

**Technical Working Party for Agricultural Crops**

**TWA/48/9**

**Forty-Eighth Session  
Montevideo, Uruguay, September 16 to 20, 2019**

**Original:** English  
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**REPORT**

*Adopted by the Technical Working Party for Agricultural Crops*

*Disclaimer: this document does not represent UPOV policies or guidance*

Opening of the session

1. The Technical Working Party for Agricultural Crops (TWA) held its forty-eighth session in Montevideo, Uruguay, from September 16 to 20, 2019. The list of participants is reproduced in Annex I to this report.
2. The session was opened by Ms. Cheryl Turnbull (United Kingdom), Chairperson of the TWA, who welcomed the participants and thanked Uruguay for hosting the TWA session.
3. The TWA was welcomed by Mr. Pedro Queheille, President of the National Seed Institute (INASE) and Mr. Daniel Bayce, Executive Director of the National Seed Institute (INASE).
4. The TWA received a presentation by Mr. Pedro Queheille, on Plant Variety Protection in Uruguay. A copy of the presentation is provided in Annex II to this report.

Adoption of the agenda

5. The TWA adopted the agenda as reproduced in document TWA/48/1 Rev..

Short reports on developments in plant variety protection

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

6. The TWA noted the information on developments in plant variety protection from members and observers provided in document TWA/48/3 Prov. The TWA noted that reports submitted to the Office of the Union before August 30, 2019, were included in document TWA/48/3 Prov. and reports submitted until September 20, 2019, would be included in the final version of document TWA/48/3.

*(b) Reports on developments within UPOV*

7. The TWA received a presentation from the Office of the Union on latest developments within UPOV, a copy of which is provided in document TWA/48/2.

TGP documents

8. The TWA considered document TWP/3/1 Rev. and TWA/48/4.

*Matters for adoption by the Council in 2019*

9. The TWA noted the revisions previously agreed by the TC to documents TGP/7, TGP/8, TGP/10, TGP/14 and TGP/15 that would be proposed for adoption by the Council at its fifty-third ordinary session, to be

held in Geneva on November 1, 2019, subject to approval by the CAJ, at its seventy-sixth session, to be held in Geneva on October 30, 2019.

*Possible future revisions of TGP documents*

TGP/7: Development of Test Guidelines

*Characteristics which only apply to certain varieties*

10. The TWA considered document TWP/3/9.

11. The TWA considered the request to provide suitable examples of a quantitative and of a pseudo-qualitative characteristic to demonstrate how the proposed approach might be used in a way that would not present risks for decisions on distinctness.

12. The TWA agreed with the TWO that when a structure was “absent or very weak” on a plant part, the observation of further characteristics on that structure could be difficult or impractical. The TWA agreed that the following example provided by the TWO was suitable to demonstrate how the proposed approach could be used in a way that would not present risks for decisions on distinctness:

(QN) “Presence of hairs: absent or very weak.”  
(PQ) “Hair: color”

13. The TWA noted that the following example provided by the TWF contained a qualitative characteristic and agreed that might not be a suitable example to demonstrate how the proposed approach might be used without further information about the characteristic:

Characteristic 17 (QN): “Leaf: predominant type: entire (1); three-lobed (2); five-lobed (3)  
Characteristic 18: “Only varieties with predominant leaf type: entire: Leaf: shape...”

14. The TWA considered the request to provide suitable examples of unsuitable cases to demonstrate the risks for decisions on distinctness of excluding varieties from observation on the basis of a preceding quantitative or pseudo-qualitative characteristic.

15. The TWA agreed that the risk for distinctness due to the proposed approach was low because a variety would not be considered distinct from another on the basis of missing information about a characteristic and the varieties would have to be grown for side-by-side comparison.

16. The TWA agreed that the proposed approach could increase the difficulty to exclude varieties for comparison and increase the size of growing trials however that is unlikely to have a significant effect.

17. The TWA agreed that the risk of two examiners making different decisions was present but the probability of the proposed approach impacting the final distinctness decision was low.

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

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

18. The TWA noted the invitation by the United Kingdom for interested experts to get in contact for testing the new software containing the improved method of calculation of COYU.

19. The TWA noted the invitation by the TWC for the expert from the United Kingdom to draft a replacement section for document TGP/8 on the method of calculation of COYU.

*Data Processing for the Assessment of Distinctness and for Producing Variety Descriptions*

20. The TWA considered documents TWP/3/10 and TWA/48/7.

21. The TWA considered the summary of different approaches used by members of the Union to convert observations into notes for producing variety descriptions of measured characteristics, as set out in document TWP/3/10, Annex II.

22. The TWA noted the request by the TC for the experts from France, Germany, Japan and the United Kingdom to provide information on the circumstances in which their methods would be suitable, including the method of propagation of the variety and other factors that had been used in deciding to use the method and noted the additional information provided by Japan and the United Kingdom, as reproduced in document TWA/48/7.

23. The TWA noted that software packages incorporating some of the methods presented in document TWP/3/10 were available for PVP offices through the UPOV members providing the information on their methods.

24. The TWA agreed that a flow chart or decision-tree could facilitate selection of a method to be used for converting observations into notes. The TWA agreed to propose the TWC experts from France, Germany, Japan and the United Kingdom to consider producing a flow chart with the following elements as starting point:

- Propagation type: self-pollinated; cross-pollinated
- Type of test to be performed
- Is a set of example varieties available to demonstrate the range of expression (e.g. notes 3; 5; 7)?
- Does the reference collection contain varieties to demonstrate the full range of expression of the characteristic (e.g. notes 1 to 9)?

25. The TWA noted that the Republic of Korea was developing a new method to convert observations into notes.

#### TGP/14: Glossary of Terms Used in UPOV Documents

##### *Color names for the RHS Colour Chart*

26. The TWA considered document TWP/3/11.

27. The TWA agreed that color charts were not commonly used in Test Guidelines for agricultural crops. It noted the development of proposals for the revision of the list of UPOV Color Groups in document TGP/14 "Glossary of Terms used in UPOV Documents" on the basis of the color groups set out in document TWP/3/11, Annex I, and revision of document TGP/14, Section 2, Subsection 3: "Color", and Subsection 3: Annex: "Color names for the RHS Colour Chart", to reflect the introduction of the revised list of UPOV Color Groups.

#### TGP/15: Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)

##### *New example: Characteristic-specific marker with incomplete information on state of expression*

28. The TWA considered document TWP/3/12.

29. The TWA noted that the TC had agreed that document TGP/15 should be amended to clarify that it was the responsibility of the authority to decide on the reliability of the link between the gene and the expression of the characteristic.

30. The TWA noted that the TC had agreed to include an explanation in document TGP/15 that it would be the responsibility of the respective TWP and the TC to assess whether the reliability of the link between the gene and the expression of the characteristic was satisfied in order to include a method in the Test Guidelines.

31. The TWA noted that the TC had agreed that a new example should be added to document TGP/15 to illustrate a situation where the characteristic-specific marker does not provide complete information on the state of expression of a characteristic.

32. The TWA considered the proposal for a new example be added to document TGP/15 to illustrate a situation where the characteristic-specific marker does not provide complete information on the state of expression of a characteristic, as set out in the Annex to document TWP/3/12.

33. The TWA agreed that it should be clarified whether the sources of resistance to ToMV Strain 0 were genes Tm1/tm1 and Tm2/Tm2<sup>2</sup>/tm2 or whether there were other known sources of resistance.

34. The TWA agreed that it should be clarified whether different markers were linked to the alleles Tm2 and Tm2<sup>2</sup>. In case both alleles were linked to the same marker, the two columns for the resistant alleles should be combined in Table 1 “Schematic overview of resistance to Tomato mosaic virus and resistance alleles.”

35. The TWA agreed that the guidance should clarify that, according to the procedure, varieties claimed as susceptible would also be included in the bioassay.

*New proposals for revisions of TGP documents*

TGP/7: Development of Test Guidelines

*Procedure for partial revision of UPOV Test Guidelines*

36. The TWA noted that the TC had considered a proposal to revise the procedure for partial revisions of Test Guidelines.

37. The TWA noted that the TWF had been invited to clarify under which circumstances changes would need to be implemented to UPOV Test Guidelines at short notice.

*Proprietary method of assessment for male sterility*

38. The TWA noted that the TC, at its fifty-fourth session, had agreed that members should propose any alternative methods or markers for DNA marker tests in Test Guidelines.

*Suitability of characteristics in previous versions of Test Guidelines*

39. The TWA noted that the TC, at its fifty-fourth session, had recalled that it was the responsibility of the TWPs to assess whether characteristics met the requirements for a characteristic, as set out in document TGP/7, including those characteristics in previously adopted Test Guidelines.

*Presentation of full scale of notes for quantitative characteristics in Test Guidelines*

40. The TWA considered the proposal for the revision of document TGP/7 to have all states of expression for quantitative characteristics presented in Test Guidelines and agreed that it would not be possible to reach a conclusion on the matter at this stage.

41. The TWA noted that presenting all states of expression in Test Guidelines could be useful for less experienced DUS examiners and other users of Test Guidelines, such as breeders. The TWA also noted that presenting all states of expression was important for online application systems, including national online application systems and UPOV PRISMA.

42. The TWA noted the standard explanation in Test Guidelines that in the case of quantitative characteristics with 5 or more states, an abbreviated scale may be used, although other states of expression exist to describe varieties and should be used as appropriate. The TWA noted that presenting all states of expression could increase the length of the Test Guidelines and render the document less practical to be used on the field by experienced examiners.

TGP/12: Guidance on Certain Physiological Characteristics

*Explanations on disease resistance characteristics*

43. The TWA noted that the TC, at its fifty-fourth session, had agreed to await the TWV discussion on disease resistance characteristics in DUS examination before considering whether to develop further guidance.

*Program for the development of TGP documents*

44. The TWA noted the program for the development of TGP documents, as set out in document TWP/3/1 Rev., Annex VI.

Guidance for drafters of Test Guidelines

45. The TWA considered document TWP/3/8.
46. The TWA noted the issues on the web-based TG template addressed during 2018, as set out in document TWP/3/8, paragraph 11.
47. The TWA noted the issues currently being addressed on the web-based TG template, as set out in document TWP/3/8, paragraph 12.
48. The TWA noted that the Office of the Union would issue a circular to identify requirements of UPOV members for the development of individual authorities' test guidelines using the web-based TG template.
49. The TWA received a demonstration by the Office of the Union and noted that training on the web-based TG template would be provided to all TWPs, at their sessions in 2019.

Molecular Techniques

50. The TWA considered document TWP/3/7.

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

51. The TWA noted the report on developments in the TWPs and BMT, as set out in document TWP/3/7, paragraphs 7 to 72.
52. The TWA noted the draft agenda for the BMT at its eighteenth session, as set out in document TWP/3/7, paragraph 73.

*Developments at the fifty-fourth session of the Technical Committee*

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

53. The TWA noted that the European Union, France and the Netherlands would be invited to prepare a new draft of document UPOV/INF/17 for consideration at the eighteenth session of the BMT, as set out in document TWP/3/7, paragraph 75.

Cooperation between international organizations

54. The TWA noted that the TC had agreed that UPOV and OECD should make progress on the matters previously agreed by the TC, namely:

(a) to develop a joint document explaining the principal features of the systems of the OECD, UPOV and ISTA;

(b) to develop an inventory on the use of molecular marker techniques, by crop, with a view to developing a joint OECD/UPOV/ISTA document containing that information, in a similar format to UPOV document UPOV/INF/16 "Exchangeable Software"; and

(c) the proposal for the BMT to develop lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques for consideration by the TC.

55. The TWA noted that ISTA would be invited to join the above initiatives, when in a position to do so.

56. The TWA noted that the Office of the Union would prepare a draft of a joint document explaining the principal features of the systems of the OECD, UPOV and ISTA, for consideration by the BMT, at its eighteenth session, on the basis of relevant texts from the World Seed Partnership and the frequently asked question on the use of molecular techniques in the examination of DUS, as set out in document TWP/3/7, paragraph 79.

57. The TWA considered the following elements for the inventory on the use of molecular marker techniques, by crop:

Country or Intergovernmental Organization using molecular marker technique
Source [the name of the Authority] and Contact details [email address]
Type of molecular marker technique
Crop (s) for which the molecular marker technique is used [botanical name(s) and UPOV code(s) to be provided]
Purpose of the use of the molecular technique [UPOV model "Characteristic-Specific Molecular Markers", UPOV model "Combining Phenotypic and Molecular Distances in the Management of Variety Collections", Purity, Identity, Verification of hybridity]
Is the molecular marker technique used as part of Seed Certification in the last two years? [National certification, OECD certification] [relevant for OECD seed schemes]
In the last 2 years, how many times did the Authority use the molecular marker techniques?
The molecular marker technique is covered by [UPOV Test Guideline(s), UPOV TGP document(s), other document(s) (please specify)]
Is the molecular technique validated? [If yes, please specify a particular organization or authority] [relevant for OECD seed schemes]

58. The TWA endorsed the elements for the inventory and agreed that the meaning of the term "validation" should be clarified in the last question. The TWA agreed that the question could lead to confusion and should be considered for exclusion from the survey.

59. The TWA agreed that the question "In the last 2 years, how many times did the Authority use the molecular marker techniques?" should be clarified to explain whether the value provided referred to routine or exceptional use of the technique (e.g. screening of variety collections).

60. The TWA agreed to propose an additional question on whether respondents had constituted databases with information obtained from the molecular markers used.

61. The TWA agreed that the survey should be coordinated with OECD to avoid duplication of work, in particular when the same respondents would also receive the survey from UPOV.

62. The TWA noted that, on the basis of the comments received from the TWPs and BMT, proposed elements for the inventory on the use of molecular marker techniques, would be presented for consideration by the TC at its fifty-fifth session, as set out in document TWP/3/7, paragraph 82.

63. The TWA noted that, subject to agreement by the TC at its fifty-fifth session, a circular would be issued to request the member of the Union to complete the survey as a basis to develop the inventory on the use of molecular marker techniques, by crop, after coordination with the OECD Seed Schemes Bureau, as set out in document TWP/3/7, paragraph 83.

64. The TWA noted that the BMT, at its eighteenth session, would be invited to develop lists of possible joint initiatives with OECD and ISTA in relation to molecular techniques for consideration by the TC at its fifty-fifth session, as set out in document TWP/3/7, paragraph 84.

Revision of document TGP/15 "Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)"

*Revision of the model "Combining phenotypic and molecular distances in the management of variety collections"*

65. The TWA noted that the Model "Combining Phenotypic and Molecular Distances in the Management of Variety Collections" of document TGP/15, Section 2.2, would be revised at a later stage once an additional threshold level has been implemented in France, as set out in document TWP/3/7, paragraph 87.

*Proposal for inclusion of a new model “genetic selection of similar varieties for the first growing cycle”*

66. The TWA noted that the TC had agreed with the inclusion of a new model “Genetic selection of similar varieties for the first growing cycle: example French Bean” in document TGP/15, as presented in document TWP/3/7, Annex II

67. The TWA noted that a draft of document TGP/15/2 “Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)” incorporating the new model would be presented to the seventy-sixth session of the CAJ, to be held on October 30, 2019, and if agreed by the CAJ, a draft of document TGP/15/2 would be presented for adoption by the Council at its fifty-third ordinary session, to be held on November 1, 2019, on that basis.

Report of work on molecular techniques in relation to DUS examination

68. The TWA noted that the text from document UPOV/INF/18/1 will be introduced in document TGP/15 to clarify that it was the responsibility of the authority to decide on the reliability of the link between the gene and the expression of the characteristic, as set out in document TWP/3/7, paragraph 93.

69. The TWA noted that document TGP/15 will include an explanation that it is the responsibility of the respective TWP and the TC to assess whether the reliability of the link between the gene and the expression of the characteristic is satisfied in order to include a method in the Test Guidelines, as set out in document TWP/3/7, paragraph 94.

70. The TWA noted that matters concerning characteristic-specific markers with incomplete information on state of expression are considered in document TWP/3/12.

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

71. The TWA noted the results of the coordination session at the seventeenth session of the BMT, as set out in document TWP/3/7, paragraphs 62 to 71.

72. The TWA noted that all TWPs would be invited to form discussion groups for the main crops at each TWP to allow participants to exchange information on their work on biochemical and molecular techniques and explore areas for cooperation, in order to build on the BMT outcomes and feed into the future work of the BMT, as set out in document TWP/3/7, paragraph 97.

73. The following information was provided by TWA participants:

Summary of crop and authorities currently using (or under development) molecular techniques in the agricultural sector

Argentina	Soya Bean, Cotton, Rice, Wheat, Barley
Australia	Sugarcane, Wheat, Cotton
Brazil	Soya Bean
Canada	Potato
China	Maize, Wheat, Cotton, Rape Seed, Sunflower, Potato, Sorghum, Rice, Soya Bean
Czech Republic	Maize, Wheat, Barley
Dominican Republic	Rice, Sugarcane, Cacao
European Union	Potato, Maize, Rape Seed
Germany	Potato, Maize, Rape Seed
Italy	Soya Bean, Rice, Khorasan Wheat
Japan	French bean, Adzuki Bean, Tea, Sunflower, Maize, Potato
Kenya	Tea, Tomato, Maize
Republic of Korea	30 crops
Slovakia	Potato
United Kingdom	Potato, Rape Seed
United States of America	Maize, Soya Bean
Uruguay	Soya Bean, Maize, Wheat

Summary of current use of molecular techniques in the agricultural sector

Techniques:
CAPS (JP)
Elisa (IT, UY)
MNP (CN)
PCR (IT, KE, UY)
QPCR (UY)
RAPID STS (JP)
SNP (AR, AU, CN, DE, GB, IT, JP, KR, QZ, US, UY)
SSR (BR, CN, CZ, DK*, GB, IT, JP, KR, QZ, SK) *sporadic use
Use:
DUS examination, incl. selection of similar varieties and management of variety collections (CN, CZ, KR, QZ)
complementary tool for uniformity (AR, IT)
databases for Potato (CA, DE, GB, NL, QZ, SK)
database for Maize, Rape Seed (QZ)
sample authentication (GB)
variety purity in certified seeds (IT, KR)
GMO detection (AR, IT, KR, UY)
Bt gene detection (AU)
virus assessment (KR)
variety identification (AR, BR, CN, DK, IT, UY)
market control of seed trade (UY)
enforcement (AR, JP)

Summary of possible areas of cooperation for the use of molecular techniques in the agricultural sector

International collaboration for the constitution of common databases
Addressing practical aspects such as access rights, financial issues, incl. benefit sharing and material transfer agreements
Provision of training to UPOV members on the use of BMTs in DUS examination
Sharing sets of markers and protocols to reduce size of variety collections
Cooperation on testing varieties with similar genetic background
Addressing confidentiality issues

Future program

74. The TWA noted that the TC had agreed the items for discussion on Wednesday, October 16, 2019, to facilitate discussion and cooperation between the TWC and BMT, as set out in document TWP/3/7, paragraph 101.

*Presentations on the use of molecular techniques in DUS examination*

75. The TWA received the following presentations:

- (a) "The use of biomolecular techniques in DUS testing for PVP in the European Union" by an expert from the European Union. A copy of the presentation is provided in the Annex to document TWA/48/5.
- (b) "Variety testing in Italian protocols – microsatellite fingerprinting", by an expert from Italy. A copy of the presentation is provided in the Annex to document TWA/48/8.



Cooperation in examination

76. The TWA considered document TWP/3/14.

77. The TWA noted the results of the survey of the current situation of members of the Union with regard to cooperation in examination, as set out in the Annex to document TWP/3/14.

78. The TWA noted that the UPOV Office would invite the Council representatives to identify contact the persons for international cooperation in DUS examination and that the information received would be made available on the UPOV website.

79. The TWA noted that the topic of international cooperation in DUS examination would be presented as an introduction to the agenda item "Cooperation in examination" during the normal program for the TWPs to explain the existing possibilities for cooperation between UPOV members.

80. The TWA formed discussion groups to discuss the technical concerns that prevent cooperation in DUS examination and how to overcome the technical concerns raised.

81. The TWA noted the following technical concerns raised by participants in the discussion groups:

- Regional specificity of agricultural crop varieties would not require expanding cooperation
- Genotype by environment interaction could require additional trials to generate local variety descriptions (regional adaptation of varieties)
- Lack of varieties in variety collection (varieties of local importance)
- Lack of information on similar varieties included in trial or compared against candidate (information not available on examination report)
- Lack of more detailed information on location and environment of testing
- Impossibility to observe some characteristics due to environmental conditions leading to incomplete descriptions
- Lack of experience on testing of a particular crop
- Different methods of testing (e.g. use of TGs used other than UPOV TGs, organization of trials, analysis criteria)
- Lack of harmonized TGs for minor crops
- Lack of availability of DUS test reports in required languages
- Lack of response from examination offices contacted for cooperation
- Differences in criteria for granting variety denomination
- Difficulty to transfer material for testing (phytosanitary issues)
- Lack of UPOV members in certain regions (sub-regional cooperation)
- Legal restrictions to cooperate, such as priority partners
- Difficulty to organize receiving payments from foreign applicants
- Lack of capacity to invoice the sale of test reports
- Difficulty by some companies or UPOV members to pay DUS testing fees

82. The TWA noted the following proposals from the participants in the discussion groups on how to overcome the technical concerns raised:

- Centralized testing of varieties for crops with larger regional adaptation
- Regional collaboration among PVP offices, such as conferences to strengthen technical contacts and training for calibration and harmonization
- Inform the composition of variety collections
- Establishment of quality assurance systems
- Frequent update of example varieties in UPOV TGs or creating regional sets of example varieties
- Harmonization of molecular markers and development of global databases
- Increase capacity of UPOV PRISMA to translate applications and other data to be exchanged
- Provide a platform to request DUS test reports (mediating service, including translation)
- Supporting small companies to purchase test reports

Differences in notes for the assessment of distinctness

83. The TWA considered document TWP/3/13.

84. The TWA noted existing guidance in the General Introduction and documents TGP/8, TGP/9 and TGP/14 on differences in notes for the assessment of distinctness.

85. The TWA considered the clarification provided in document TWP/3/13 on how the approach for QN characteristics could be applicable for certain states of expression in some PQ characteristics.

86. The TWA noted that the GAIA method was a pre-selection tool and was not used to compare data in the growing trial and agreed that explanations for certain shape and color characteristics could be provided in the form of a matrix indicating which state of expression could be considered as distinct from one another.

Information and databases

*(a) UPOV information databases*

87. The TWA considered documents TWP/3/4 and TWP/3/4 Add..

UPOV Code System

*UPOV code developments*

88. The TWA noted that 242 new UPOV codes were created in 2018 and a total of 8,844 UPOV codes are included in the GENIE database, as set out in document TWP/3/4, paragraph 9.

*UPOV code amendments considered by the TC at its fifty-fourth session*

89. The TWA noted that the TC, at its fifty-fourth session, had agreed not to delete the UPOV Codes for sweet corn and popcorn and for certain subspecies of *Brassica oleracea*, therefore creating exceptions to the “Guide to the UPOV Code System”, as set out in document TWP/3/4, paragraphs 15 and 32.

90. The TWA noted that amendments to the “Guide to the UPOV Code System” would be considered by the TC, at its fifty-fifth session, to be held in Geneva on October 28 and 29, 2019, as set out in document TWP/3/4, paragraph 16.

91. The TWA noted that the TC had agreed to amend the UPOV codes for subspecies in the *Mucuna*, *Epichloe* and *Neotyphodium* genera and to correct the UPOV codes for *Sesbania sesban*.

92. The TWA noted that the Office of the Union had issued Circular E-18/208 to the designated persons of the members of the Union in the TC, the CAJ, TWPs and contributors to PLUTO, announcing the amendments to UPOV codes and requesting contributors to PLUTO to use the amended UPOV codes from February 22, 2019, as set out in document TWP/3/4, paragraph 21.

93. The TWA noted that the TC agreed not to delete the UPOV Codes for *Brassica oleracea*, therefore creating an exception to the “Guide to the UPOV Code System”, as set out in document TWP/3/4, paragraph 32.

94. The TWA noted that amendments to the “Guide to the UPOV Code System” would be considered by the TC, at its fifty-fifth session, to be held in Geneva on October 28 and 29, 2019, as set out in document TWP/3/4, paragraph 33.

*Proposed amendments for consideration by the TWPs in 2019*

95. The TWA considered document TWP/3/4 Add. and the proposal to amend the UPOV code NEOTY\_LOL, in accordance with the reclassification of *Neotyphodium lolii* to *Epichloe festucae*. The TWA agreed with the proposal to delete UPOV code NEOTY\_LOL and create EPICH\_FES. The TWA noted that *Neotyphodium lolii* would be covered as a synonym of *Epichloe festucae*, under UPOV code EPICH\_FES.

*TWP checking*

96. The TWA noted the invitation to check the amendments to UPOV codes, the new UPOV codes or new information added for existing UPOV codes, and the UPOV codes used in the PLUTO database for the first time, which are provided in document TWP/3/4, Annex II, by December 31, 2019.

97. The TWA noted the invitation to submit comments on Annex II, part A “UPOV codes amendments to be checked”, part B “New UPOV codes or new information”, and part C “Crop type(s) of UPOV codes used in the PLUTO database for the first time” to the Office of the Union by December 31, 2019.

PLUTO database

*Program for improvements to the PLUTO database*

98. The TWA noted the summary of contributions to the PLUTO database from 2015 to 2018 and the current situation of members of the Union on data contribution, as presented in document TWP/3/4, Annex I.

*Content of the PLUTO database*

99. The TWA noted developments concerning possible expansion of the content of the PLUTO database, as set out in document TWP/3/4, paragraph 87.

100. The TWA noted that the proposals by the WG-DEN at its fifth session concerning possible expansion of the content of the PLUTO database would be considered by the CAJ, at its seventy-sixth session, to be held in Geneva on October 30, 2019, as set out in document TWP/3/4, paragraph 89.

*(b) Variety description databases*

101. The TWA considered document TWP/3/2.

102. The TWA noted that the TC, at its fifty-fourth session, had agreed with the TWF that the initial step before building any database should be to agree on the information to be shared and the format to exchange and store the information.

103. The TWA noted that the TC, at its fifty-fourth session, had agreed with the proposal by the BMT that, as a first step, discussions on databases should address the issues of how to overcome ownership matters, confidentiality, access to data and material, authorization for work to be performed and availability of results and information to partners.

*(c) Exchange and use of software and equipment*

104. The TWA considered document TWP/3/5.

Document UPOV/INF/16 “Exchangeable Software”

105. The TWA noted that the Council, at its fifty-second ordinary session, held in Geneva, on November 2, 2018, had adopted document UPOV/INF/16/8 “Exchangeable Software.”

106. The TWA noted that the Office of the Union would issue a circular, 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.

107. The TWA noted that the Office of the Union would make the information in documents UPOV/INF/16 and UPOV/INF/22 available in a searchable format on the UPOV website on the basis of the approach to be demonstrated at the fifty-fifth session of the TC in 2019.

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

108. The TWA noted that the Council, at its fifty-second ordinary session, held in Geneva, on November 2, 2018, had adopted document UPOV/INF/22/5 “Software and equipment used by members of the Union”.

109. The TWA noted that the Office of the Union would issue a circular, inviting the designated persons of the members of the Union in the TC to provide or update information for document UPOV/INF/22.

(d) *UPOV PRISMA*

110. The TWA considered document TWP/3/3 and noted the developments concerning UPOV PRISMA.

Variety denominations

111. The TWA considered document TWP/3/6.

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

112. The TWA noted developments concerning a possible revision of document UPOV/INF/12 “Explanatory Notes on Variety Denominations under the UPOV Convention”, as set out in document TWP/3/6, paragraphs 6 to 8.

113. The TWA noted that the CAJ, at its seventy-fifth session, had agreed to request the TC to consider proposals received by the WG-DEN to revise the list of classes in document UPOV/INF/12/5, as set out in document TWP/3/6, paragraph 9:

114. The TWA considered the proposal to revise the list of class 203 in document UPOV/INF/12/5, as set out in document TWP/3/6, paragraph 9, in anticipation of consideration of this matter by the Technical Committee. The TWA agreed that the genus *Epichloe* (formerly *Neotyphodium*) be added to Class 203 (*Agrostis*, *Dactylis*, *Festuca*, *Festulolium*, *Lolium*, *Phalaris*, *Phleum* and *Poa*).

*Revision of the ninth edition of the ICNCP*

115. The TWA noted that the CAJ had agreed that the Office of the Union contribute to the revision of the ninth edition of the ICNCP on the basis of document UPOV/INF/12/5 and the work of the WG DEN, as set out in document TWP/3/6, paragraph 14.

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

116. The TWA noted that the WG-DEN, at its fifth meeting, had agreed that the Office of the Union should restart its work to explore possibilities to improve the UPOV Denomination Similarity Search Tool in conjunction with the Community Plant Variety Office of the European Union (CPVO).

*Expansion of the content of the PLUTO database*

117. The TWA noted developments concerning possible expansion of the content of the PLUTO database, as set out in document TWP/3/4, paragraph 87.

118. The TWA noted that the proposals by the WG-DEN at its fifth session concerning possible expansion of the content of the PLUTO database would be considered by the CAJ, at its seventy-sixth session, to be held in Geneva on October 30, 2019, as set out in document TWP/3/4, paragraph 89.

*Non-acceptable terms*

119. The TWA noted that the WG-DEN, at its fifth meeting, had agreed to propose not to pursue further the matter in relation to the item “Non-acceptable terms”.

*Date and program of the next meeting*

120. The TWA noted that the WG-DEN, at its sixth meeting, to be held in Geneva, in the evening of October 29, 2019, had agreed to discuss the revision of document UPOV/INF/12/5 “Explanatory Notes on Variety Denominations under the UPOV Convention”.

### Experiences with new types and species

121. The TWA considered document TWA/48/6 and received a presentation on “Experiences with new types and species of agricultural crops in the Czech Republic”. A copy of the presentation is provided in the Annex to document TWA/48/6.

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

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

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

### Discussion on draft Test Guidelines

#### *Ginseng (Panax ginseng C.A. Mey.) (Revision)*

124. The subgroup discussed document TG/224/2(proj.3), presented by Mr. Kwanghong Lee (Republic of Korea) on behalf of Mr. Wonsig Lee (Republic of Korea), and agreed the following:

2.3	to read “200 g of seed”
3.3.4	to check whether to read “Observations should be made on plants with four or five palmately compound leaves (4 to 5 year old plants).”
4.2.3	to read “For the assessment of uniformity of self-pollinated varieties. ...”
5.3 (a)	to delete “Stem: anthocyanin coloration” from grouping characteristics
Char. 2	to read “Stem: length”
Char. 3	to read “Stem: thickness” with states from “thin” to “thick”
Char. 4	- to be moved before characteristic 2 - have states from “weak” to “strong”
Char. 5, 6	- to be combined and to read “Stem: intensity of anthocyanin coloration” with states “absent or very weak” to “very strong” - state 1 “absent or very weak” to have example varieties “Chungsun, Gumpoong”
Char. 7	state 2 to read “on lower and upper parts”; state 3 to read “throughout”
Chars. 9, 10	- to be combined and to read “Petiole: intensity of anthocyanin coloration” with states “absent or very weak” to “very strong” - state 1 “absent or very weak” to have example varieties “Chungsun, Gumpoong”
Char. 13	to read “Leaf: additional leaflets”
Char. 14	to read “Leaf: blistering”
Char. 18	state 2 to read “broad elliptic”
Char. 21	to read “Time of beginning of flowering”
Char. 22	to read “Inflorescence: length of peduncle”
Char. 24	- to read “Inflorescence: attitude of cluster” - to be moved after Char. 25
Char. 30	to be indicated as QL
8.1 (a)	to read “Observations should be made on the longest stem among stems.
8.1 (b)	to read “Observations should be made on the largest fully developed leaf.”
Ad. 3	to read “...2-3 cm from soil surface.” (delete “upper”)
Ad. 18	to add explanation “oblong = the bottom part is rounded”
Ad. 21	to read “... have at least one floret.” (delete “flowered”)

Ad. 25	to read "... have fully ripe berries."
8.3	<ul style="list-style-type: none"> <li>- to delete current wording</li> <li>- to have the following growth stages</li> <li>1 = Sprouting (Characteristic 1)</li> <li>2 = Flowering (Characteristics 21 to 23)</li> <li>3 = Berry maturity (Characteristics 2 to 20, 24 to 26)</li> <li>4 = Leaf senescence and root harvest (Characteristics 27 to 31)</li> </ul>
9.	<ul style="list-style-type: none"> <li>- to check whether all references are necessary</li> <li>- to replace "etc." by names of remaining authors</li> </ul>
TQ 5.	<ul style="list-style-type: none"> <li>- to complete full scale of notes (even notes)</li> <li>- to delete 5.1, 5.2, 5.5, 5.9, 5.11, 5.14</li> </ul>
TQ 7.3	to delete ASW requesting a photograph from the applicant

\*Red Clover (*Trifolium pratense* L.)

125. The subgroup discussed document TG/5/8(proj.4), presented by Ms. Beate Rücker (Germany) on behalf of Mr. Donovan Sonnenberg (South Africa), and agreed the following:

2.3	to read "500 g of seed"
3.4.1	to read "Spaced plants: Each test should be designed to result in at least 60 plants, which should be divided between at least 2 replicates."
3.4.2	to read "Row plots: Each test should be designed to result in at least 3,000 plants, which should be divided between at least 2 replicates."
4.2.2	to read "... examination of cross-pollinated varieties. ..."
Table of Chars.	<ul style="list-style-type: none"> <li>- to delete example variety "Erinome" throughout the table of characteristics</li> <li>- to correct spelling of example variety "Vitavin" to read "Vltavín" throughout the table of characteristics</li> <li>- to add a new characteristic after characteristic 18: <ul style="list-style-type: none"> <li>• to read "Plant: natural height in aftermath"</li> <li>• to have states 3 "short" to 7 "tall"</li> <li>• to be indicated as QN</li> <li>• to be indicated as MG B and VG B</li> <li>• to add explanation to read "Observations should be made within 4 to 6 weeks after the summer cut."</li> <li>• to have example varieties "Ilte" for state 3, "Lemmon, Tornado" for state 5, "Formica, Tempus" for state 7</li> </ul> </li> </ul>
Char. 1	<ul style="list-style-type: none"> <li>- to add explanation to read "Ploidy should be assessed by standard cytological methods."</li> <li>- to have the following example varieties: state 2: Start state 4: Titus</li> </ul>
Char. 2	to have the following example varieties: state 3: Agil, Temara state 5: Atlantis, Maro
Char. 3	to have the following example varieties: state 1: Lemmon, Vltavín state 3: Renegade, Temara state 5: Maro
Char. 4	<ul style="list-style-type: none"> <li>- to be to be indicated as VG C (delete VS C)</li> <li>- to add (*)</li> <li>- to have the following example varieties: state 1: Lucrum state 3: Formica state 5: Grasslands Pawera</li> </ul>

Char. 5	- to be indicated as MG B/VG B (to add MG/B) - to have the following example varieties: state 5: Lucrum state 7: Formica
Char. 7	to have the following example varieties: state 5: Formica, Rotra state 7: Montana
Char. 8	to have the following example varieties: state 3: Rajah state 5: Cyklon, Podjavorina state 7: Formica
Char. 9	to have the following example varieties: state 5: Lucrum state 7: Astur, Temara
Char. 10	to have the following example varieties: state 7: Lucrum state 7: Manuela, Tedi
Char. 11	to have the following example varieties: state 3: Renegade state 5: Freedom, Montana state 7: Astur, Grasslands Turoa, Lucrum
Char. 12	- to have notes 1 to 5 - to have the following example varieties: state 5: Metis state 7: Formica
Char. 13	- to delete VS A - to have the following example varieties: state 3: Tuscan state 5: Astur, Vltavín
Char. 14	- to delete VS A - to have the following example varieties: state 5: Lemmon, Merviot state 7: Ostro, Rotra
Char. 15	to have the following example varieties: state 3: Astur, Formica state 5: Agil, Margot state 7: Lucrum state 9: Rajah
Char. 16	to have the following example varieties: state 3: Aberchianti state 5: Slavin, Tempus state 9: Jogeva 205
Char. 17	to have the following example varieties: state 3: Astur, Noe
Char. 18	to have the following example varieties: state 5: Polana, Tedi state 7: Lucrum, Titus state 9: Jogeva 205
8.1	to add new explanation (b) to read “to be assessed on the longest stem on the third leaf back from the growing tip.” for Characteristics 12 to 14
Ad. 8	to replace current explanation with the following wording: “The number of plants showing inflorescences should be recorded for each variety. To be assessed on one occasion on the whole trial when the varieties are judged to have reached their full expression of this characteristic.”
Ad. 16	to read “...should be measured...”
TQ 5.2, 5.3, 5.5	to display full scale of notes (including even notes)

*Rice (Oryza sativa L.) (Revision)*

126. The subgroup discussed document TG/16/9(proj.3), presented by Mr. Kohei Imamura (Japan), and agreed the following:

4.2.2	to read "These Test Guidelines have been developed for the examination of self-pollinated and hybrid varieties. ..."
4.2.6	to add a new paragraph after 4.2.6 to read "For the assessment of uniformity in a sample size of 100 plants, a population standard of 1% and a probability standard of at least 95% should be applied. In the case of a sample size of 100 panicle rows, plants or parts of plants, 3 off-types are allowed. A panicle row is considered to be an off-type if there is more than one off-type plant within that panicle row."
Table of Chars.	to check and use growth stages that are described in the growth stage key in Chapter 8.3 (e.g. 90)
Char. 1	- to add example variety "Milky Summer" for state 2 - to be indicated as VG/A
Char. 2	- to add example variety "Milky Summer" for state 3 - to be indicated as MG/A
Char. 13	to read "Flag leaf: length of blade"
Char. 14	to read "Flag leaf: width of blade"
Char. 16	state 2 to read "green" (delete "light")
Char. 19	to read "Stem: anthocyanin coloration of nodes"
Char. 20	to read "Stem: anthocyanin coloration of internodes"
Char. 22	state 4 to read "upper three quarters"
Char. 26	states 7 and 9 to read "moderately reflexed" and "strongly reflexed"
Char. 29	to have states "adpressed", "erect", "semi-erect"
Char. 31	to check whether to add explanation for state 1
Char. 33	to reduce scale have notes 1, 2, 3
Char. 38	to read "1000 seed weight" and add explanation "to use decorticated grain"
Chars. 38 to 44	to delete "Decorticated" from characteristic header and to add an explanation that "grain should be removed from husk for assessment"
Chars. 39, 40, 41	to be indicated as MS/A
Char. 42	to be indicated as VG/A
Char. 43	to be indicated as MG/A
Char. 44	to be indicated as VG/A
8.1 (a)	to read "Observations should be made..." (delete "on the leaves")
Ad. 2	to read "... prepared" (instead of repaired) and "... to allow..." (instead of "to make allowance")
Ad. 17	to check whether to read "... from the base of plant..."
Ad. 33	to check whether to read "... fully ripe."
Ad. 36	to check whether to read "Observations should be made on the longest glume"
Ad. 41	to be updated with same wording as in Char. 41 (low to high)
TQ 5.2	to list all states of expression (even notes)

*Rye (Secale cereale L.) (Revision)*

127. The subgroup discussed document TG/58/7(proj.1), presented by Ms. Beate Rücker (Germany), and agreed the following:

General	to read "Open pollinated varieties, hybrid varieties (excluding single crosses from inbred lines) and synthetic varieties" in relevant places throughout the document
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2.3	to read “5 kg of seed” and “1.5 kg of seed”
4.1.5	to read “In cases where more than one method of observing the characteristic is indicated in the Table of characteristics, observation on a group of plants (MG, VG) always refers to inbred lines and single crosses from inbred lines and observation on single plants (MS, VS) refers to open pollinated varieties, hybrid varieties and synthetic varieties.
4.2.2	to be deleted
6.4	to move to or repeat indication of types of example varieties in 6.5 “Legend”
Table of Chars.	to check whether to add new characteristic “Stem: coloration below ear” (states “light” to “dark” with notes 1 to 5, example variety state 1 “Helltop”
Char. 1	to check whether the characteristic refers to “intensity” or whether to replace states “light” and “dark” with different wording
Char. 8	to delete “s” from “emergence”
Chars. 10, 11	to read “Penultimate leaf: ...”
Char. 13	to check whether to read “Stem: density of hairiness”
Char. 19	- to be indicated as MG/A;MG/B - to read “1000 grain weight”
Char. 20	to be indicated as MG/A;MG/B
Char. 21	to add explanation as in TG Wheat
Ad. 8	to read <u>“Open pollinated varieties, hybrid varieties (excluding single crosses from inbred lines) and synthetic varieties (MS/A):</u> The number of plants which have reached growth stage 52 should be recorded at two-day intervals. From this data the average time of ear emergence of the variety should be calculated.  <u>“Inbred lines and single crosses from inbred lines (MG/B):</u> Time of ear emergence is reached when 50 % of the plants have reached growth stage 52.”
Ad. 17	to read “... divided...”
Ad. 19	to read “Thousand grain weight and grain length should be assessed in a harvested bunch.
TQ 5.	to add even notes to relevant characteristics
TQ 6.	to replace notes 4 and 7 with “early to medium” and “late”
TQ 7.3.1	to read “Ploidy”

*Soya Bean (Glycine max (L.) Merrill) (Revision)*

128. The subgroup discussed document TG/80/7(proj.5), presented by Mr. Alberto Ballesteros (Argentina), and agreed the following:

2.3	to read “1 kg of seed”
3.4	to add a new paragraph after 3.4.1 to read “The assessment of the characteristic “Plant: growth type” should be carried out on at least 30 plants.”
4.1.4	- to read “... should be made on 20 plants or parts taken from each of 20 plants...” - to read “...taken from each of the plants should be one.”
4.2.3	to check whether to read “... uniformity of self-pollinated varieties, ...”
5.3 (b)	to delete “Plant: growth type (characteristic 4)” from grouping characteristics
Table of Chars.	- to check whether to sort characteristics by growth stages (chronological order) - to check whether to add asterisk to more characteristics (6/21) - to add growth stage key to Chapter 8 - to check the example varieties and have one set of example varieties from one region; if needed, to add regional sets of example varieties as Annex to the Test Guidelines

Char. 1	<ul style="list-style-type: none"> <li>- to be indicated as QN</li> <li>- to read "Hypocotyl: intensity of anthocyanin coloration"</li> <li>- to have states "absent or very weak (1); weak (2); medium (3); strong (4) and very strong (5)"</li> <li>- to add example varieties</li> </ul>
Char. 3	<ul style="list-style-type: none"> <li>- to add (+) and explanation on how the characteristic is assessed</li> <li>- to use standard wording for states of expression (extremely early to extremely late) replacing numbers (000, 00, ...)</li> </ul>
Char. 4	<ul style="list-style-type: none"> <li>- to check whether to add example variety "RGT Shouna" to state 4 (see general comment on set of example varieties)</li> <li>- be indicated as VS</li> </ul>
Char. 5	to check whether to add example varieties "Sultana" for state 1, "RGT Shouna" for state 2, "Solena" for state 4 see general (comment on set of example varieties)
Char. 6	to check whether to add example varieties "Sirelia" for state 1 and "Es Mentor" for state 2 (see general comment on set of example varieties)
Char. 7	<ul style="list-style-type: none"> <li>- to check whether to add example varieties "Sultana" for state 3, "Es Mentor" for state 4, "RGT Shouna, Sigalia" for state 5 (see general comment on set of example varieties)</li> <li>- to add MS</li> </ul>
Char. 9	<ul style="list-style-type: none"> <li>- to be indicated as PQ</li> <li>- to add (+) and illustration</li> </ul>
Chars. 13, 16	to add example varieties
Char. 16	<ul style="list-style-type: none"> <li>- to add new color "red" after "yellow"</li> <li>- to check and correct notes (currently no note 8)</li> </ul>
Char. 17	to add explanation
Char. 19	<ul style="list-style-type: none"> <li>- to read "Seed: color of hilum"</li> <li>- to move state "grey" after "dark brown"</li> <li>- to correct spelling of example variety "Srielia" to "Sirielia" (throughout the Test Guidelines)</li> </ul>
Char. 20	to add additional state of expression "absent" as state 1 and renumber other states
Ad. 4	<ul style="list-style-type: none"> <li>- to update cross-reference to characteristics "earliness of flowering; maturity"</li> <li>- to add to current explanation how to assess "determinate" and "semi-determinate"</li> </ul>
Ad. 13	to check whether to read "Observations should be made on pods from the middle third of the plant, including pubescence. Observations should be made in bright daylight in comparison with other well-known varieties."
Ad. 15	to be deleted (or replaced)
Ad. 18	to add to current explanation that other standard methods might be used as long as they yield the same results
Ad. 19	<ul style="list-style-type: none"> <li>- to delete explanation of "imperfect"</li> <li>- to read "Imperfect black: black center, surrounded by a brown halo Imperfect yellow: dark yellow center, surrounded by lighter yellow halo"</li> <li>- to become explanation Ad. 20 as it covers Char. 20</li> </ul>
TQ 4.1	to add standard text from document TGP/7, ASW 15
TQ 4.2	to add standard text from GN 31, example 1
TQ 6.	to check whether to replace "present" by "medium" (or other state)

*Tea (Camellia sinensis (L.) Kuntze) (Revision)*

129. The subgroup discussed document TG/238/2(proj.2), presented by Mr. Simeon Kibet (Kenya), and agreed the following:

3.1.2, 4.1.1, 4.2.3, 4.2.4, 4.3.3	to be deleted
4.1.4	number of plants or parts of plants to be examined to be 9 plants
Char. 5	to read "Branch: zigzag"
Char. 7	- to follow order of presentation of colors as in TGP/14 (white, green, yellow, purple, brown) - to read "Young shoot: color of second leaf" and to add explanation in Chapter 8.2 that observations should be made at "two and a bud stage"
Char. 9	to be indicated as QN
Char. 10	to read "Young shoot: length" and to add explanation in Chapter 8.2 that observations should be made at "three and a bud stage"
Char. 13	to check whether to read "Leaf blade: ratio length/width" with 5 notes and states from "low" to "high"
Char. 14	to be moved before characteristic 13
Char. 15	to read "Leaf blade: intensity of color"
Char. 16	to be deleted
Char. 17	to be indicated as PQ
Char. 19	to be moved after characteristic 14
Char. 22	to be moved after characteristic 14
Char. 25	to delete (*)
Char. 26	to be indicated as QN and to have states 1 "absent or weak", 2 "medium", 3 "strong"
Char. 29	to delete state 3 "pink" and to be indicated as QL
Char. 30	to be deleted
Char. 32	to have notes 1, 3, 5
Char. 33	to have states 1 "far below", 2 "moderately below", 3 "same level", 4 "moderately above", 4 "far above"
Char. 34	- to be indicated as QL - to be moved before characteristic 15
Char. 35	to be deleted
8.1 (b)	"... should be made..."
Ad. 6	- to add explanation of "one and a bud" (see current adopted version of TG Tea) - to read "The time of beginning of 'one leaf and a bud' stage is reached when 30 percent of plants have buds at the 'one leaf and a bud' stage."
Ads. 7, 15, 16, 29, 34	to delete reference to RHS Colour Chart
Ad. 23	to read "Time of full flowering is reached when [%] of the plants have 50% of flowers open."
9.	to check whether to correct formatting
TQ 4.	to be completed
TQ 5.	to present all states of expression (including even notes)
TQ 6.	to be completed

*Timothy (Phleum pratense L.) (Revision)*

130. The subgroup discussed document TG/34/7(proj.1), presented by Mr. Lubomir Basta (Slovakia), and agreed the following:

Cover page	to update botanical name <i>Phleum bertolonii</i> to <i>P. nodosum</i> (see GRIN)
2.3	to read "500 grams of seed"
3.4.1	to read "...which should be divided between at least 2 replicates."
3.4.2	- to check whether to read "Each test should be designed to result in a total of at least 60 spaced plants which should be divided between at least 2 replicates. In addition, the test may include 10 meters of row plot which should be divided between at least 2 replicates. The density of the seed should be such that around 200 plants/meter can be expected." - to check the number of meters and number of plants/meter (check whether to use same approach as in <i>Lolium</i> or <i>Meadow Fescue</i> ")
6.5	- to add explanation on "(P.p.) / (P.b.)" (species of examples) - to be updated according to change to botanical names
Table of Chars.	- to check whether to add more asterisks (5/19) - to add underline to "without" and "after" when referring to vernalization - to add example varieties
Char. 2	state "medium" to read "intermediate"
Char. 3	to have states from "very short" to "very tall"
Char. 4	- to read "Plant: time of inflorescence emergence <u>without</u> vernalization" - to have states from "very early" to "very late"
Char. 5	- to add VG/B - state "medium" to read "intermediate"
Chars. 5 to 8	growth stage to be indicated as 20-39
Char. 6	to have states from "very short" to "very tall"
Chars. 7, 8	to be moved before characteristic 5
Char. 8	state "wide" to read "broad"
Char. 9	to read "Plant: time of inflorescence emergence <u>after</u> vernalization"
Char. 10	- to read "... natural height at inflorescence..." - to have states from "very short" to "very tall" - to check whether to be deleted
Char. 11	state "medium" to read "intermediate"
Chars. 12 to 14	growth stage to be indicated as 50 to 56
Char. 13	- state "wide" to read "broad" - to add more example varieties
Chars. 15 to 17	to add explanation (a) as Chapter 8.1 to read "Observations should be made when inflorescence is fully expanded."
Char. 15	- to read "Stem: length" and add explanation "longest stem should be observed, including inflorescence" - to add more example varieties
Char. 16	to add (*)
Char. 17	- to read "Inflorescence: length" - to add (*)
Char. 18	- to have states from "very short" to "very tall" - to check whether to be deleted
Char. 19	- to read "Plant: tendency to form inflorescences in aftermath" - to have notes 1 to 9
Ad. 2	to replace wording with illustrations
Ad. 4	- to replace "notes" with number of "dates" (Note 8 = Date 1, Note 6 = Date 2, Note 4 = Date 3, Note 2 = Date 4) - last sentence to read "From this data a mean date per variety is calculated."

Ad. 5	to read "See Ad. 2"
Ad. 9	last sentence to read "...is calculated." (instead of "obtained")
9	to add "Zadoks" as reference
TQ 4	to be completed
TQ 5	to display all states of expression (including even notes)
TQ 6	to add "Time of inflorescence emergence" with states
TQ 7.3.1	to correct spelling of "Ploidy"

*Triticale (x Triticosecale Witt.) (Revision)*

131. The subgroup discussed document TG/121/4(proj.2), presented by Mr. Tanvir Hossain (Australia), and agreed the following:

2.3	to read "Ears..." (delete "The")
4.2.2	to read "These Test Guidelines have been developed for the examination of mainly self-pollinated and hybrid varieties. ..."
4.2.6	to read "For the assessment of uniformity of mainly self-pollinated varieties, ..."
5.3	(d) Seed: coloration with phenol (characteristic 24) to be deleted from grouping characteristics
6.4	to move legend on types of varieties to 6.5
6.5	to add reference to sample sizes "A" and "B"
Table of chars.	to order characteristics chronologically
Char. 3	growth stage to be indicated as 47 - 55
Char. 4	to be moved before characteristic 3
Char. 7	to read "Flag leaf: glaucosity of lower side of blade"
Char. 13	- to delete (*) - growth stage to be indicated as 60-69
Char. 20	to be deleted
Char. 24	- to be moved to the top of the table of characteristics as characteristic 1 - to delete (*)
8.1 (a)	to read "Observations should be made on spikelets in the mid-third of ear."
Ad. 11	to be updated according to Char. 11
Ad. 21	to improve image quality (resolution)
TQ 4.1.4	- to be moved to TQ 7 - to correct spelling "ploidy"
TQ 4.2.1	to delete "(i) Single hybrid"
TQ 4.2	to add GN 32 (Information on method of propagation of hybrid varieties)
TQ 5	- to add missing grouping characteristics 11 and 16 - to delete 5.3 and 5.4

## Recommendations on draft Test Guidelines

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

132. The TWA agreed that the following draft Test Guidelines should be submitted to the TC for adoption on the basis of the following documents and the comments in this report:

Subject	Basic Document(s) (2019)
Ginseng ( <i>Panax ginseng</i> C.A. Mey) (Revision)	TG/224/2(proj.3)
*Red Clover ( <i>Trifolium pratense</i> L.) (Revision)	TG/5/8(proj.4)
Triticale (x <i>Triticosecale</i> Witt.) (Revision)	TG/121/4(proj.2)

### (b) Test Guidelines to be discussed at the forty-ninth session

133. The TWA agreed to discuss the following draft Test Guidelines at its forty-ninth session:

Subject	Basic Document(s) (2019)
Potato ( <i>Solanum tuberosum</i> L.) (Revision)	TG/23/6
Rape Seed ( <i>Brassica napus</i> L. <i>oleifera</i> ) (Revision)	TG/36/6 Corr.
*Rice ( <i>Oryza sativa</i> L.) (Revision)	TG/16/9(proj.3)
*Rye ( <i>Secale cereale</i> L.) (Revision)	TG/58/7(proj.1)
*Soya Bean ( <i>Glycine max</i> (L.) Merrill) (Revision)	TG/80/7(proj.5)
Sugarcane ( <i>Saccharum</i> L.) (Revision)	TG/186/1
Sunflower ( <i>Helianthus annuus</i> L.) (Revision)	TG/81/7(proj.1)
*Tea ( <i>Camellia sinensis</i> (L.) Kuntze) (Revision)	TG/238/2(proj.2)
*Timothy ( <i>Phleum pratense</i> L.; <i>Phleum nodosum</i> DC.) (Revision)	TG/34/7(proj.1)
Zoysia grasses ( <i>Zoysia</i> Willd.)	NEW

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

### (c) Possible Test Guidelines to be discussed in 2021

135. A list of Test Guidelines the TWA agreed to possibly discuss at its session in 2021 is presented in Annex III to this report.

### (d) Participation in discussions of Test Guidelines from other TWPs

136. The TWA agreed to propose that the following experts be added as interested experts to the following draft Test Guidelines being discussed by the Technical Working Party for Vegetables (TWV), subject to the deadlines agreed in document TWV/50/32 "Report", Annex IV:

Subject	Interested experts (countries/organizations) <sup>1</sup>
*Chick-pea ( <i>Cicer arietinum</i> L.) (Revision)	AU, BR, CA
Turnip ( <i>Brassica rapa</i> L. var. <i>rapa</i> (L.) Thell.) (Revision)	DE, FI, GB, NZ, QZ

<sup>1</sup> for name of experts, see list of participants

Date and place of the next session

137. At the invitation of Canada, the TWA agreed to hold its forty-ninth session in Saskatoon, Canada, from June 22 to 26, 2020.

Chairperson

138. The TWA agreed to propose to the TC that it recommend to the Council to elect Ms. Renée Cloutier (Canada), as the next chairperson of the TWA.

Future program

139. The TWA proposed to discuss the following items at its next session:

1. Opening of the Session
2. Adoption of the agenda
3. Short reports on developments in plant variety protection
  - (a) Reports from members and observers (written reports to be prepared by members and observers)
  - (b) Report on developments within UPOV (oral report by the Office of the Union)
4. Molecular Techniques (document to be prepared by the Office of the Union)
  - (a) Developments in UPOV (document to be prepared by the Office of the Union)
  - (b) Presentation on the use of molecular techniques in DUS examination (presentations invited from members of the Union)
5. TGP documents (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 (documents to be prepared by the Office of the Union)
8. Experiences with new types and species (oral reports invited)
9. Guidance for drafters of Test Guidelines
10. Discussion on draft Test Guidelines (Subgroups)
11. Recommendations on draft Test Guidelines
12. New technology used in DUS examination (documents to be prepared by Argentina, Denmark and documents invited)
13. Examining hybrid varieties (document to be prepared by United Kingdom and documents invited)
14. Date and place of the next session
15. Future program
16. Adoption of the Report on the session (if time permits)
17. Closing of the session

140. The TWA noted that discussion groups were formed to discuss "Cooperation in DUS examination" and "Molecular techniques in DUS examination" at its forty-eight session. The TWA agreed that discussion groups provided a useful opportunity for the exchange of experiences among participants and agreed to propose that discussion groups be formed to discuss "New technology used in DUS examination" at its forty-ninth session.

*141. The TWA adopted this report at the end of the session.*

[Annex I follows]



LIST OF PARTICIPANTS

I. MEMBERS

ARGENTINA



Alberto BALLESTEROS (Mr.), Examiner, Plant Breeder's Rights Office, Instituto Nacional de Semillas (INASE), Av. Belgrano, 450/2, 2nd floor, Ciudad de Buenos Aires  
(e-mail: [aballesteros@inase.gov.ar](mailto:aballesteros@inase.gov.ar))

AUSTRALIA



Tanvir HOSSAIN (Mr.), Senior Examiner, Plant Breeder's Rights Office, IP Australia,  
P.O. Box 200, Woden ACT 2606, Australia  
(tel.: +61 2 6283 7984 fax: +61 2 6283 7999 e-mail: [tanvir.hossain@ipaustralia.gov.au](mailto:tanvir.hossain@ipaustralia.gov.au))

BRAZIL



Ricardo ZANATTA MACHADO (Mr.), Federal Agricultural Inspector, Coordinator, Serviço Nacional de Proteção de Cultivares (SNPC), Ministry of Agriculture, Livestock and Food Supply, Esplanada dos Ministérios, Bloco 'D', Anexo B, Sala 347, 70043-900 Brasília, D.F.  
(tel.: +55 61 3218 2549 fax: +55 61 3224 2842 e-mail: [ricardo.machado@agricultura.gov.br](mailto:ricardo.machado@agricultura.gov.br))



Paulo MENEZES MENDES (Mr.), Agricultural Federal Auditor, National Service for Varieties Protection (SNPC), Ministry of Agriculture, Livestock and Food Supply, Esplanada dos Ministérios, Bloco 'D', Anexo B, sala 347B, 70043-900 Brasília, D.F.  
(tel.: +55 61 3218 3765 fax: +55 61 3224 2842 e-mail: [paulo.mendes@agricultura.gov.br](mailto:paulo.mendes@agricultura.gov.br))

CANADA



Renée CLOUTIER (Ms.), Examiner, Plant Breeders' Rights Office, Canadian Food Inspection Agency (CFIA), 59 Camelot Drive, Ottawa, Ontario K1A 0Y9  
(tel.: +1 613 773 7191 fax: +1 613 773 7115 e-mail: [Renee.Cloutier@canada.ca](mailto:Renee.Cloutier@canada.ca))



## CHINA



Hao TANG (Mr.), Division Director, Division of DUS Tests, Development Center of Science and Technology, Ministry of Agriculture and Rural Affairs, Nongfeng Building, No.96, Dongsanhuan Nanlu, Chaoyang District, 100122 Beijing  
(tel.: +86 10 591 99395 fax: +86 10 591 99393 e-mail: tanghao1973@126.com)



Zhefeng ZHANG (Mr.), DUS Test Staff, Research Associate, Chendu Station of DUS Testing of Sichuan for PVP, Academy of Agricultural Sciences, No. 2, Jinjushi Road, Sichuan Province, Jingjiang District, Chengdu City  
(tel.: +86 28 84504249 fax: +86 28 84790147 e-mail: zfzhang909@163.com)

## CZECH REPUBLIC



Lydie CECHOVÁ (Ms.), Crop Expert, Central Institute for Supervising and Testing in Agriculture (UKZUZ), Ustredni kontrolni a zkusebni ustav zemedelsky, 569 01 Hradec Nad Svitavou  
(tel.: +420 461 535 003 fax: +420 461 533 748 e-mail: lydie.cechova@ukzuz.cz)

## DENMARK



Preben KLARSKOV HANSEN (Mr.), DUS Coordinator, TystofteFoundation, Teglvaerksvej 10, 4230 Skaelskoer  
(tel.: +45 50808463 fax: +45 5080 8456 e-mail: pkh@tystofte.dk)

## DOMINICAN REPUBLIC



Ramon Danilo VERAS JOSÉ (Mr.), Technical coordinator, Oficina para el registro de variedades y obtenciones vegetales (OREVADO), km 6 1/2, Aut. Duarte, Urbanización Jardines del Norte, Santo Domingo, D.N.  
(tel.: +1 809 227 6188 ext. 227 e-mail: mgarcia@orevado.gob.do)

## EUROPEAN UNION



Anne WEITZ (Ms.), Technical Expert Agricultural Crops, Community Plant Variety Office (CPVO),  
3, boulevard Maréchal Foch, CS 10121, 49101 Angers Cedex 02  
(tel.: +33 2 41 25 64 37 fax: +33 2 41 25 64 10 e-mail: [weitz@cpvo.europa.eu](mailto:weitz@cpvo.europa.eu))

## FINLAND



Sami MARKKANEN (Mr.), Senior Officer, Finnish Food Authority, Food Chain Division, Plant  
Production Department, Seed Unit, P.O. Box 111, 32201 Loimaa  
(tel.: +358 40 8294543 fax: +358 29 530 5318 e-mail: [sami.markkanen@evira.fi](mailto:sami.markkanen@evira.fi))

## GERMANY



Beate RÜCKER (Ms.), Head of Department, Bundessortenamt, Osterfelddamm 80,  
Postfach 61 04 40, 30627 Hannover  
(tel.: +49 511 9566 5639 fax: +49 511 956 69600 e-mail: [beate.ruecker@bundessortenamt.de](mailto:beate.ruecker@bundessortenamt.de))

## HUNGARY



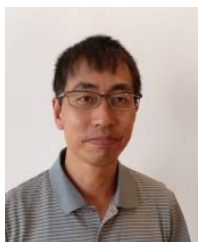
Zoltán CSÜRÖS (Mr.), Coordinator, DUS Expert, Variety Testing Dept. for Field Crops, National  
Food Chain Safety Office (NÉBIH), Keleti K. u. 24., 1024 Budapest  
(tel.: +36 70 4360671 e-mail: [csurosz@nebih.gov.hu](mailto:csurosz@nebih.gov.hu))

## ITALY



Giovanni CORSI (Mr.), Researcher, Center for Plant Protection and Certification (CREA-DC), via di  
Corticella 133, 40128 Bologna  
(tel.: +39 051 63 16 894 fax: +39 051 63 16 898 e-mail: [giovanni.corsi@crea.gov.it](mailto:giovanni.corsi@crea.gov.it))

## JAPAN



Manabu OSAKI (Mr.), Senior Examiner, Plant Variety Protection Office, Intellectual Property Division Food Industry Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries (MAFF), 1-2-1 Kasumigaseki, Chiyoda-ku, 100-8950 Tokyo  
(e-mail: manabu\_osaki190@maff.go.jp)



Kohei IMAMURA (Mr.), Senior Staff, National Center for Seeds and Seedlings (NCSS), 2-2 Fujimoto, Tsukuba 305-0852  
(tel.: +81 29 838 6581 fax: +81 29 839 1183 e-mail: imamurak302@affrc.go.jp)

## KENYA



Simeon KIBET KOGO (Mr.), General Manager - Quality Assurance, Kenya Plant Health Inspectorate Service (KEPHIS), P.O. Box 49592, 00100 Nairobi  
(tel: +254 7211 77854 fax: +254 20 356175 e-mail: skibet@kephis.org)



Samson KAMUNYA (Mr.), Plant breeder, TRI-KALRO, P.O. Box 820-20200, Kericho  
(tel.: +254 722 282 741 fax: +254 52 20575 e-mail: samson.kamunya@yahoo.com, samson.kamunya@kalro.org)

## NEW ZEALAND



Chris HARDY (Mr.), Senior Plant Variety Rights Examiner, Intellectual Property Office of New Zealand, Plant Variety Rights, Ministry of Economic Development, 55 Wordsworth Street, Private Bag 4717, Christchurch 8140  
(tel.: +64 3 962 623 e-mail: christopher.hardy@pvr.govt.nz)

REPUBLIC OF KOREA



Kwanghong LEE (Mr.), Agricultural Researcher, Korea Seed and Variety Service (KSVS), 119 Hyeoksin 8-ro, Gimcheon, Gyeongsangbuk-do 29660  
(tel.: +82 54 912 0202 fax: +82 54 912 0211 e-mail: grin@korea.kr)



Young KIM (Mr.), Agricultural Researcher, Korea Seed and Variety Service (KSVS), 119 Hyeoksin 8-ro, Gimcheon, Gyeongsangbuk-do 29660  
(tel.: +82 63 861 2595 fax: +82 63 862 0069 e-mail: youngk@korea.kr)

SLOVAKIA



Lubomir BASTA (Mr.), DUS expert for agricultural species, Variety Testing Department, Central Controlling and Testing Institute in Agriculture Bratislava (UKSUP), Testing Station Partizánska 14, 053 61 Spisské Vlasy  
(tel.: + 421 53 290 1252 e-mail: lubomir.basta@uksup.sk)

UNITED KINGDOM



Cheryl TURNBULL (Ms.), Technical Manager (DUS), Centre for Plant Varieties and Seeds, National Institute of Agricultural Botany (NIAB), Huntingdon Road, Cambridge  
(tel.: +44 1223 342291 e-mail: cheryl.turnbull@niab.com)



Margaret WALLACE (Ms.), Senior Technical Manager (Agricultural DUS and Seed Certification), National Institute of Agricultural Botany (NIAB), Huntingdon Road, Cambridge CB3 0LE  
(tel.: +44 1223 342288 e-mail: margaret.wallace@niab.com)

URUGUAY



Pedro QUEHEILLE (Mr.), Presidente, Instituto Nacional de Semillas (INASE), Cno. Bertolotti s/n R-8 Km 29, Barros Blancos, Canelones  
(e-mail: pqueheille@inase.uy)



Daniel BAYCE MUÑOZ (Mr.), Director Ejecutivo, Instituto Nacional de Semillas (INASE), Camino Suárez s/n, Ruta 8 y Ruta 101, Barros Blancos, Canelones 91001  
(tel.: +598 22887099 E. 125 e-mail: dbayce@inase.uy)



Vanessa SOSA (Ms.), Laboratory Manager, Instituto Nacional de Semillas (INASE)  
Cno. Bertolotti s/n R-8 Km 29, Barros Blancos, Canelones, Uruguay  
(tel.: +598 2288 7099 E 124 e-mail: vsosa@inase.uy)



Virginia Roxana OLIVIERI GÓMEZ (Ms.), Coordinator, Variety Testing and Registration, Instituto Nacional de Semillas, National Seed Institute (INASE), Cno. Bertolotti s/n y Ruta 8 Km 29, Barros Blancos, Canelones  
(tel.: +598 2 288 70 99 / +598 99 323704 fax: +598 2 288 70 77  
e-mail: volivieri@inase.org.uy)



Federico BOSCHI (Mr.), Técnico, Evaluación y Registro de Cultivares, Instituto Nacional de Semillas (INASE), Cno. Bertolotti S/N y ruta 8 km 29, Barros Blancos, Canelones  
(tel.: +598 2 288 7099 fax: +598 2 288 7077 e-mail: fboschi@inase.uy)



Sebastián Luis MOURE CHRISTOPHERSEN (Mr.), Técnico, Evaluación y Registro de Cultivares, Instituto Nacional de Semillas (INASE), Camino Bertolotti s/n y Ruta 8, Km 29, Barros Blancos, Canelones  
(tel.: +598 2288 7099 fax: +598 2288 7077 e-mail: smoure@inase.uy)



Constanza TARAN ALDERETE (Ms.), Técnica, Instituto Nacional de Semillas (INASE), R-8, km 281, Treinta y Tres  
(tel.: +598 99 410 077 fax: +598 2288 7077 e-mail: ctaran@inase.uy)



Gonzalo ROVIRA (Mr.), Statistics Unit Coordinator, Instituto Nacional de Semillas (INASE)  
Cno. Bertolotti s/n R-8 Km 29, Barros Blancos, Canelones, Uruguay  
(tel.: +598 2288 7099 E 116 e-mail: grovira@inase.uy)



Inés FORNOS (Ms.), Communication Head, National Seed Institute (INASE), Cno. Bertolotti s/n R-8 Km 29, Barros Blancos, Canelones  
(e-mail: ifornos@inase.uy)



Melisa CUADRO (Ms.), Communication Coordinator, National Seed Institute (INASE),  
Cno. Bertolotti s/n R-8 Km 29, Barros Blancos, Canelones  
(e-mail: mcuadro@inase.uy)

## II. ORGANIZATIONS

### CROPLIFE INTERNATIONAL



Marcel BRUINS (Mr.), Consultant, CropLife International, 326, Avenue Louise, Box 35,  
1050 Bruxelles, Belgique  
(tel.: +32 2 542 0410 fax: +32 2 542 0419 e-mail: mbruins1964@gmail.com)



## EUROSEEDS



Catherine Chepkurui LANGAT (Ms.), Technical Manager Plant Breeding and Variety Registration,  
Avenue des Arts 52, 1000 Bruxelles, Belgium  
(tel.: +32 2 743 28 60 e-mail: catherinelangat@euroseeds.eu)

## INTERNATIONAL SEED FEDERATION (ISF)



Szabolcs RUTHNER (Mr.), Regulatory Affairs Manager, International Seed Federation (ISF),  
Chemin du Reposoir 7, 1260 Nyon, Switzerland  
(tel.: +41 22 365 4420 fax: +41 22 365 4421 e-mail: s.ruthner@worldseed.org)



Marymar BUTRUILLE (Ms.), Germplasm IP Scientist, Bayer Crop Science, 3302 SE Convenience  
Boulevard, Ankeny, Iowa 50021, United States of America  
(tel.: +1 515.965.3077 e-mail: marymar.butruille@bayer.com)

## SEED ASSOCIATION OF THE AMERICAS (SAA)



Diego RISSO (Mr.), Executive Director, Seed Association of the Americas (SAA)  
(e-mail: drisso@saaseed.org)

Marcos CARRERA (Mr.), Uruguay Commercial Lead, Monsanto Uruguay S.A.,  
(e-mail: marcos.carrera@bayer.com)

### III. OFFICER



Ms. Cheryl TURNBULL, Chair

### IV. OFFICE OF UPOV



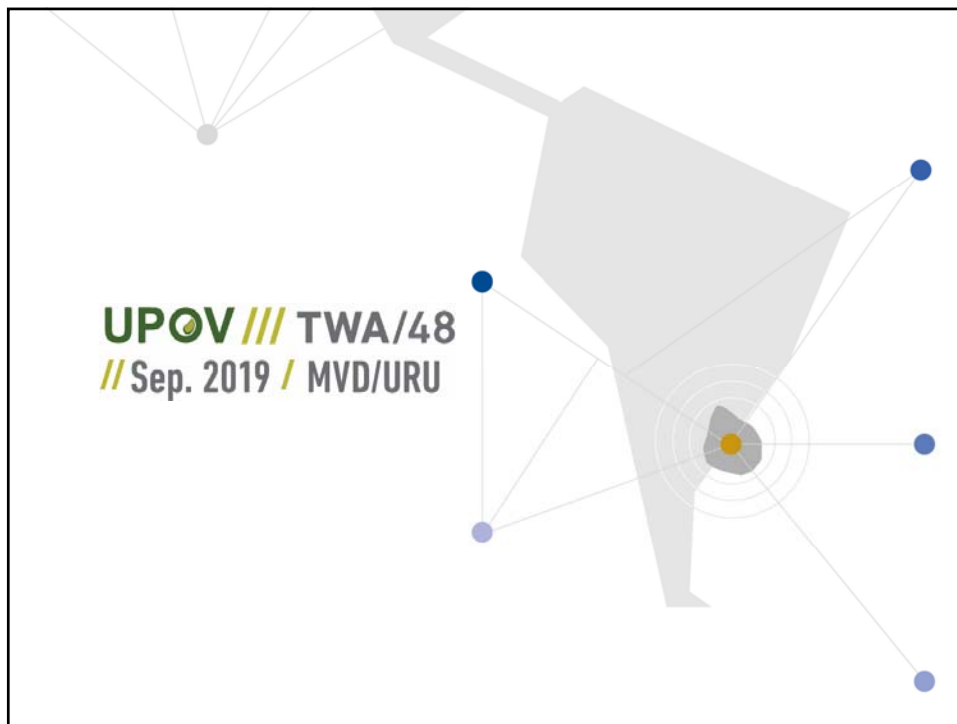
Leontino TAVEIRA (Mr.), Head of Technical Affairs and Regional Development (Latin America, Caribbean), International Union for the Protection of New Varieties of Plants (UPOV), Chemin des Colombettes 34, 1211 Geneva 20, Switzerland  
(tel.: +41 22 338 8426 fax: +41 22 733 0336 e-mail: [leontino.taveira@upov.int](mailto:leontino.taveira@upov.int))



Romy OERTEL (Ms.), Secretary II, International Union for the Protection of New Varieties of Plants (UPOV), Chemin des Colombettes 34, 1211 Geneva 20, Switzerland  
(tel.: +41 22 338 7293 fax: +41 22 733 0336 e-mail: [romy.oertel@upov.int](mailto:romy.oertel@upov.int))

[Annex II follows]







## Uruguay

**an agribusiness country**

A powerful agribusiness country in the world

Ministry of Livestock, Agriculture and Fisheries of Uruguay (2017)

2<sup>nd</sup>. wool exporter



2<sup>nd</sup>. short fiber cellulose exporter



5<sup>th</sup>. dairy exporter

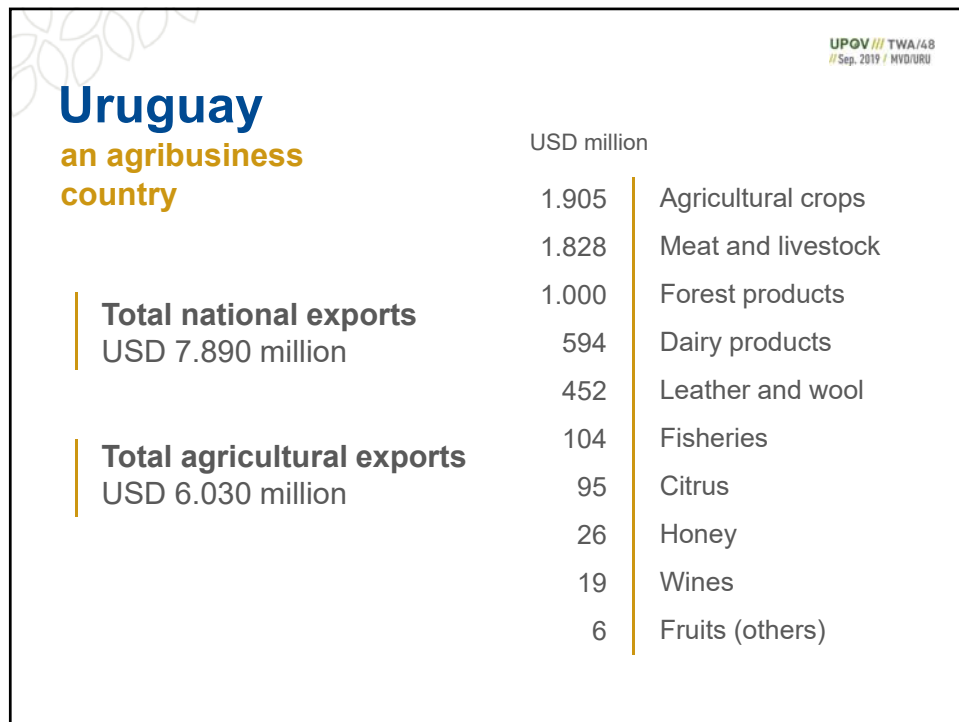


6<sup>th</sup>. rice exporter



6<sup>th</sup>. beef exporter

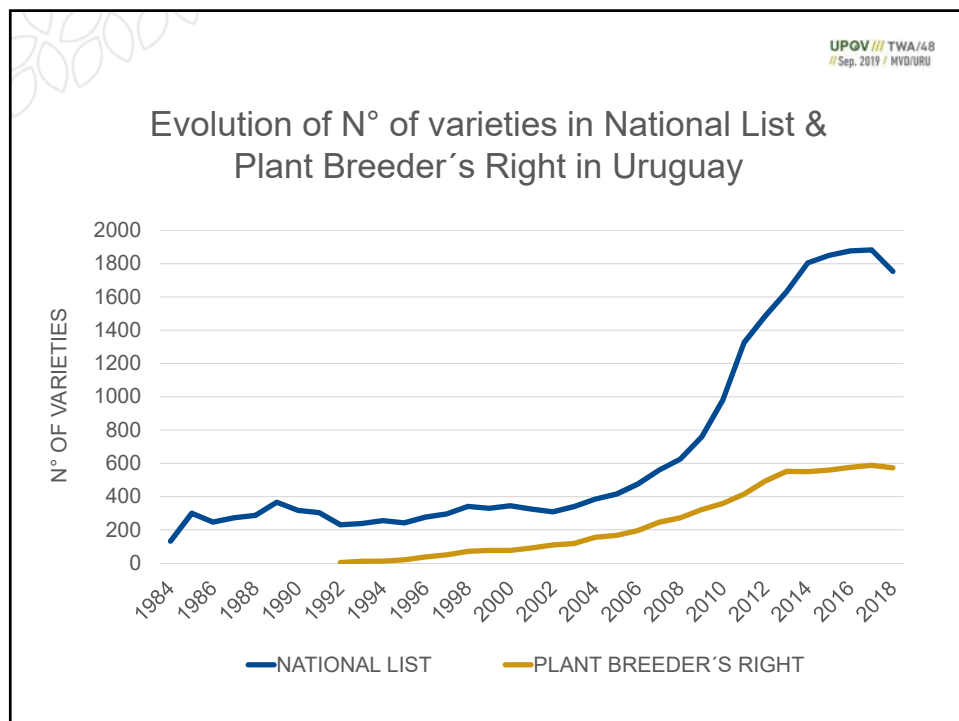


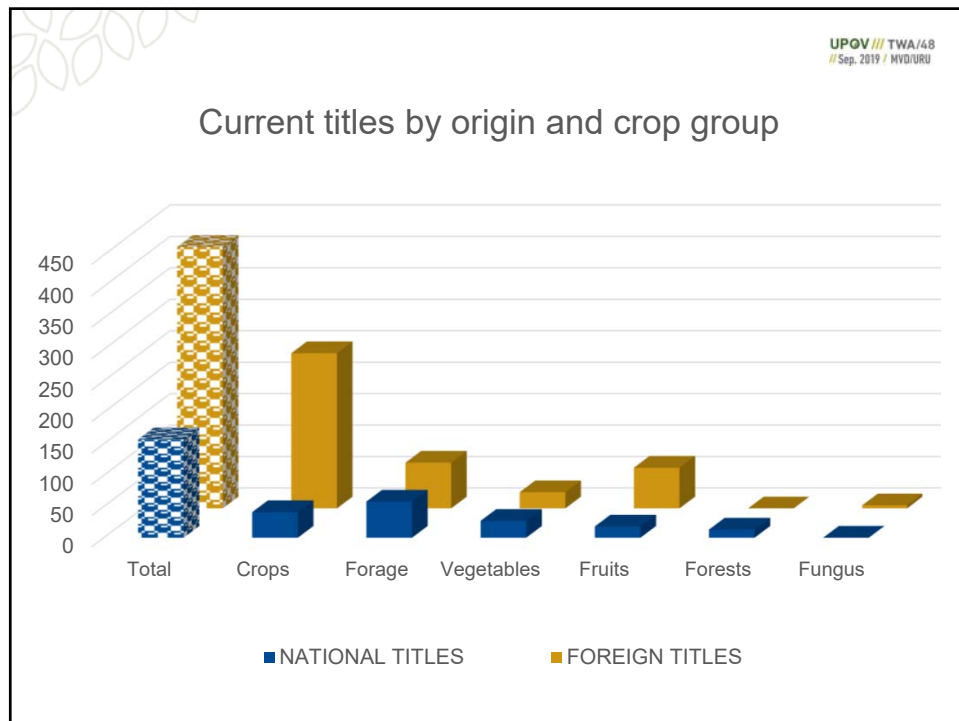
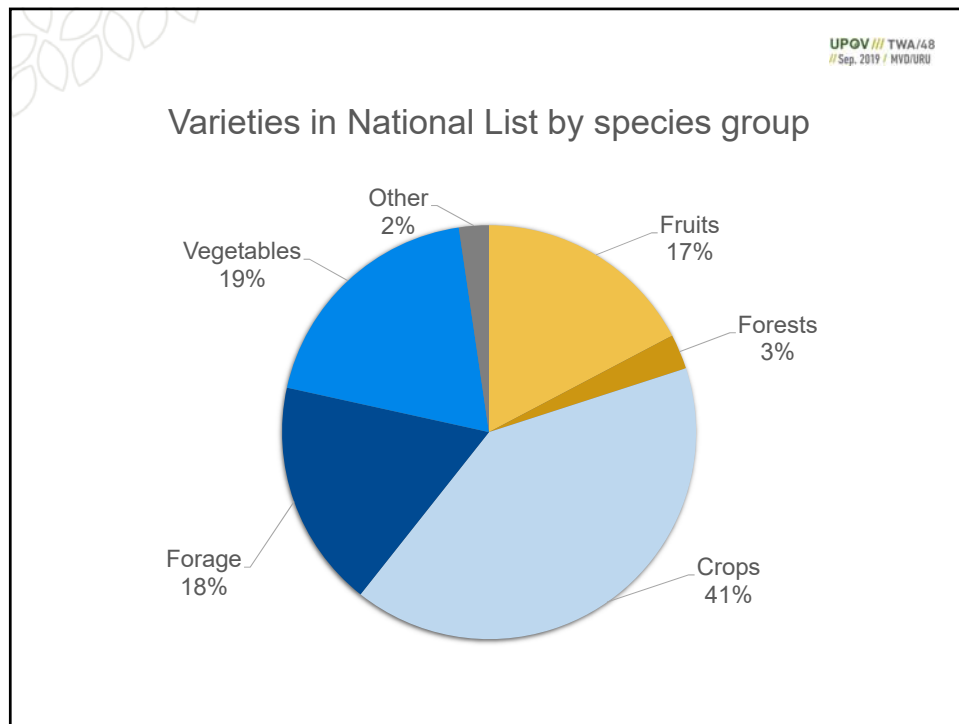


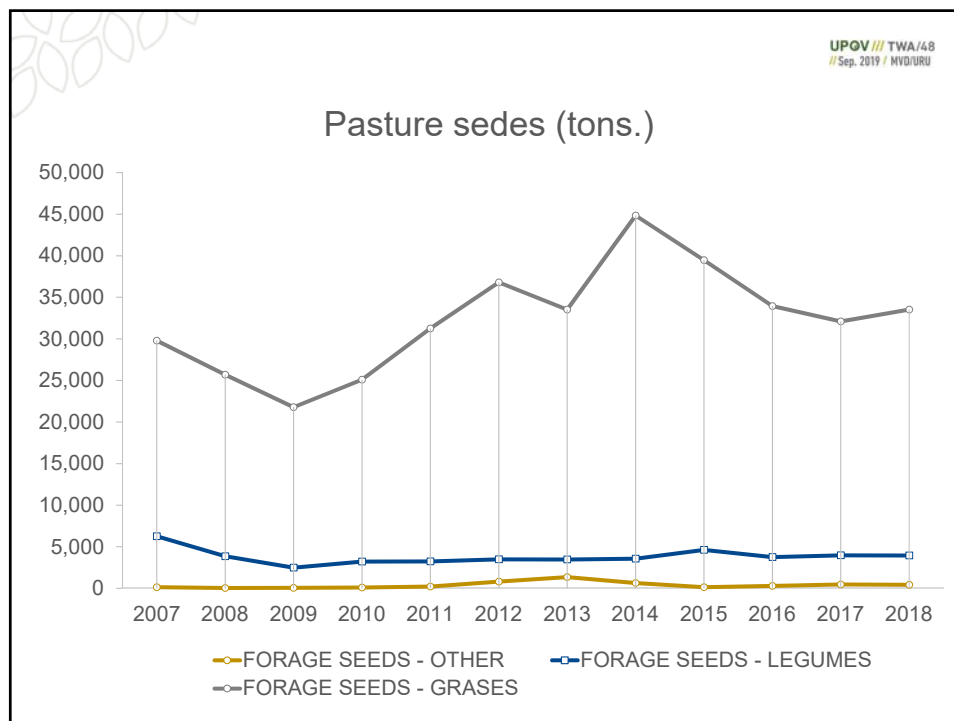
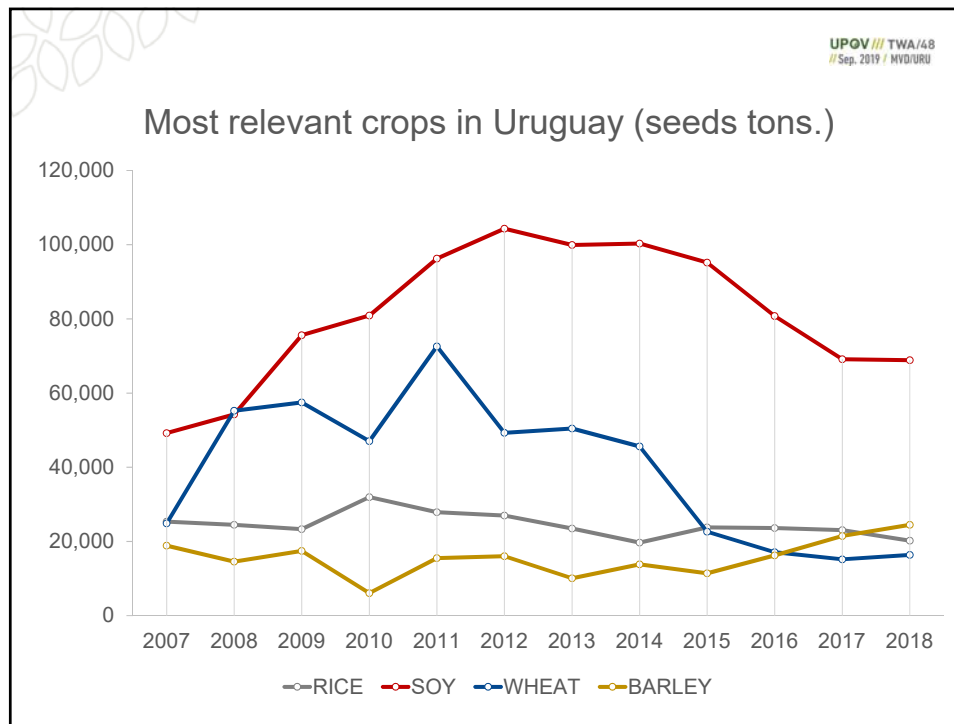
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// Sep. 2019 / MVD/URU

### Regulatory framework in Uruguay

Year	
1968	First National Seed Law (N°13.664)
1981	National Seed Law (inc. PBR) (N°15.173)
1994	Becomes a Member of UPOV Act. 1978 (Law N° 16.580)
1997	National Seed Law
	Creates National Seed Institute INASE (N°16.811)
2009	Update National Seed Law (N°18.497)
2004	Decree (438/2004)
2009	Decree "Farm Save Seed" (385/009; 453/009)







[Annex III follows]

**DRAFT TEST GUIDELINES TO BE SUBMITTED  
TO THE TECHNICAL COMMITTEE IN 2020**

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

**before November 4, 2019**

Species	Basic Document(s)	Leading expert
Ginseng ( <i>Panax ginseng</i> C.A. Mey) (Revision)	TG/224/2(proj.3)	Mr. Wonsig Lee (KR)
*Red Clover ( <i>Trifolium pratense</i> L.) (Revision)	TG/5/8(proj.4)	Mr. Donovan Sonnenberg (ZA)
Triticale (x <i>Triticosecale</i> Witt.) (Revision)	TG/121/4(proj.2)	Mr. Tanvir Hossain (AU)

**DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWA/49**  
**(\* indicates possible final draft Test Guidelines)**

Guideline date for Subgroup draft to be circulated by Leading Expert: **March 13, 2020**

Guideline date for comments to Leading Expert by Subgroup: **April 10, 2020**

New draft to be submitted to the Office of the Union

**before May 8, 2020**

Species	Basic Document	Leading expert	Interested experts (countries/organizations) <sup>2</sup>
Potato ( <i>Solanum tuberosum</i> L.) (Revision)	TG/23/6	Ms. Beate Rücker (DE)	AU, AT, BR, CA, CN, CZ, DK, ES, GB, IR, IT, JP, KE, KR, NL, NZ, PL, QZ, SK, CLI, Euroseeds, ISF, Office
Rape Seed ( <i>Brassica napus</i> L. <i>oleifera</i> ) (Revision)	TG/36/6 Corr.	Ms. Margaret Wallace (GB)	AU, BR, CA, CN, CZ, DE, DK, FI, FR, JP, KR, NZ, PL, QZ, SK, UY, CLI, Euroseeds, ISF, Office
*Rice ( <i>Oryza sativa</i> L.) (Revision)	TG/16/9(proj.3)	Mr. Kohei Imamura (JP)	AR, AU, BR, CN, ES, FR, HU, IT, KE, KR, MX, QZ, TZ, US, UY, CLI, Euroseeds, ISF, Office
*Rye ( <i>Secale cereale</i> L.) (Revision)	TG/58/7(proj.1)	Ms. Beate Rücker (DE)	AU, BR, CA, CZ, DK, ES, FI, FR, GB, IT, KR, NZ, PL, QZ, SK, ZA, CLI, Euroseeds, ISF, Office
*Soya Bean ( <i>Glycine max</i> (L.) Merrill) (Revision)	TG/80/7(proj.5)	Mr. Alberto Ballesteros (AR)	AR, AT, AU, BR, CA, CN, CO, ES, FR, HU, IT, JP, KR, NL, PL, PY, QZ, SK, US, UY, VN, ZA, CLI, Euroseeds, ISF, Office
Sugarcane ( <i>Saccharum</i> L.) (Revision)	TG/186/1	Mr. Tanvir Hossain (AU)	BR, CN, JP, KE, ISF, Office
Sunflower ( <i>Helianthus annuus</i> L.) (Revision)	TG/81/7(proj.1)	Mr. Zoltan Csuros (HU)	AU, AR, BR, CA, CN, DE, ES, FR, IT, JP, KE, QZ, RO, SK, UY, ZA, ISF, Euroseeds, CLI, Office
*Tea ( <i>Camellia sinensis</i> (L.) Kuntze) (Revision)	TG/238/2(proj.2)	Mr. Simeon Kibet Kogo (KE)	AR, BR, CN, KR, JP, TZ, US, Office
*Timothy ( <i>Phleum pratense</i> L.; <i>Phleum nodosum</i> DC.) (Revision)	TG/34/7(proj.1)	Mr. Lubomir Basta (SK)	CA, CZ, DE, FI, FR, IT, JP, NL, NZ, QZ, Euroseeds, ISF, Office
Zoysia grasses ( <i>Zoysia</i> Willd.)	NEW	Mr. Manabu Osaki (JP)	AU, BR, KR, ISF, Office

<sup>2</sup> for name of experts, see list of participants

**DRAFT TEST GUIDELINES TO POSSIBLY BE DISCUSSED IN 2021**

Species	Basic Document(s)
Bird's Foot Trefoil; Big Trefoil; Broad Leaf Trefoil; Narrow Leaf Trefoil; Lotus Subbiflorus ( <i>Lotus corniculatus</i> L.; <i>Lotus pedunculatus</i> Cav.; <i>Lotus uliginosus</i> Schkuhr; <i>Lotus tenuis</i> Waldst. et Kit. ex Willd.; <i>Lotus subbiflorus</i> Lag) (Revision)	TG/193/1

[End of Annex III and of document]