members for several consecutive years. By the end of 2020, PVP office of the Ministry of Agriculture and Rural Affairs had received 1,604 applications of new fruit varieties, and 628 were granted. Among them, the number of foreign applications was 370, involving 20 countries, which demonstrated the recognition of China's PVP system. The genera and species with the most applications include apple, citrus, kiwifruit, pear, grape and peach. All of them are traditional Chinese fruits. In June of this year, the transfer fee of the apple variety "Qincui" and the pear variety "Danxiahong" reached 1.8 and 3.4 million US dollars, respectively. It is well illustrated that PVP has stimulated the innovation of plant breeders and provided more and better new varieties to the society.

In order to do a good job in the protection of plant varieties, we have always been committed to improving technical support. At present, MARA has established a DUS tests system consisting of 1 headquarter, 27 test sub-centers and 6 professional test stations. Among them, Zhengzhou Fruit DUS Tests Station and Xingcheng Fruit Station are responsible for DUS testing of fruit varieties. MARA has released 11 batch of protection list, including 41 fruit genera or species, of which DUS Test Guidelines were developed. And other 15 TGs are under development currently. In order to improve the efficiency of DUS tests, we are also exploring to apply molecular technology on fruit variety identification, 6 molecular standards based on SSR markers and 1 standard based on MNP have been released. I hope that all of you can fully communicate and share your experiences during the meeting.

In order to further improve PVP, we initiated the revision of the "Regulations on the Protection of New Plant Varieties" in 2016. Working with the relevant authorities, MARA is actively promoting the publication of the revisions of the Seed Law and the PVP Regulations at the same time this year. This work has been drawn great attention by global seed industry stakeholders and I believe there will be positive progress in the near future.


Once again, I welcome everyone's participation, and hope that the epidemic will come to the end as soon as possible and we will see each other in person very soon.

I wish this meeting a complete success.

Thank you.

[Annex III follows]

PRESENTATION FROM BY MR. JIANFU JIANG, SENIOR EXAMINER, DUS TESTS STATION FOR PLANT VARIETY PROTECTION IN ZHENGZHOU, MINISTRY OF AGRICULTURE AND RURAL AFFAIRS





Technical Working Party for Fruit Crops
Fifty-Second Session
Zhengzhou, China, July 12 to 16, 2021

Fruit DUS Test in China

-A case for grape and peach

Dr. Jianfu JIANG & Mr. Changwen CHEN

Zhengzhou DUS Tests Station for Plant Variety
Protection, Ministry of Agriculture and Rural
Affairs, P. R. China



Test base of Zhengzhou DUS station



Various peach varieties collected



Fruit shapes of peach



Flesh color of peach



Various types of grapes collected



Different berry shapes



Various grape leaf



Guidelines for the conduct of tests for DUS of grape and peach in China

ICS 65.020.20
B 05

NY

中华人民共和国农业行业标准

NY/T 2563—2014

植物新品种特异性、一致性和稳定性
测试指南 葡萄

Guidelines for the conduct of tests for distinctness, uniformity and stability—
Grapevine
(*Vitis* L.)
(UPOV: TG/50/9, Guidelines for the conduct of tests for distinctness,
uniformity and stability—Grapevine, NEQ)

2014-03-24 发布

2014-06-01 实施

中华人民共和国农业部 发布

ICS 65.020.20
B 05

NY

中华人民共和国农业行业标准

NY/T 2341—2013

植物新品种特异性、一致性和稳定性
测试指南 桃

Guidelines for the conduct of tests for distinctness, uniformity and stability—
Peach
(*Prunus persica* (L. Batsch))
(UPOV: TG/53/7, Guidelines for the conduct of tests for distinctness,
uniformity and stability—Peach, NEQ)

2013-05-20 发布

2013-08-01 实施

中华人民共和国农业部 发布



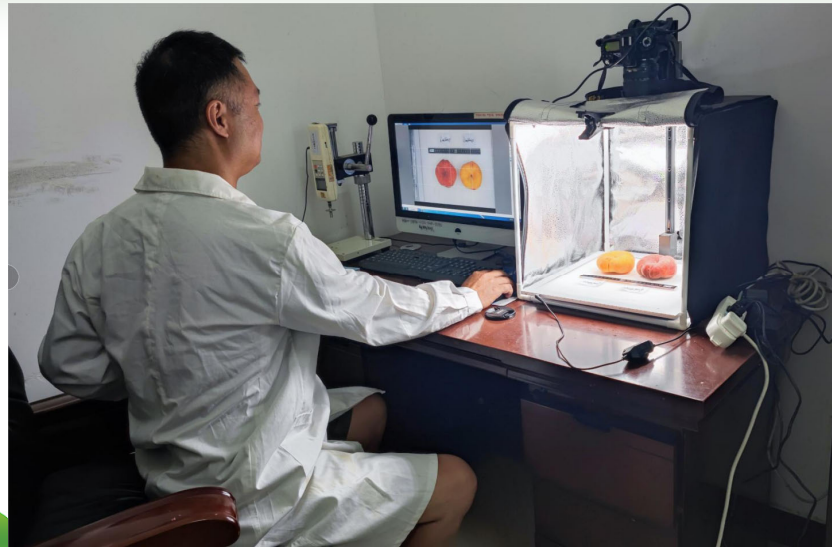
Collect the phenological data of peach



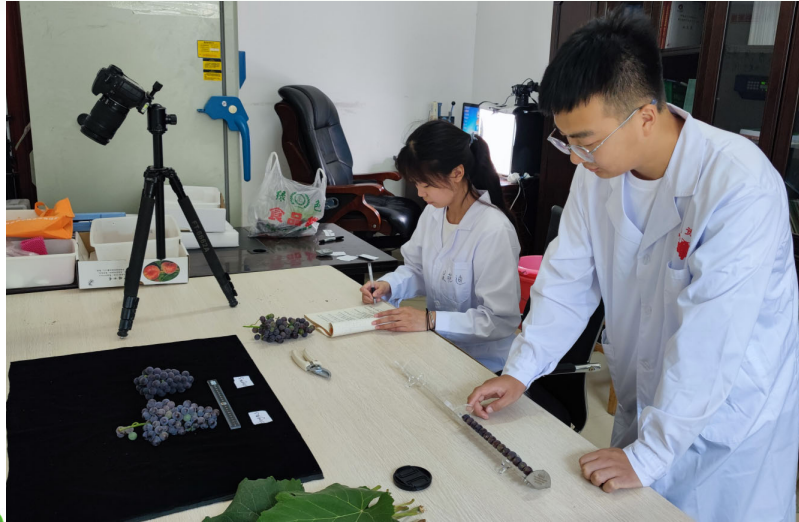
Collect the phenological data of grape



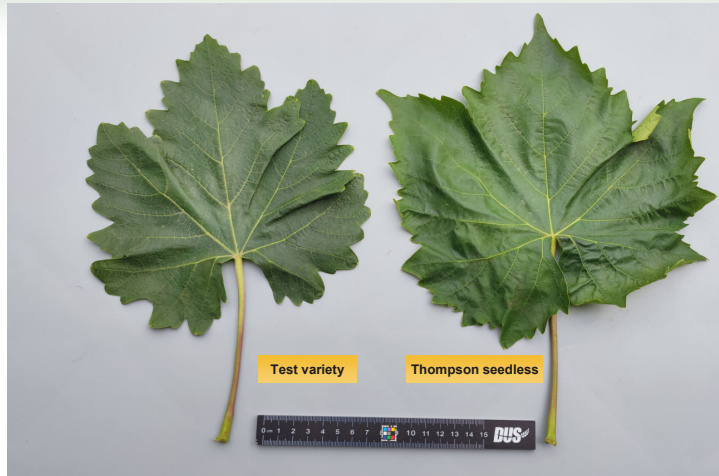
Take pictures



Measure Berry size



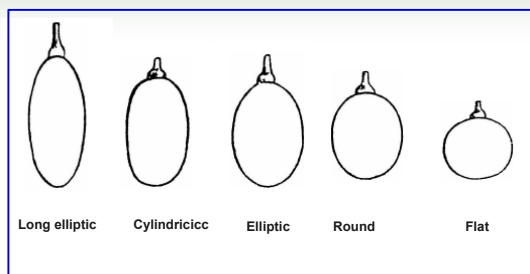
**Mature leaf: arrangement of lobes of
petiole sinus**



Bunch: size



Discussion 1: Determination of berry shape



Long elliptic

Cylindric

Elliptic

Round

Flat

SI(shape index)=Longitudinal
diameter / transverse diameter

When SI:

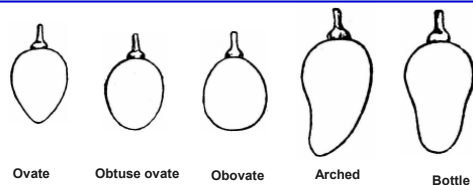
Long elliptic ≥ 1.6

$1.3 \leq \text{Cylindric} < 1.6$

$1.1 \leq \text{Elliptic} < 1.3$

$1.0 \leq \text{Round} < 1.1$

Flat < 1.0



Ovate

Obtuse ovate

Obovate

Arched

Bottle



Discussion 2: Determination of berry firmness of flesh

Berry firmness of flesh		
Soft or slightly firm	Pinot Noir	1
Moderately firm	Italia	2
Very firm	Red Globe	3



1

Pinot Noir



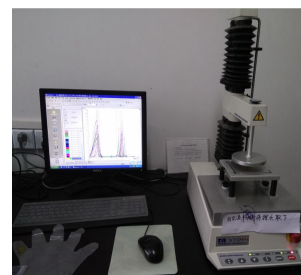
2

Italia



3

Red Globe

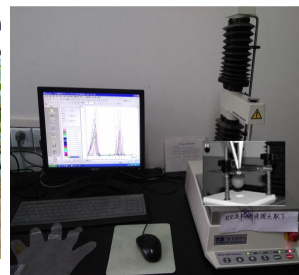


Texture analyzer
(Giacosa et al.2014)



Discussion 2: berry ease of detachment from pedical

Berry : ease of detachment from pedical		
Difficult	Red Globe	1
Moderately easy	Muscat Hamburg	2
Very easy	Beni Fuji	3



Texture analyzer
(Rolle et al. 2011)

1 Red Globe 2 Muscat Hamburg 3 Red Globe



Discussion 3: Determination of berry thickness of skin

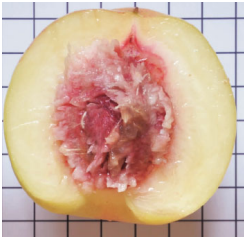
Berry thickness of skin		
Thin	Thompson seedless	1
Medium	Muscat Hamburg	2
Thick	Kyoho	3



1 Thompson seedless 2 Muscat Hamburg 3 Kyoho



Fruit:thickness of skin	thin	Yulu	1
	medium	Okubo	2
	thick	Ruiguang 18	3



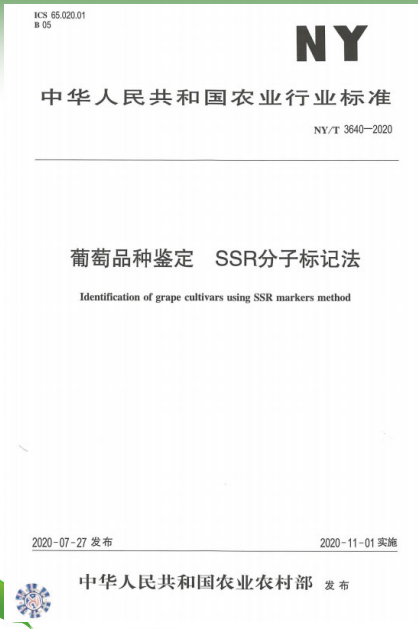
1
Yulu



2
Okubo

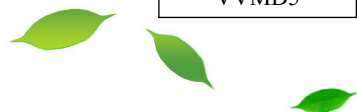


3
Ruiguang 18





	Summer Black	Zaoxiaxiang	Sanbenti	Zaoxiawuhe
VVMD28	223/223	223/223	223/223	225/223
VVMD32	236/236	236/236	236/236	236/236
VVMD27	177/177	177/177	177/177	177/177
VrZAG79	240/240	240/240	240/240	240/240
VVMD7	237/237	237/237	237/237	237/237
VrZAG62	184/184	184/184	184/184	184/184
VVMD25	238/238	238/238	238/238	238/238
VVS2	131/131	131/131	131/131	131/131
VVMD5	229/229	229/229	229/229	229/229



Thank you for your attation.



PRESENTATION BY MS. WANTONG ZHAO, EXAMINER, DUS TESTS STATION FOR CITRUS PLANT
VARIETY PROTECTION IN CHONGQING, MINISTRY OF AGRICULTURE AND RURAL AFFAIRS,
ON DUS EXAMINATION OF GRAPE, PEACH AND CITRUS VARIETIES IN CHINA



Citrus DUS Test in China

Ms. ZHAO Wantong

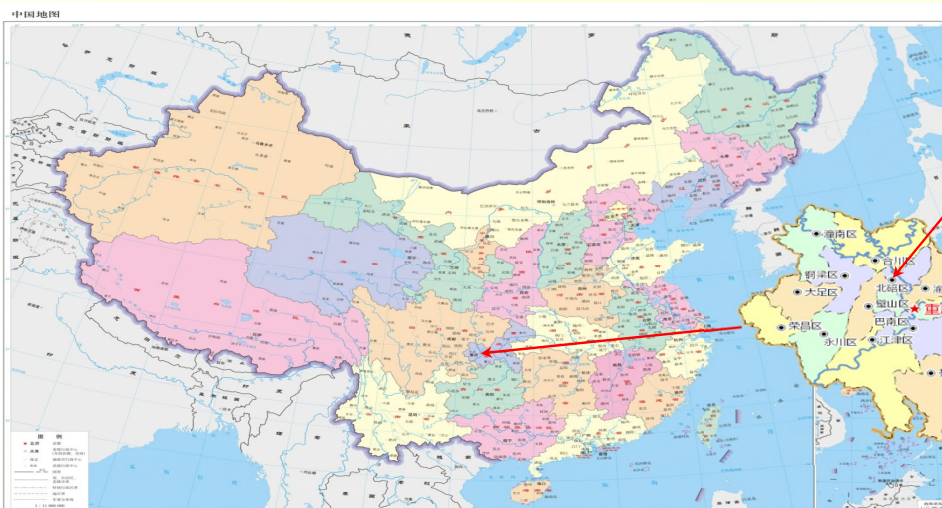
Chongqing DUS Tests Station

for Citrus Plant Variety Protection, MARA, P. R. China

Location of station



CRIC



Chongqing

About Citrus Germplasm Repository

Established on 1962, the National Citrus Germplasm Repository (NCGR) is the only national field gene bank for *ex situ* preservation of citrus germplasm resources in China. Currently, NCGR is holding over 1,500 accessions, including 24 representative species and 14 varieties from citrus and its 8 relative genera of Rutaceae family.

National Citrus Germplasm Repository



Major types of citrus

Mandarins



Oranges



Kumquats



Trifoliate oranges



Pummelos

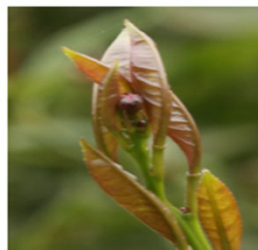
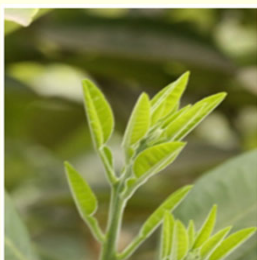


Citrons



Lemons

Characteristics of leaves

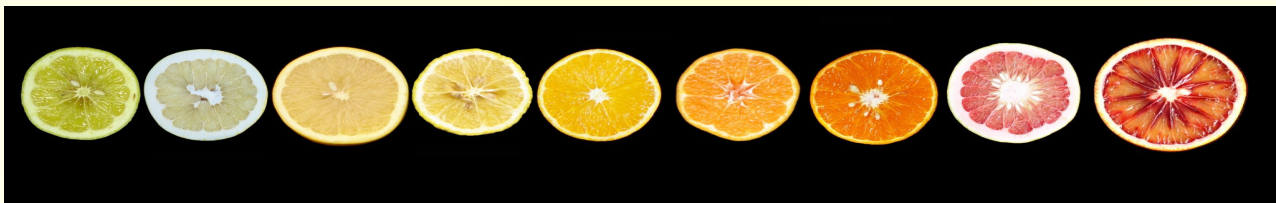
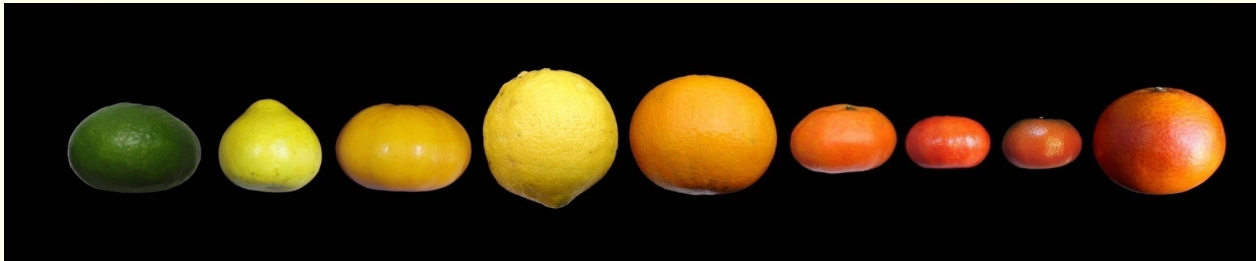




Characteristics of citrus fruits



Characteristics of citrus fruits



Guidelines for the conduct of tests for DUS of citrus

ICS 65.020.20
B 05

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中华人民共和国农业行业标准

NY/T 2435—2013

植物新品种特异性、一致性和稳定性 测试指南 柑橘

Guidelines for the conduct of tests for distinctness, uniformity and stability—
Citrus
(Citrus L.)

(UPOV: TG/201/1, Guidelines for the conduct of tests for distinctness, uniformity and stability—Mandarin and their hybrids, NEQ)
(UPOV: TG/202/1, Guidelines for the conduct of tests for distinctness, uniformity and stability—Oranges and their hybrids, NEQ)
(UPOV: TG/203/1, Guidelines for the conduct of tests for distinctness, uniformity and stability—Lemons and limes and their hybrids, NEQ)
(UPOV: TG/204/1, Guidelines for the conduct of tests for distinctness, uniformity and stability—Grapefruit and pummelo and their hybrids, NEQ)

2013-09-10 发布

2014-01-01 实施

中华人民共和国农业部 发布

A.1 柑橘基本性状

见表 A.1。

表 A.1 柑橘基本性状表

序号	性 状	观测时期 和方法	表达状态	标准品种				代码
				甜橙	宽皮橘	柚类	柠檬	
1	* 植株; 树姿 PQ (+)	25 VG	直立	先锋橙	3 号椪柑	沙田柚	里斯本	1
			开张	锦橙	南丰蜜橘	玉环柚	维尔纳	2
			披垂	华盛顿脐橙	卡拉	晚白柚		3
2	春梢: 刺数量 QN	22 VG	无或极少		宫川			1
			少		3 号椪柑			2
			多		晚蜜 3 号			3
	春梢: 刺长度	22	短		阿凡娜	马叙	尤力克	1

Identification of Citrus varieties-SSR marker method



Testing work

Field observation



Testing work

Measurement of the fruit



Testing work

Measurement of the fruit



In the testing report

Comparison of the leaves

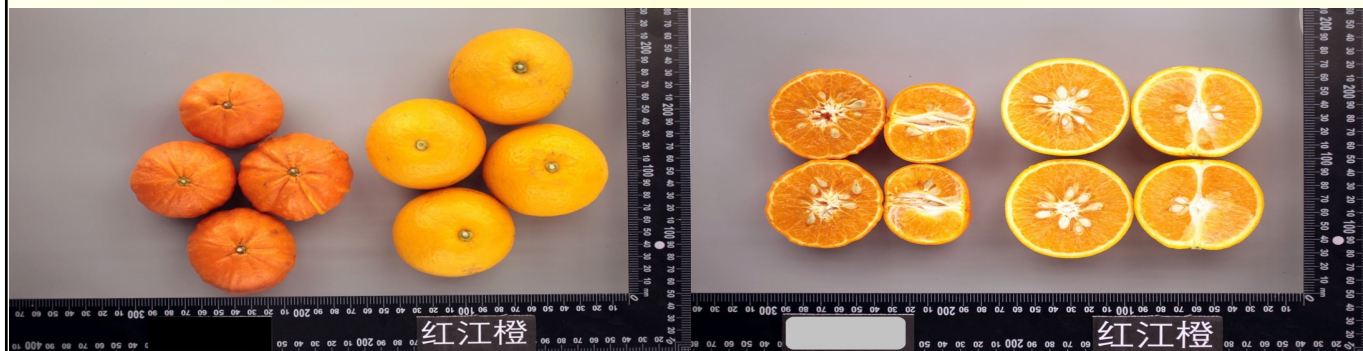


In the testing report

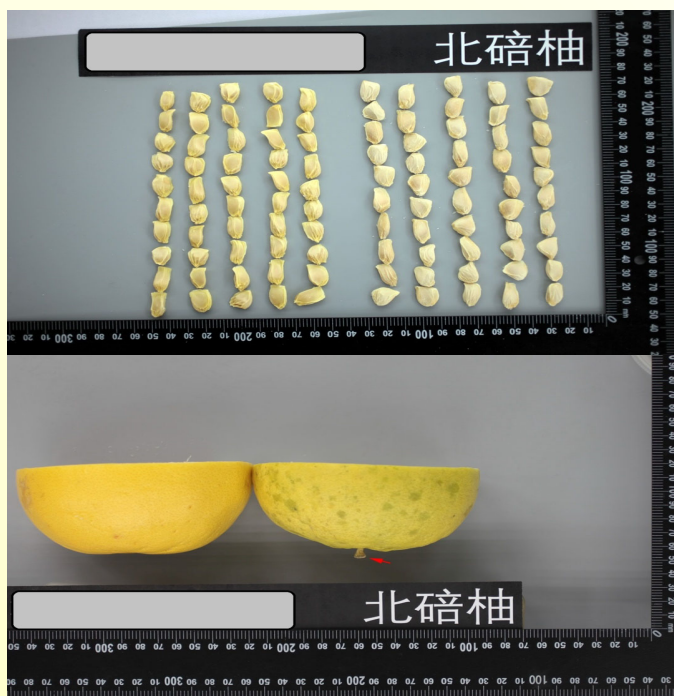
Distinctness of the fruit characters



In the testing report Distinctness of the fruit characters



In the testing report Distinctness the fruit characters



Discussion

A . Selection of right similar varieties for the test is not easy in the case of test natural hybrid. It is difficult to identify the paternal line, especially in breeder's test.

B . Citrus fruits include large diversity of varieties. They have been classified into several distinguished groups. It may need to develop the individual test guideline for each of them.



THANK YOU !



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

by August 27, 2021Full draft Test Guidelines

Species	Basic Document(s)	Leading expert(s)
*Apricot (<i>Prunus armeniaca</i> L.) (Revision)	TG/70/5(proj.5)	Mr. Zsolt Szani (HU)

Partial revisions

Species	Basic Document(s)	Leading expert(s)
Actinidia (<i>Actinidia</i> Lindl.) (Partial revision: Technical Questionnaire)	TG/98/7 Rev. Corr., TWP/5/13, Annex XV	
Japanese Plum (<i>Prunus salicina</i> Lindl.) (Partial revision: Technical Questionnaire)	TG/84/4 Corr. 2 Rev., TWP/5/13, Annex XIV	
Peach (<i>Prunus persica</i> (L.) Batsch) (Partial revision: Technical Questionnaire)	TG/53/7 Rev., TWP/5/13, Annex XIII	
Prunus Rootstocks (<i>Prunus</i> L.) (Partial revision: Technical Questionnaire)	TG/187/2, TWP/5/13, Annex XVI	

DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWF/53

(* indicates possible final draft Test Guidelines)

(Guideline date for Subgroup draft to be circulated by Leading Expert: April 1, 2022

Guideline date for comments to Leading Expert by Subgroup: April 29, 2022)

New draft to be submitted to the Office of the Union

May 27, 2022

Full draft Test Guidelines

Species	Basic Document(s)	Leading expert(s)	Interested experts (States/Organizations) ¹
*Apple (fruit varieties) (Revision) (<i>Malus domestica</i> Borkh.)	TG/14/10(proj.4)	Mr. Erik Schulte (DE)	AU, BR, CA, CL, CN, CZ, FR, HU, JP, KR, MX, NL, NZ, PL, QZ, RU, ZA, CIOFORA, Office
Date Palm (<i>Phoenix dactylifera</i>)	TG/PHOEN_DAC (proj.1)	Mr. Ben-Zion Zaidman (IL)	BR, MA, MX, OM, TN, Office
Grapevine (<i>Vitis</i> L.) (Revision)	TG/50/10(proj.4)	Mr. Luca Aggio (IT)	AU, BR, CA, CL, CN, CZ, DE, ES, FR, HU, JP, KR, MX, NZ, QZ, RU, SK, ZA, CIOFORA, Office
Guava (<i>Psidium guajava</i> L.; <i>Psidium cattleianum</i> Sabine var. <i>littorale</i> (Raddi) Fosberg) (Revision)	TG/110/4(proj.2)	Ms. Ling Gao (CN)	BR, KE, KR, MX, MY, QZ, Office
Goji (<i>Lycium barbarum</i> L., <i>L. chinense</i> Mill., <i>L. cylindricum</i> Kuang & A. M. Lu, <i>L. dasystemum</i> Pojark., <i>L. ruthenicum</i> Murray, <i>L. truncatum</i> Y. C. Wang, <i>L. yunnanense</i> Kuang & A. M. Lu)	TG/LYCIUM_BAR (proj.1)	Ms. Chuanhong Zhang (CN)	DE, KR, QZ, Office
Hazelnut (<i>Corylus avellana</i> L.; <i>Corylus colurna</i> L.) (Revision)	TG/71/4(proj.2)	Mr. Flavio Roberto de Salvador (IT)	TWO, CN, CZ, DE, ES, HU, QZ, Office
Lemon (Lemons and Limes (<i>Citrus</i> L. - Group 3)) (Revision)	TG/203/1 Rev.	Ms. Nuria Urquía Fernández (ES)	BR, CN, FR, IL, JP, MA, MX, QZ, Office
Mandarin (<i>Citrus</i> L. – Group 1) (Revision)	TG/201/1 Rev.	Ms. Nuria Urquía Fernández (ES)	BR, CN, FR, IL, JP, KR, MA, MX, NZ, QZ, Office
*Mulberry (<i>Morus</i> L.)	TG/MORUS(proj.3)	Mr. Yosuke Abe (JP)	TWO, BR, CN, HU, IT, KR, QZ, Office
Raspberry (<i>Rubus idaeus</i> L.) (Revision)	TG/43/8(proj.1)	Mr. Erik Schulte (DE)	AU, CA, CN, CZ, HU, IT, JP, KE, KR, MX, NZ, QZ, CIOFORA, Office
Sour Cherry (<i>Prunus cerasus</i> L.); Duke Cherry (<i>Prunus xgondouinii</i> (Poit. & Turpin) Rehder) (Revision)	TG/230/2(proj.1)	Ms. Márkné Deák Szilvia (HU)	CA, CN, CZ, DE, QZ, Office
*Strawberry (<i>Fragaria</i> L.) (Revision)	TG/22/11(proj.3)	Mr. Erik Schulte (DE)	AU, CA, CL, ES, JP, KE, KR, MA, NZ, PL, PT, QZ, CIOFORA, Office

¹ for name of experts, see List of Participants

Species	Basic Document(s)	Leading expert(s)	Interested experts (States/Organizations) ¹
Sweet Cherry (<i>Prunus avium</i> (L.) L.) (Revision)	TG/35/8(proj.2)	Ms. Carole Dirwimmer (FR)	AU, BG, CA, CZ, DE, ES, HU, IT, JP, KR, NZ, PL, QZ, RO, SK, ZA, CIOPORA, Office
Trifoliate Orange ((<i>Poncirus</i>) (<i>Citrus</i> L. - Group 5)) (Revision)	TG/83/4 Rev.	Ms. Nuria Urquía Fernández (ES)	CN, FR, JP, MA, NZ, QZ, Office

Partial revisions

Species	Basic Document(s)	Leading expert(s)	Interested experts (States/Organizations) ²
Oranges (<i>Citrus</i> L. - Group 2) (Partial revision: move relevant botanical names from the “principle botanical names” box to the “alternative botanical names” box)	TG/202/1 Rev. 2, TWP/5/4, Annex II		TWF
Pummelo (Grapefruit and) (<i>Citrus</i> L. - Group 4) (Partial revision: move relevant botanical names from the “principle botanical names” box to the “alternative botanical names” box)	TG/204/1 Rev. 2, TWP/5/4, Annex II		TWF
Walnut (<i>Juglans regia</i> L.) (Partial revision: Characteristics 10 and 11; to add new chars. “Time of vegetative bud burst”, “Predominant location of fruit buds”)	TG/125/7	Ms. Andrea Povolná (CZ)	DE, ES, HU, JP, QZ, Office

Possible Test Guidelines to be discussed in the future

Species	Basic Document(s)
Argania (<i>Argania spinosa</i> (L.) Skeels)	TG/ARGAN(proj.5)
Carambola (<i>Averrhoa carambola</i> L.)	NEW
Cape Gooseberry (<i>Physalis peruviana</i> L.)	NEW
Japanese Plum (<i>Prunus salicina</i> Lindl.) (Revision)	TG/84/4 Corr. 2 Rev.
Soursop (<i>Annona muricata</i> L.)	NEW

[End of Annex IV and of document]

² for name of experts, see List of Participants