



TWV/50/25

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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

TECHNICAL WORKING PARTY FOR VEGETABLES**Fiftieth Session****Brno, Czech Republic, June 27 to July 1, 2016**

REPORT

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

1. The Technical Working Party for Vegetables (TWV) held its fiftieth session in Brno, Czech Republic, from June 27 to July 1, 2016. The list of participants is reproduced in Annex I to this report.
2. The session was opened by Ms. Swenja Tams (Germany), Chairperson of the TWV, who welcomed the participants and thanked the Czech Republic for hosting the TWV session.
3. The TWV was welcomed by Mr. Daniel Jurečka, General Director of the Central Institute for Supervising and Testing in Agriculture (ÚKZÚZ).
4. The TWV received presentations by Mr. Jiří Urban, Director, Plant production section, ÚKZÚZ, on the Section of Plant Production of ÚKZÚZ, and by Mr. Tomáš Mezlík, Director of the National Plant Variety Office, ÚKZÚZ, on the National Plant Variety Office, copies of which are provided in Annexes II and III to this report, respectively.

Adoption of the agenda

5. The TWV adopted the agenda as presented in document TWV/50/1 Rev.

Short reports on developments in plant variety protection

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

6. The TWV noted the information on developments in plant variety protection from members and observers provided in document TWV/50/22 Prov. The TWV noted that reports submitted to the Office of the Union after June 21, 2016, would be included in the final version of document TWV/50/22.

(b) *Reports on developments within UPOV*

7. The TWV received a presentation from the Office of the Union on the latest developments within UPOV, a copy of which is provided in document TWV/50/16.

Molecular techniques

8. The TWV considered documents TWV/50/2, TWV/50/2 Add and a presentation by the Office of the Union, a copy of which is provided in document TWV/50/2 Add.Rev..

Developments in the Technical Working Parties

9. The TWV noted the developments in the TWPs and BMT, as set out in paragraphs 5 to 15 of document TWV/50/2.

Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT)

10. The TWV noted that the BMT, at its fifteenth session, held in Moscow from May 23 to 27, 2016, had been invited to develop a list of possible joint initiatives with the Organization for Economic Co-operation and Development (OECD) and the International Seed Testing Association (ISTA), including the development of a list of terminology (definitions) used by OECD, UPOV and ISTA for consideration at the Technical Committee (TC), at its fifty-third session, to be held in 2017.

11. The TWV noted that the BMT, at its fifteenth session (see document BMT/15/28 "Report", paragraphs 39 to 44) had:

- noted that the development of a joint document explaining the principal features of the systems of the OECD, UPOV and ISTA could only start after agreement by OECD and ISTA;
- noted that the development of a joint OECD/UPOV/ISTA document containing an inventory of molecular marker techniques used by crop could only start after agreement by OECD and ISTA;
- noted that OECD, ISTA and UPOV had different objectives and cooperation between the organizations in the use of molecular techniques would need to reflect that. However, the BMT agreed that it would be important to explore circumstances in which the same techniques and information could be used. In the first instance, it agreed that it would be more effective to explore such possibilities on the basis of real situations rather than at a theoretical and institutional level;
- welcomed the proposal by the Netherlands to organize a practical workshop in 2017, with support from UPOV, OECD and ISTA, to explore how molecular techniques might be applied in an efficient way for UPOV, OECD and ISTA purposes; and
- agreed that possible future collaboration between UPOV, OECD and ISTA might include the harmonization of terms and methodologies used for different crops and the possible development of standards, after the agreement by these organizations.

OECD/UPOV/ISTA Joint Workshop on Molecular Techniques

12. The TWV noted that a Joint OECD/UPOV/ISTA/AOSA (Association of Official Seed Analysts) Workshop on Biochemical and Molecular Methods had been held in Paris on June 8, 2016, and noted that the following recommendations of the Joint OECD/UPOV/ISTA/AOSA Workshop had been approved by the Annual Meeting of the OECD Seed Schemes, held in Paris on June 9 and 10, 2016:

- To develop a joint document explaining the principal features (e.g. DUS, variety identification, variety purity, etc.) of the systems of OECD, UPOV, AOSA and ISTA and, for mutual understanding, to repeat the joint workshop at relevant meetings of the OECD and ISTA;
- To carry out a joint inventory by UPOV, OECD, AOSA and ISTA of the use of molecular marker techniques, by crop, with a view to developing a document containing that information. The OECD will contribute to the document by sharing the ongoing list of molecular techniques used by NDAs and continuously collected by the Secretariat;
- To develop a list of terms and their definitions as used by OECD, UPOV, AOSA and ISTA and to make an attempt to harmonize these;
- To consider organizing another similar workshop in three years' time; and

- To consider replacing “internationally validated” by another term such as “internationally harmonized.”

13. The Annual Meeting endorsed the proposal of the Netherlands to organize a practical workshop in 2017, with support of the OECD, UPOV and ISTA, to explore how molecular techniques might be applied in an efficient way for UPOV, OECD and ISTA purposes.

Presentation of Information on the situation in UPOV with regard to the use of molecular techniques

14. The TWV noted that the TC, at its fifty-second session, had agreed a draft question and answer concerning the information on the situation in UPOV with regard to the use of molecular techniques for a wider audience, including the public in general, as set out in document TWV/50/2, paragraph 23, and that, subject to agreement by the Administrative and Legal Committee (CAJ), at its seventy-third session, and the Consultative Committee, at its ninety-second session, the draft would be presented for adoption by the Council, at its fiftieth ordinary session to be held in Geneva on October 28, 2016.

Developments in UPOV members

15. The TWV received a presentation by an expert from the Netherlands on “Efficient DUS test in French bean (*Phaseolus vulgaris* L.) by using molecular data”, a copy of which is provided in document TWV/50/2 Add. Rev..

16. The TWV welcomed the work being done by the Netherlands to assess whether an approach of combining phenotypic characteristics and molecular distances in the management of variety collections, as envisaged in document TGP/15 “Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)”, might result in a more efficient DUS examination in French Bean. It noted that the approach did not rely only on molecular techniques to make decisions on DUS. The TWV noted that it would probably result in the need for less varieties of common knowledge to be grown in the growing trial and, therefore, may increase the risk of needing to organize a third growing cycle. The TWV noted that the use of molecular techniques was an extra step and the measure of overall efficiency of the DUS examination would need to take that cost into account. It further noted that the efficiency of such an approach would need to be assessed on a crop-by-crop basis and that it would also be appropriate to consider the efficiency of cooperation on the use of molecular markers in DUS examination with other UPOV members. The TWV expressed its interest to receive a report on further results and analysis by the Netherlands at its fifty-first session.

17. The TWV was informed by an expert of the European Union on the implementation of its strategy of integration of molecular techniques in DUS examination (IMODDUS).

TGP documents

18. The TWV considered the TGP documents below on the basis of documents TWV/50/3 and TWV/50/3 Add..

Matters for adoption by the Council in 2016

19. The TWV noted the revisions to documents TGP/7, TGP/8 and TGP/0 to be put forward for adoption by the Council at its fiftieth session, as set out in paragraphs 6 to 13 of document TWV/50/3.

Possible future revisions of TGP documents

20. The TWV noted that the proposals for future revisions of TGP documents to be discussed by the TWPs at their sessions in 2016 would be dealt with under separate documents.

New proposals for future revisions of TGP documents

21. The TWV noted the new proposals for revision of TGP documents to be discussed by the TWV at its session in 2016.

Program for the development of TGP documents

22. The TWV noted the program for the development of TGP documents, as set out in Annex III to document TWV/50/3.

TGP/7: Development of Test Guidelines: Revision of document TGP/7: Drafter's Kit for Test Guidelines

23. The TWV considered document TWV/50/9 and received a demonstration from the Office of the Union of Version 1 of the web based TG Template.

24. The TWV noted the issues addressed in response to the comments by Leading and Interested Experts that participated in the testing of the prototype of the web based TG Template, as set out in paragraphs 21 and 22 of document TWV/50/9.

25. The TWV noted that the TC had agreed the format of the Table of Characteristics in all Test Guidelines with a structure as set out in paragraph 16 of document TWV/50/9.

26. The TWV noted that the TC had agreed that guidance should be developed on the order of the methods of observation for a characteristic in the Table of Characteristics to indicate that the most commonly used method was displayed first.

27. The TWV noted that the development of Version 2 of the web-based TG Template would not start before 2018, subject to availability of resources, after Version 1 had been fully stabilized and tested.

28. The TWV noted that document TGP/7 would be revised to reflect the introduction of the web-based TG Template after Version 1 is fully stabilized and tested.

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

Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, Section 9: the Combined-Over-Years Uniformity Criterion (COYU)

29. The TWV considered document TWV/50/10.

30. The TWV noted that the TC, at its fifty-second session, had agreed to request members of the Union to provide larger data sets to the United Kingdom for developing probability levels for the new method that would match results obtained using the previous probability levels, as set out in paragraph 20 of document TWV/50/10.

31. The TWV noted that the Office of the Union had issued UPOV Circular E-16/098 to invite UPOV members' experts to provide to the United Kingdom by May 27, 2016, data sets including at least 100 candidate varieties, with a possibility that data for those 100 varieties could be derived from several years.

32. The TWV noted the report by an expert of the United Kingdom on the results and further progress, including contribution of data made at the thirty fourth session of the TWC.

33. The TWV noted the offer made from the expert from the expert of France and the United Kingdom to provide data on pea and field pea, respectively.

Revision of document TGP/8: Part II: Selected Techniques used in DUS Examination, New Section: Examining DUS in Bulk Samples

34. The TWV considered document TWV/50/11.

35. The TWV considered the proposed guidance for examining DUS in bulk samples as presented in the Annex to document TWV/50/11, for inclusion in a future revision of document TGP/8.

36. The TWV received the confirmation by the drafter of the proposed guidance (Ms. Amanda van Dijk (Netherlands)), that in the paragraph reproduced below, the 3 subsamples are per plot, and proposed to read the following:

“(2015, d) Subplots.

“Making use of subplots in order to indicate the uniformity of the characteristic. Only one observation per plot, but there are more subplots in the trial. An example is dry matter content in Onion. There are three subsamples in the trial. It is possible to work with 3 subsamples per plot for an indication of uniformity. (see: TGP/8.6).”

37. The TWV was not in favor of reducing the number of plants as proposed in the guidance and the paragraph reproduced below, because it was important to have the full range of expression of variation:

“(2015, i) Plant number.

“Use a different number of plants for this characteristic to be tested in the guideline that is in congruence with the nature of the characteristic. For example: in a certain guideline it is mentioned that 60 plants have to be judged for uniformity. If the characteristic involved is not suitable for judgment of 60 plants, one can propose a lower number of plants for the relevant characteristic for example 5 plants.”

38. The TWV noted that the proposed guidance does not present enough examples for examining in DUS sample. Therefore, the TWV requested the drafter to further elaborate on the proposal and to include more examples, as requested by the TC, at its fifty-second session. It noted that the expert from France planned to provide other examples of characteristics based on bulk samples for vegetable crops.

Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, New Section: Data Processing for the Assessment of Distinctness and for Producing Variety Descriptions

39. The TWV considered document TWV/50/12 and noted the developments reported in this document.

40. The TWV considered the information provided by the participants in the practical exercise on the reasons and situations in which example varieties, crop expert judgement and equal-spaced states would/would not be appropriate for transforming observations into notes.

41. The TWV agreed on the different relevant elements that need to be taken into consideration when transforming measurements into notes, as the importance of a good set of example varieties (in UPOV Test Guidelines and regional or national set of example varieties), the expert's knowledge about the influence of the environment and the variation within the specie. Therefore the TWV agreed that a case by case approach is needed in relation to assessment of distinctness and for producing variety descriptions when processing data.

TGP/10: Examining Uniformity

Revision of document TGP/10: Assessing uniformity by off-types on basis of more than one growing cycle or on the basis of sub-samples

42. The TWV considered documents TWV/50/13 and TWV/50/13 Add..

43. The TWV received a presentation on “Practical experience of assessing Uniformity by off-types: Reject after the 1st cycle on the official DUS seed lot” by an expert from France. A copy of the presentation is provided in document TWV/50/13 Add. Rev.

44. The TWV noted that the TWA had agreed to request a video link with the experts from the TWC to discuss the new proposed “Approach 3: Combining the results of two growing cycles” at its forty-fifth session, to be held in 2016.

45. The TWV considered the draft guidance as presented in Annexes I and II to document TWV/50/13 for inclusion in a future revision of document TGP/10.

46. The TWV noted the concern expressed by the representatives of ESA and CropLife about Approach 3, and noted the importance they attached to consistency in results for the assessment of uniformity throughout all members of the Union.

47. The TWV considered the different approaches and noted that in the vegetable sector, Approach 1 was the most commonly used.

48. The TWV agreed that, in conjunction with the revision of document TGP/10: Assessing uniformity by off-types on basis of more than one growing cycle or on the basis of sub-samples, it would be important to review the following guidance provided in document TGP/8/2: Part II: 8: "The method of uniformity assessment on the basis of off-types", because it did not reflect the practice within members of the Union:

"8.1.7 Method for more than one single test (year)

"8.1.7.1 Introduction

"8.1.7.1.1 Often a candidate variety is grown in two (or three years). The question then arises of how to combine the uniformity information from the individual years. Two methods will be described:

- (a) "Make the decision after two (or three) years based on the total number of plants examined and the total number of off-types recorded. (A combined test).
- (b) "Use the result of the first year to see if the data suggests a clear decision (reject or accept). If the decision is not clear then proceed with the second year and decide after the second year. (A two-stage test).

"8.1.7.1.2 However, there are some alternatives (e.g. a decision may be made in each year and a final decision may be reached by rejecting the candidate variety if it shows too many off-types in both (or two out of three years)). Also there are complications when more than one single year test is done. It is therefore suggested that a statistician should be consulted when two (or more) year tests have to be used."

Variety denominations

49. The TWV considered document TWV/50/4.

50. The TWV noted the work on the possible development of a UPOV similarity search tool for variety denomination purposes by the WG-DST, as set out in paragraphs 5 to 13 of document TWV/50/4.

51. The TWV noted that a revision of document UPOV/INF/12/4 (document UPOV/INF/12/5), in relation to changes of registered variety denominations had been adopted by the Council, at its forty-ninth ordinary session (see paragraph 14 of document TWV/50/4).

52. The TWV noted that the mandate and the composition of the WG-DST had been expanded to prepare recommendations for the CAJ concerning a possible revision of document UPOV/INF/12 (to become the WG-DEN).

53. The TWV noted that the first meeting of the WG-DEN had been held in Geneva, on March 18, 2016.

54. The TWV agreed that it would be important to ensure the compatibility of all denomination search tools in use or to be developed, in order to avoid any possible discrepancies in results to be obtained. It further agreed that in order to ensure relevant information to be displayed in all tools, each authority should provide on a regular basis accurate data.

55. The TWV noted the comment made by the expert from the European Union on the CPVO Variety finder tool, that the database is freely available on-line and now contains trademarks.

Uniformity assessment

56. The TWV noted that document TWV/50/13 "Assessing uniformity by off-types on basis of more than one growing cycle or on the basis of sub-samples" had been discussed under agenda item "TGP documents".

New issues arising for DUS examination

57. The TWV received presentation by an expert from the Netherlands, on "Vegetatively propagated varieties in a normally seed propagated species" a copy of which is provided in document

TWV/50/23 Add. Rev.. The TWV noted that no other members of TWV have experience on this matter and that its requires more cost and labour.

58. The TWV received presentation by an expert CPVO on "Seed priming", as reproduced in document TWV/50/23 Add. Rev.. and noted that the trial has demonstrated no influence of seed priming on the expression of morphological or resistance characteristics. The TWV noted that, on the basis of these results, Examination Offices within CPVO have now the possibility to accept primed seeds for tomato rootstocks and eggplant DUS examination. The TWV noted that in relation to storage of reference material it would be necessary to note that it needs special attention. It was also agreed that seed priming is not a universal formula and is kept confidential by seed companies, therefore it is difficult to foresee if the results from this trial could be extrapolated to all primed seeds. The TWV agreed that the information on whether seeds have been primed should be indicated when submitting the seeds, in order to pay special attention to any variation which could occur in the examination (e.g. earliness, height of plants...)

59. The TWV expressed some concerns about the speed for making partial revisions of Test Guidelines, especially in relation to disease characteristics, which are particularly relevant in the vegetable sector. The TWV reviewed the guidance provided in document "TGP/7/4 – Section 2: Procedure for the Introduction and Revision of UPOV Test Guidelines", as reproduced below, and invited the TC to consider whether a revision of this existing guidance could be envisaged to allow more flexibility to add new proposals for partial revision at any time in the course of the year:

"2.2.1 STEP 1 Proposals for the Commissioning of Work

"The Technical Committee is responsible for the commissioning of any work concerning Test Guidelines. Proposals for the commissioning of work by the Technical Committee can be made: TGP/7/4 – Section 2: Procedure for the Introduction and Revision of UPOV Test Guidelines

"(a) by a UPOV body

"Most Test Guidelines are commissioned on the basis of proposals from a TWP, but may also be proposed by the Technical Committee itself, the Council, the Consultative Committee or the Administrative and Legal Committee (hereinafter referred to as "the CAJ").

"(b) directly to the Technical Committee by a member of the Union;

"(c) directly to the Technical Committee by an observer State or observer organization to the Technical Committee.

[...]

"2.3.3 Partial Revision

"2.3.3.1 Where it is appropriate to update only a specific part of the Test Guidelines without undertaking a comprehensive review of the entire Test Guidelines, a "partial revision" is undertaken.

"2.3.3.2 Partial revisions often arise as a result of new breeding developments, for example requiring the introduction of a new state of expression for an existing characteristic, or a new characteristic, or as a result of new developments for characteristics such as disease resistance, for example resulting in the need for new states for disease races. In such cases, in order to retain internationally harmonized variety descriptions, in particular for asterisked characteristics, it is beneficial to have the possibility of a rapid procedure for revision of Test Guidelines. Therefore, as an alternative to following the procedure for a full revision of the Test Guidelines (see Section 2.3.2), any member of the Union or observer State or observer organization to the Technical Committee may make a proposal for a partial revision directly to the relevant TWP(s). It is not necessary for a Leading Expert or subgroup of interested experts to be established, although it would be beneficial for the proposer of the partial revision to consult with interested experts before developing a specific proposal.

"2.3.3.3 For a partial revision of Test Guidelines, a new draft of the Test Guidelines should not be prepared. The proposer of the partial revision should prepare a TWP document specifying only the revisions to be made to the adopted Test Guidelines. The timetable for the consideration of the proposal by the Technical Working Parties is as follows:

Action	Latest date before the TWP session
Circulation of draft TWP document to TWP by proposer (to be distributed by the Office):	14 weeks
Comments to be received from TWP:	10 weeks
Sending of draft TWP document to the Office by the proposer:	6 weeks
Posting of TWP document on website by the Office:	4 weeks

“2.3.3.4 The procedure for approval of the proposed partial revision would be as set out in Sections 2.2.6 to 2.2.8, except that reference to draft Test Guidelines would be replaced by reference to a TC document specifying the revisions to be made to the adopted Test Guidelines and the reference to Leading Expert and interested experts would be replaced by reference to the proposer and the TWP, respectively.”

60. The TWV agreed that it would be important for examination offices and DUS experts to have opportunity to make a proposal for a partial revision of existing UPOV Test Guidelines, in the period after the TC but before the TWP. It further agreed that sufficient time would be given to inform all relevant experts and members of UPOV and for the relevant experts to be able to check the proposal, if necessary.

Use of disease and insect resistance characteristics in DUS examination

61. The TWV considered documents TWV/50/21 and TWV/50/21 Add. Rev.

Use of disease and insect resistance characteristics in DUS examination

62. The TWV noted that the use of a characteristic for DUS purposes did not mean that it would need to become a breeding aim, and vice-versa. The use of an disease or insect resistance characteristic for DUS purposes did not require breeders to select for that characteristic in their breeding programs, but would require them to ensure varieties were uniform and stable for the characteristic, in the same way as for any other DUS characteristics.

63. The TWV noted the approach by the European Union for their Test protocols, and considered the proposal with regard to the idea of phasing-in asterisked characteristics (which lead to obligatory testing in CPVO Protocols over a period of time) in UPOV Test Guidelines, as presented in document TWV/50/21. The TWV agreed that more time was needed for members of the Union to consider if such an approach would be appropriate.

64. The TWV welcomed the information provided on “MatRef: a national network managing seeds and strains for disease resistance tests”, by the expert from France, and “Harmonization of resistance tests to diseases for DUS testing: Harmores 2”, by the expert from the Community Plant Variety Office of the European Union (CPVO), as reproduced in document TWV/50/21 Add. Rev.. It agreed that it would be useful to have an update on those projects at its fifty-first session and also to present information to the Technical Committee (TC), at its fifty-third session, under the discussion item “Use of disease and insect resistance characteristics in DUS examination”.

65. The TWV noted that the approach presented in document TWV/50/21 Add. Rev. was based on the use of molecular data obtained by the DUS examination office to verify information on disease resistance provided by the applicant in the Technical Questionnaire. If the molecular data was consistent with the information provided by the applicant, the DUS examination would be based on the molecular data but if there was a discrepancy or the applicants did not test, a bioassay would be used for the DUS examination. The TWV considered that it might be necessary to request confirmation from the applicant that the information provided on disease resistance was based on a bioassay and, if that was not the case, a bioassay would need to be used for the DUS examination. Such an approach could then be proposed for inclusion in the UPOV Test Guidelines.

66. The TWV noted that the above approach was consistent with the model “Characteristic-Specific Molecular Markers”, as set out in TGP/15 “Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)”. It further noted that the above approach verified the reliability of the link between the molecular marker and the disease resistance characteristic for every candidate variety.

67. The TWV agreed that it would be valuable for the above approach to be presented to the Technical Committee (TC), at its fifty-third session, under the discussion item "Use of disease and insect resistance characteristics in DUS examination".

Matters concerning variety descriptions

68. The TWV considered documents TWV/50/14 and TWV/50/14 Add..

69. The TWV noted the purpose of the variety description developed at the time of the granted of the breeder's right (original variety description), and the status of the original variety description in relation to the verification of the conformity of plant material to a protected variety for enforcement of the breeder's right, as set out in paragraph 28 of document TWV/50/14.

70. The TWV noted the presentations on "matters concerning variety descriptions" received by the TWPs, at their sessions in 2015, as set out in paragraph 7 of document TWV/50/14.

71. The TWV noted the comments by the TWPs, at their sessions in 2015, on matters concerning variety descriptions and the role of plant material used as the basis for the DUS examination, as set out in paragraphs 8 to 26 of document TWV/50/14.

72. The TWV considered the presentations made by experts on their experiences with regard to the role of plant material used as the basis for the DUS examination in relation to matters presented in paragraph 31 of document TWV/50/14.

73. The TWV noted the presentations by the experts from the European Union and from France, copies of which are provided in document TWV/50/14 Add.. The TWV agreed that for identification purposes a standard sample is preferred, as a variety description is only a source of information which might be updated internally.

74. The TWV agreed that guidance for variety descriptions would be useful and noted that the information in document TWV/50/14, paragraph 28, and the conclusions provided by the expert from the European Union in document TWV/50/14 Add., Annex II, slide 19 could be a good basis.

75. The TWV suggested to the TC to consider available guidance on variety description and to consider whether new guidance on the role of the variety description and plant material should be drafted.

Number of growing cycles in DUS examination

76. The TWV considered documents TWV/50/15 and TWV/50/15 Add..

77. The TWV noted that the TC, at its fifty-second session, had agreed to invite members of the Union to simulate the impact of using different numbers of growing cycles on DUS decisions using actual data and to report on their results at the TWP sessions in 2016 and at the fifty-third session of the TC.

78. The TWV received presentations on "Minimum number of growing cycles", by an expert from France and by an expert from the Netherlands, copies of which are provided in document TWV/50/15 Add..

79. The TWV agreed that it was necessary to consider the minimum number of growing cycles on a case by case basis in order to design a DUS examination in the most efficient and effective way. It noted that the quality of information provided by the applicants in the Technical Questionnaire could affect the choice of minimum number of growing cycles and agreed that possibilities might be explored to provide guidance (e.g. on photographs) and incentives for applicants to provide accurate and reliable data, for example by offering the prospect of a reduced number of growing cycles. The potential of molecular data to improve the selection of similar varieties was also considered as a possible means of reducing the minimum number of growing cycles in some situations. It was also noted that a second growing cycle for a particular variety might not be required if a variety was very clearly distinct from all varieties of common knowledge after a single growing cycle, although a second cycle might be required for uniformity, stability and description purposes (see TGP/7/4, chapter 4.1.2).

80. The TWV agreed that a reduction of the number of the cycles in DUS examination might have an impact on the accuracy of the variety description and that increase of the use of reduced number of growing cycles will have an important increase on the examination cost per cycle.

81. The TWV noted that the United Kingdom planned to simulate the impact of using different numbers of growing cycles on DUS decisions using actual data and to report on their results at the fifty-third session of the TC.

Proposal concerning the 'Guide to the UPOV Code System' on the Principal Botanical name for Inter-Generic and Interspecific Hybrids

82. The TWV considered document TWV/50/18, prepared by an expert from the European Union.

83. The TWV considered the proposal to present the principal botanical name for UPOV Codes of hybrid genera and species indicating the parents in alphabetical order. The TWV noted the existence of different procedures among members of the Union and noted that, in some members of the Union, the information on parents of an intergeneric or interspecific hybrid variety were published with the female parent first. On that basis, the TWV agreed that it would not be appropriate to revise the Guide to the UPOV Code System in relation to the principal botanical name for inter-generic and interspecific hybrids.

Discussion on draft Test Guidelines

Agaricus (*Agaricus bisporus* (Lange.) Sing.) (Revision)

84. The subgroup discussed document TG/2591/2(proj.2), presented by Mr. Sergio Semon (European Union), and agreed the following:

Cover page	to delete English alternative name "tukuritake"
3.4.2	to correct reference to Chapter 8.1 (f) to 8.3
3.4.3	- to review format - to read "A minimum growing surface per strain of 1m ² is advised in order to obtain sufficient fruiting bodies in both stages."
6.5	to read ".... in chapter 8.3"
Table of Chars.	to add underlining if characteristic names ("Only varieties..."; see TGP/7, GN 18)
Char. 2	- to explain what "pin" is (young primordial fruit body) - to read "Number of pins"
Char. 3	- to add example variety "Euromycel 30" for state 3 - to add example variety "Sylvan A15" for state 5
Char. 7	- to have states from "low" to "high" (ratio) - to add illustration (from TGP/14) - to add example variety "Brawn" for state 3
Char. 8	to be deleted
Char. 9	- to replace (c) with (a) - to add growth stage 2
Char. 10	to read "Only varieties with..."
Char. 11	- to read "Stipe: oxidation at cutting edge" - to be indicated as QL and to have states absent (1) and present (9) - to have example variety "Sylvan A15" for state 1, and "Heirloom, Somycel 53" for state 9 - to add explanation when and where (to add arrow) to observe (2 to 10 minutes after harvest)
Char. 14	to have states from "low" to "high" (ratio) to add illustration (see Char. 7)
Char. 15	- to read "Only varieties with..." - to be indicated as QL - to update explanation - state 1 to read "lighter", state 2 to read "darker" and delete state medium
Char. 17	to provide better illustrations for states 5 and 7

Char. 18	- to be move after Char. 9 - to read "Only varieties with brown cap: Cap: intensity of color" - to add example variety "BP-1" for state 9
Char. 19	- to have notes 1, 2, 3 - to move example varieties "Horronda, Sylvan A15" to state "thick"
Char. 21	to be indicated as QL
Char. 22	- to delete (b) and (f) from the column for growth stages - to replace (a) and (c) with (d)
Char. 23	to be deleted
Char. 24	to read "Time of opening of cap"
Char. 25	to spell "Stipe" with small "s"
Char. 28	to check whether to update example varieties (add "J10263" for state 1, replace current example variety for state 3 with "ML0406"
Char. 29	to delete "Sylvan A15" as example variety from state 1 and add "ML1496"
8.1 (a), (c), (d)	to read "Observations on..."
8.1 (b), (e)	to be updated
8.3	to be updated with the life cycle <i>Agaricus bisporus</i>
Ad. 2	-to replace "assess with observed" - to add "pin is a young primordial fruit body"
Ad. 3	to read "The time of the first day of harvest is recorded when more than 5 fruiting bodies in the first flush have reached growth stage 2."
Ad. 4	to read "... fruit bodies <u>is</u> harvested"
Ad. 5	to be moved to 8.1 (see Ads. 12, 13, 16)
Ad. 6	to read "...in the middle of the stipe"
Ad.10	to read "The stipe color is observed at harvest."
Ad. 11	to add explanation that to be observed when the stipe is cut transversally in the middle
Ad. 12	to be deleted
Ad. 13	to be deleted
Ad. 15	to replace current with new illustrations: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>1 lighter</p> </div> <div style="text-align: center;">  <p>2 darker</p> </div> </div>
Ad. 22	to provide better explanation
Ad. 23	to be deleted
Ad. 24	to be deleted
Ad. 28	to replace with better photos or drawings (from TGP/14)
8.3	to be updated
9.	to be updated
TQ 4.1	to be completed
TQ 5	to add all states to have full scale for Chars. 4 and 13
TQ 5.6	to be deleted
TQ 6	to add example

**Brown Mustard (Brassica juncea (L.) Czern.)*

85. The subgroup discussed document TG/BRASS_JUN(proj.4), presented by Mr. Takayuki Nishikawa (Japan), and agreed the following:

Cover page	to check English alternative names (India/Indian mustard)
4.2	to be checked and clarified
5.3	- to add "In cases of doubt to which type a variety belongs to, it should be tested in all relevant types." - to add table of types from 8.1 - to be updated
Table of Chars.	- to check whether to add underlining to characteristic names ("Only varieties..."; see TGP/7, GN 18) - throughout table: only first name for ex. vars (e.g. "Akaoba Takana", "TTK456")
Char. 1	- to delete example variety "Hagarashina" from state 3 - to check color of example variety "Terrafit" (brown or black?)
Char. 2	to add example variety "Kigarashina" for state 3
Chars. 3, 4, 7, 9	to add (*)
Char. 11	- to move to "total surface" to Ad. 2 - to delete MS
Char. 12	- to add explanation on lobing (see e.g. TG/179/3) - to add (*)
Char. 14	to add (*)
Char. 15	to add colon "Only varieties with anthocyanin coloration: absent..."
Char. 16	to have states absent or very weak (1), weak (2), medium (3), strong (4), very strong (5)
Chars. 17, 18	to add (*)
Char. 19	"at widest point" to become Ad. 19
Char. 25	to read "Stem: type of main stem" to move "(excluding heading type)" to Ad. 25 to have states narrow conical (1), rounded (2), broad conical (3), branched (4)
Char. 27	to be indicated as MS/MG
Char. 28	to be deleted
Char. 29	- to add explanation - to have growth stage indicated as 65-79
Char. 30	- to have growth stage indicated as 65-79 - to add explanation on which siliqua to be observed
Char. 31	- to have growth stage indicated as 65-79 - to add explanation
Char. 32	to have growth stage indicated as 65-79
Char. 33	to have growth stage indicated as 65-79
Char. 34	- to review wording of the characteristic - to add explanation how to assess
8.1 (a)	to be updated and moved to 8.3
8.1 (b)	- to be moved to 5.3 - to be updated
8.1 (c)	first sentence to read "The measurements should be made on cotyledons of 30 seedlings."
8.1 (f)	to read "silique" in the illustration
Ad. 1	to be deleted (no illustrations for color)
Ad. 11	to be improved (how to observe)
Ad. 23	to be deleted
TQ 7.3	to be updated

Calabrese, Sprouting Broccoli (Revision)

86. The subgroup discussed document TG/151/5(proj.1), presented by Ms. Marian van Leeuwen (Netherlands), and agreed the following:

Cover page	to delete botanical name " <i>Brassica oleracea</i> L. var. <i>botrytis</i> (L.) Alef. var. <i>botrytis</i> Duch." (also to be deleted from Genie)
1.	to add explanation on distinction between Cauliflower and Broccoli
5.3 (a), (b)	- to be deleted - to review grouping characteristics
Table of Chars.	- to check whether to add underlining if characteristic names ("Only varieties..."; see TGP/7, GN 18) - to delete "A Getti di Napoli" and replace it with "Spigariello" throughout the TG
Char. 1	- to check example varieties - example variety for state 9 to read "Burbank" - to check whether to duplicate characteristic for Calabrese and Sprouting type
Char. 9	to add explanation
Char. 11	to add example varieties
Char. 13	- to be deleted and moved to 5.3 and TQ 7
Char. 16	- to add explanation on how to assess on Sprouting type - to check example varieties for state 1 (to be moved to state 2 or 3?)
Char. 17	to delete "of main head" (see explanation 8.1; Calabrese type only one head)
Char. 18	to replace "cream" with "whitish"
Char. 19	- to replace "cream" with "whitish" - to move wording in brackets to explanation in 8.2
Char. 20	- to add example varieties - to read "Only varieties with Head: color: green, grey green or blue green: Head: intensity of anthocyanin coloration"
Char. 23	to add explanation
Char. 24	to be checked
Char. 27	to replace "cream" with "whitish"
Char. 28	- to check whether VG is correct - to check whether really QL - to add illustrations
8.1	to remove underlining
8.1 (a), (b)	to read "Observations on..." (delete "all")
8.1 (a)	to check indications of leaf length and width
8.1 (c)	to check whether to read "...have a head ready for harvest"
Ad. 5	to check whether to improve explanation
Ad. 13	to be moved to 8.1 (see comment on Char. 13)
Ad. 14	to improve illustrations (to replace photos with drawings?)
Ad. 17	to be presented in grid (see TGP/14)
Ad. 21	to add botanical definition of knobbling
TQ 4.1.1 (a), (b)	to delete request for indication of female and male parent
TQ 5.1, 5.2, 5.3, 5.6, 5.9, 5.10	to complete to full scale
TQ 6	to add example

**Leaf Chicory* (*Cichorium intybus* L. var. *foliosum* Hegi)

87. The subgroup discussed document TG/154/4(proj.4), presented by Ms. Romana Bravi (Italy), and agreed the following:

Cover page	- French name to read "Chicorée à large feuille" - Spanish name to read "Achicoria de ensalada"
2.3	to delete "5000 seeds in case of a parental line"
Table of Chars.	to check whether to add underlining if characteristic names ("Only varieties..."; see TGP/7, GN 18)

Char. 3	to delete (a)
Char. 5	- to be indicated as PQ - to add illustrations in grid (see TGP/14)
Char. 6	to be indicated as MS/VG
Char. 8	to move wording in brackets to Ad. 8
Char. 14	to add illustrations (drawings)
Char. 20	to be indicated as MS/VG
Char. 22	- to correct order of states: ovate (1), oblate (2), circular (3), elliptic (4) - to delete last (empty) column
Char. 24	to add explanation (see TG Lettuce)
Char. 25	- to check whether really QL - to read "Head: anthocyanin coloration of cover leaves"
Char. 26	to read "Head: color of cover leaves"
Char. 27	to read "Head: type of anthocyanin distribution of cover leaves"
Char. 30	state "blue" to have note 2
Char. 31	to be indicated as MG/VG
8.1	- to check allocation of explanations to characteristics - change order of explanations ((b) to become (a))
Ad. 18	to read "...the number of days..."
Ad. 22	to delete last column
Ad. 23	to replace photos with drawings
TQ 5	to complete scales to full scales for 5.1, 5.2, 5.3, 5.7, 5.9 (to have all states from 1 to 9)

*Lettuce (*Lactuca sativa* L.) (Revision)

88. The subgroup discussed document TG/13/11(proj.3), presented by Ms. Amanda van Dijk (Netherlands), and agreed the following:

5.3 (table)	- to update state 4 of Char. 27 - to improve quality/ format of the table (not a picture) - to add characteristic numbers to table
Table of Chars.	to check whether to add underlining to characteristic names ("Only varieties..."; see TGP/7, GN 18)
Char. 1	- to check whether to be indicated as PQ - to add new state "brown" with example variety
Char. 7	to be moved after Char. 10
Char. 8	to reorder states 10 to 12: broad obtrullate (10), obovate (11), oblanceolate (12)
Char. 9	to add new state 1 "acute" with example variety "Celtuce"
Char. 12	purplish to be moved before brownish
Char. 14	to read "Leaf: color"
Char. 27	- to be indicated QN - to delete example variety "Actarus" from state 1 - to be indicated as VG/MS - state 4 to read "narrow oblate"
Char. 30	to read "Only stem type varieties: Stem: width"
Chars. 38 to 50	to read "Resistance to <i>Bremia lactucae</i> (Bl) isolate Bl: xx"
Char. 38	to delete (*)
Char. 52	- to be indicated VG/MS - to read "Resistance to <i>Nasonovia ribisnigri</i> (Nr) biotype Nr: 0"
Char. 53	to read "Resistance to <i>Fusarium oxysporum</i> f.sp. <i>lactucae</i> (Fol) race 1"
8.1 (a)	to review table (explanation for Butterhead type is missing)
Ad. 4	to read "In case of doubt, observations can be made by cutting the plant in half."
Ad. 8	to move "state 12" one column left, to review order of states and delete last column
Ad. 9	to add illustration for new state "acute"
Ad.11	- to be combined with Ad. 12 - to review table (strong/reddish: Jadigon)
Ad. 12	to be combined with Ad. 11

Ad. 14	- to be combined with Ad. 15 - to be updated (see comment on Char. 14)
Ad. 15	to be combined with Ad. 14
Ad. 19	to provide picture for state 7
Ad. 23	to read "...incisions observations should not be made on..."
Ad. 29, 30	to improve quality of the illustrations provided
Ad. 37	to clarify what we are looking at (close up)
Ad. 53	to review format
Ad. 53 (4.)	- to read "NIAS Genebank[1] (JP), CREA-SCS[2] (IT), Naktuinbouw[3] (NL), GEVES[4] (FR)" - e-mail address in the footnote for IT to read "scs.sa@crea.gov.it"
Ad. 53 (11.2)	to clarify that the explanation refers to two different ways of observing
TQ 5.5	to be moved to TQ 7.3 with option "not tested"
TQ 6	to be completed
TQ 7.3	- sentence on top of table to read "Type (see 5.3 and 8.1 in the Test Guidelines for Lettuce (document TG/13/11) for explanations)." - to delete example varieties for disease resistance characteristics - to add Characteristic 53

Pepino (*Solanum muricatum*)

89. The subgroup discussed document TG/PEPIN(proj.2), presented by Mr. Jun Araseki (Japan), and agreed the following:

2.3	to read "The minimum quantity of plant material, to be supplied by the applicant, should be: <p style="text-align: center;">25 plants"</p>
3.3.2	to be deleted
4.2.2	to read "For the assessment of uniformity of vegetatively propagated varieties,..."
Table of Chars	- to check number of (*) - to add more example varieties - to clarify time of assessment of characteristics (change order accordingly and add explanations, see e.g. TG/119)
Char. 3	to be checked whether really QL; if not to be indicated as QN and to have states absent or sparse (1), medium (2), dense (3)
Char. 4	to add (*)
Char. 5	- to add (*) - to move (d) to Ad. 5, 6
Char. 7	to add example varieties to read "Leaf: intensity of anthocyanin coloration of midrib"
Char. 8	to correct order of states: broad lanceolate (1), medium lanceolate (2), circular (3), elliptic (4) (see Ad. 8 and TGP/14)
Char. 10	to have states few (1), medium (2), many (3) and indication of numbers to become Ad. 10
Char. 14	- to check whether to add state "medium green" - state 2 to read "yellow"
Char. 15	to move (e) to Ad. 15,16
Char. 17	- to have states from "low" to "high" (ratio) - to check whether to delete (as length, width and shape of fruit are assessed)
Char. 18	to change order of states to have states broad ovate (1), medium ovate (2), circular (3), oblong (4), elliptic (5)
Char. 19	to check whether to reduce scale
Char. 20	to invert states of expression
Char. 21	to read "Fruit: calyx size compared to diameter of fruit"
Char. 22	- to check correlation with Char. 14 (color of young fruit vs. color of fruit) - to check whether more colors should be added (e.g. purple)
Char. 24	state 4 to read "greyish purple"

Char. 26	- to check method of observation - to add explanation that fruit needs to be cut for assessment of firmness - to add example varieties - to check whether useful characteristic - to add when to be observed
Char. 27	to be deleted
Char. 28	to check whether to read "Time of harvest maturity"
8.1	to check whether to be reviewed (see comment on time of assessment on table of Chars.)
Ad. 2	to read "The anthocyanin coloration of the stem should be observed in the middle third of the primary stem"
Ad. 7	to read "The anthocyanin coloration of the midrib should be observed on the lower side of the leaf."
Ad. 8	- to read "In the case of varieties with compound leaves,..." - grid to be reviewed (see comment on Char. 8)
Ad. 18	- grid to be reviewed (see comment on Char. 8)
Ad. 20	to update states of expression according to Char. 20
Ad. 21	to review explanation and add illustrations
Ad. 23	to read "To be observed by comparing the area of the stripes to the surface area of the fruit."
Ad. 26	- to check whether to read "The firmness should be assessed by hand comparing it to the firmness of the example varieties." - to check assessment by hand or with a penetrometer)
Ad. 27	to be deleted
Ad. 28	to check wording
TQ 4.2.1	to be deleted
TQ 5.4	to complete scale with notes from 1 to 9

Tomato (Partial Revision: Characteristic 57)

90. The subgroup discussed document TWV/50/20, presented by Mr. Sergio Semon (European Union) and agreed the following.

Ad. 57 (i)	- to delete (i) from title - before table with method to add "(i) agroinoculation method" - 8.8: to correct spelling of "glicerol" to "glycerol" - 13.: second sentence to read "TYLCV-IL is the strain most widely spread worldwide."
Ad. 57 (ii)	- to delete title - before table with method to add "(ii) White fly inoculation method" - 13.: second sentence to read "TYLCV-IL is the strain most widely spread worldwide." - last row of 13. to read "Source of inoculum; IHSM, CSIC guillamon@eelm.csic.es or INIA cardaba@inia.es"

Tomato Rootstocks (Partial revision: coverage of Test Guidelines and Characteristic 16)

91. The subgroup discussed document TWV/50/19, presented by Mr. David Calvache (Spain) and agreed the following:

Char. 16	state 1 to read "not developed or very small"
Ad. 16	- to delete photo - sentence to read "Varieties of certain interspecific crosses for tomato rootstocks, may not have viability for production of fruits, or exceptionally produce few very small fruits (note 1)."

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

92. The subgroup discussed document TG/37/11(proj.2), presented by Ms. Stéphanie Christien (France), and agreed the following:

Cover page, 1.	to check coverage of TG (to check whether to include leaf types or create separate TGs)
2.3	quantity of plant material required to be indicated as "20g or 10,000 seeds)
4.2.3	to be deleted
4.2.4	to read "For the assessment of uniformity of hybrid varieties, a population standard of 1% and an acceptance probability of at least 95% should be applied. In the case of a sample size of 60 plants, 2 off-types are allowed."
Table of Chars.	to check whether to add underlining if characteristic names ("Only varieties..."; see TGP/7, GN 18)
Char. 2	to add example variety "Blanc globe à collet violet" for state 9
Char. 10	to have states from "absent to very weak" to "very strong"
Char. 16	to add example varieties
Char. 20	to replace "ground" with "soil" (see Chars. 18, 19)
Char. 21	- to check whether to add explanation - to add example variety for state 1
Char. 23	to check whether really QL
Char. 24	to review order of states (see Ad. 24 and TGP/14)
Char. 26	- wording in brackets to become Ad. 26 - to be moved after Char. 27
Char. 29	to check whether "top" is correct wording
Char. 30	to check whether to use "base" or "apex"
Char. 31	growth stage to be indicated as 260
Char. 32	- growth stage to be indicated as 310 - to add example variety for state 9
Char. 33	to check whether applies to all types of varieties
Char. 34	- to check whether to be indicated as QL or add third state if PQ - to remove hyphens in color names - to check whether applies to all types of varieties
8.1 (a)	to be improved/clarified
8.1 (d)	to check position of top and base indications (see Chars. 29, 30; could influence the assessment)
Ad. 3	to add names of states
Ad. 7	to check whether to be improved
Ad. 32	to add illustrations

Watercress

93. The subgroup discussed document TG/NASTU(proj.1), presented by Mr. Tom Christie (United Kingdom), and agreed the following:

General	to check whether to use axillary branches or primary lateral shoots (throughout TG)
2.3	material to be supplied for vegetatively-propagated varieties to be reduced to 40 plants
3.4	to add explanation on the cultivation of the trials
4.2.4	- last sentence to read "In the case of a sample size of 30 plants, 1 off-type is allowed." to check number of off-types allowed (1 or more?)
5.3	to add explanation on different types
Table of Chars.	- to add example varieties - to check whether all observations can be made at stage (d) for leaf characteristics
Char. 4	- to check method of observation - to add explanation
Char. 6	- to check whether to read "thickness" or "width"

	- to add explanation
Char. 10	to add illustrations
Char. 12	to add illustrations (see TGP/14)
Char. 15	to read "Leaf: intensity of anthocyanin coloration"
Char. 16	to be deleted
Char. 21	- to check states of expression - to add explanation
Char. 22	- to check states of expression - to add explanation
Char. 23	to delete "or tendril"
Char. 24	to be deleted
Char. 26	to be clarified/improved
Char. 27	to add explanation
Char. 28	to add explanation
Chars. 29, 30	to add explanation on "Siliqua" to 8.1
Char. 31	to be deleted
Char. 32	to be checked/clarified
8.1 (b)	to read "Observations should be made on fully developed, fresh flowers.
8.1 (c)	to read "Observations should be made on fully developed siliquas at early stages of senescence."
Ad. 2	to improve photos or use drawings
Ad. 3	to improve photos or delete them and only keep explanation
Ad. 5	to read "Observations should be made in the middle third of the stem"
Ad. 9	to add photo for state 5
Ad. 13-18	to be moved to 8.1
Ad. 20	to add illustrations in grid
Ad. 24	to be deleted
Ad. 26	to be reviewed
Ad. 32	to improve photos
TQ 5.3	to add all states to have full scale
TQ 6	to be completed

Witloof Chicory (Cichorium intybus L. partim) (Revision)

94. The subgroup discussed document TG/173/4(proj.4), presented by Ms. Stéphanie Christien (France), and agreed the following:

Cover page	Spanish alternative name to read "Endivia"
3.4.3	to check whether to be moved to 8.1 (c)
3.5	to check whether to add information/explanation on bolting trials
Char. 1	to be deleted
Char. 2	to add "broad elliptic" as state 2
Chars. 3, 5, 6	to be indicated as VG/MS
Char. 7	- to be indicated as VG/MS - to add illustration
Char. 8	- to add example variety "Redoria" for state 3 - to update example varieties (to be consistent with Char. 9)
Char. 9	to update example varieties (to be consistent with Char. 8)
Char. 11	to add explanation
Char. 15	to add illustrations
Char. 16	to add illustrations
Char. 17	to add explanation
Char. 19	to update example varieties (to be consistent with Char. 20)
Char. 20	to update example varieties (to be consistent with Char. 19)
Char. 24	state 3 to read "weak", state 7 to read "strong"
Char. 32	- to move "(excluding midrib)" to Ad. 32 - to add illustration (table with Char. 32 and 33- see Lettuce TG, illustrating the full range of expression)
Char. 33	- to move "(excluding midrib)" to Ad. 33

	- to add illustration (table with Char. 32 and 33- see Lettuce TG, illustrating the full range of expression)
Char. 34	to check whether to reduce the scale and adjust example varieties if needed
Char. 35	- to add illustration - to have states from “closed” to “fully open”
Char. 36	to read “Head: length of axis”
8.1 (a) (c) (d)	to read “...should be made...”
8.1 (e)	- to review wording: “At the end of the growing season, roots are harvested and the leaves are cut at about 3 cm from the attachment to the root. The roots are stored at a temperature which depends on the length of the storage and with a humidity of about 95%, before transplanting to a container in mid-January (the normal forcing period; i.e. in North of France-Belgium-Netherlands-Luxembourg = January-February) in 2 repetitions of 50 roots. The forcing may be performed by hydroculture or in soil. In order not to hide the phenotype of the varieties, the application of calcium chloride should be avoided. The containers are placed in an completely dark forcing room in controlled conditions (temperature, hygrometry, fertilization). The air temperature should be about 17°C and the water temperature of 18-19°C. The water and air temperature must be controlled to allow the complete and normal development of the head. Literature may be consulted (Willocx)” - to clarify which literature to refer to (to update chapter 9 if needed)
Ad. 1	to be deleted
Ad. 19	to read “The bolting tendency indicates the susceptibility or resistance to bolting by varieties exposed to an early sowing and the same cold temperature in order to start bolting.”
Ad. 23	to read “...should be made”
Ad. 24	to replace photos with drawings (for all three states)
Ad. 30	grid not necessary (if one scale only- not bi-dimesional)
Ad. 36	- to clarify what is “normal” and “average”- already explained in 8.1 (e) - to check whether to read “At the end of the forcing period (see (e)), the length of axis is measured/ observed disregarding the length of the head (see Characteristic 28)”
TQ 5	to have full scales
TQ 6	to be completed

Matters to be resolved concerning Test Guidelines adopted by the Technical Committee

95. The TWV considered document TWV/50/24 and agreed with the proposed new explanation for Char. 12.

Recommendations on draft Test Guidelines

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

96. The TWV agreed that the following draft Test Guidelines should be submitted to the TC for adoption at its fifty-third session, to be held in Geneva from April 3 to 5, 2017, on the basis of the following documents and the comments in this report:

Subject	Basic Document (2016)
Agaricus (<i>Agaricus bisporus</i> L.) (Revision)	TG/259/2(proj.2)
*Leaf Chicory (<i>Cichorium intybus</i> L. var. <i>foliosum</i> Hegi) (Revision)	TG/154/4(proj.4)
*Lettuce (<i>Lactuca sativa</i> L.) (Revision)	TG/13/11(proj.3)
Tomato (Partial Revision: characteristic 57 “Resistance to Tomato yellow leaf curl virus (TYLCV))	TG/44/11 Rev., TWV/50/20)
Tomato Rootstocks (Partial revision: coverage of Test Guidelines, Characteristic 16)	TG/294/1 Corr., TWV/50/19
*Witloof Chicory (<i>Cichorium intybus</i> L. partim) (Revision)	TG/173/4(proj.4)

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

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

Subject
Artichoke, Cardoon (<i>Cynara cardunculus</i> L.) (Partial revision: addition of new characteristic for male sterility)
*Brown Mustard (<i>Brassica juncea</i> (L.) Czern.)
*Calabrese, Sprouting Broccoli (<i>Brassica oleracea</i> L. convar. <i>botrytis</i> (L.) Alef. var. <i>cymosa</i> Duch.) (Revision)
Cucurbita moschata (<i>Cucurbita moschata</i> Duch.) (Partial revision: explanations covering several characteristics, Characteristics 14-27)
Pea (<i>Pisum sativum</i> L.) (Partial revision: disease resistance explanations for <i>Fusarium oxysporum</i> f. sp. <i>pisi</i> race 1 (Ad. 51), <i>Ascochyta pisi</i> race C (Ad. 60))
*Pepino (<i>Solanum muricatum</i>)
Pepper (<i>Capsicum annuum</i> L.) (Partial revision: characteristics 48.1, 48.2, 48.3, 49.1)
Spinach (<i>Spinacia oleracea</i> L.) (Partial revision: Characteristic 18)
Vegetable Marrow, Squash (<i>Cucurbita pepo</i> L.) (Partial revision: characteristics 69 and 70)
Swiss Chard, Leaf Beet (<i>Beta vulgaris</i> L. var. <i>cicla</i> L. (Ulrich)) (Revision)
Tomato (<i>Solanum lycopersicum</i> L.) (Partial revision: disease resistance characteristics and explanations: Chars. and Ads. 48, 51, 58)
Tomato rootstock (Partial revision: disease resistance characteristics and explanations: Chars. and Ads. 24, 27, 30, 31)
Turnip (<i>Brassica rapa</i> L. var. <i>rapa</i> L.) (Revision)
Watercress (<i>Nasturtium microphyllum</i> Boenn. ex Rchb.; <i>Nasturtium officinale</i> R. Br.; <i>Nasturtium xsterile</i> (Airy Shaw) Oefelein)

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

(c) *Participation in discussions of Test Guidelines from other TWPs*

99. The TWV 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 Agricultural Crops (TWA), subject to the deadlines in the report of the forty-fifth session of the TWA to be held in Mexico City, Mexico, from July 11 to 15, 2016.

Subject	Interested experts (countries/organizations) ¹
Field Bean (<i>Vicia faba</i> L. var. <i>minor</i> Harz) (Revision)	CZ, ES, FR, GB, IT, NL, QZ, CropLife, ESA, ISF

Guidance for drafters of Test Guidelines

100. The TWV considered document TWV/50/17 and received a presentation by the Office on the features and use of the web-based TG Template.

¹ for name of experts, see list of participants

101. The TWV agreed that the link to the web-based TG Template on the UPOV website should be made more accessible, therefore should appear under “Quick links - Test Guidelines” and under “Meeting documents”.

Information and databases

UPOV information databases

102. The TWV considered document TWV/50/5 and the information provided on the items below.

UPOV Code System

103. The TWV noted that the TC, at its fifty-second session, had agreed to invite the European Union to make a proposal to the TWPs, at their sessions in 2016, for a revision of the Guide to the UPOV Code System with regard to UPOV codes for hybrid genera and species;

104. The TWV noted that European Union proposal “Proposal to the ‘Guide to the UPOV Code System’ on the principal botanical name for inter-generic and interspecific hybrids” from the Community Plant Variety Office of the European Union (CPVO) was presented in document TWV/50/18.

105. The TWV noted the developments concerning UPOV codes, as set out in paragraph 8 of document TWV/50/5.

106. The TWV checked the amendments to UPOV codes, which are provided in Annex III part A, to document TWV/50/5.

107. The TWV agreed to check the new UPOV codes or new information added for existing UPOV codes, which are provided in Annex III, part B, to document TWV/50/5.

108. The TWV agreed to check the UPOV codes used in the PLUTO database for the first time, which are provided in Annex III, part C, to document TWV/50/5.

109. The TWV agreed to submit comments on Annex III, 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 October 7, 2016.

PLUTO database

110. The TWV noted the summary of contributions to the PLUTO database from 2012 to 2015 and the current situation of members of the Union on data contribution, as presented in the Annex II to document TWV/50/5.

111. The TWV noted that the CAJ, at its seventy-second session, had agreed, that the WG-DEN should consider proposals for the expansion of the content of the PLUTO database to include all recognized varieties, including those that had not been, or were no longer, registered/protected;

112. The TWV noted that the WG-DEN, at its first meeting, had agreed to defer the consideration of the matters concerning the possible expansion of the content of the PLUTO database to include all recognized varieties, including those that have not been, or were no longer, registered/protected until its second, or a subsequent, meeting; and

113. The TWV noted the information concerning the training courses “Contributing data to the PLUTO database”, held in Geneva in September and October 2015, as set out in paragraphs 22 to 24 of document TWV/50/5.

Variety description databases

114. The TWV considered document TWV/50/6 and noted the developments reported in this document and, in particular, that:

(a) the TC, at its fifty-second session, had agreed to invite members of the Union to make presentations at the next session of the BMT on how databases containing molecular data might be developed in UPOV; and

(b) the outcome of discussions during the BMT on how databases containing molecular data might be developed in UPOV would be reported to the TC at its fifty-third session.

115. The TWV received a presentation on “Facilitating development of databases for DUS examination” by an expert from France. A copy of the presentation is provided in document TWV/50/6 Add. Rev..

116. The TWV considered the idea on how to develop databases and expressed interest in sharing data between UPOV members within the same geographical region, however expressed some concerns about the efforts needed (e.g. time and cost) for the result expected. Therefore the TWV requested to have more experiences reported at its fifty-first session. The expert from Germany offered to report on the potato database currently under development within European Union, as a CPVO project by 9 Examination Offices.

Exchange and use of software and equipment

117. The TWV considered document TWV/50/7.

Document UPOV/INF/16 “Exchangeable Software”

118. The TWV noted that the Council, at its forty-ninth ordinary session, held in Geneva, on October 29, 2015, had adopted document UPOV/INF/16/5 “Exchangeable Software”.

119. The TWV noted that the TC, at its fifty-second session, had agreed to propose the revision of document UPOV/INF/16/5 to include information on the use of software by members of the Union, and it would be reported to the CAJ at its seventy-third session, and if agreed by the CAJ, a draft of document UPOV/INF/16/6 “Exchangeable Software” would be presented for adoption by the Council at its fiftieth ordinary session.

Document UPOV/INF/22 “Software and Equipment Used by Members of the Union”

120. The TWV noted that the Council, at its forty-ninth ordinary session, held in Geneva, on October 29, 2015, had adopted document UPOV/INF/22/2 “Software and equipment used by members of the Union”.

121. The TWV noted that the TC, at its fifty-second session, had agreed to propose the revision of document UPOV/INF/22/2 to include information on the use of software by members of the Union, and if agreed by the CAJ, a draft of document UPOV/INF/22/3 will be presented for adoption by the Council at its fiftieth ordinary session.

Electronic application systems

122. The TWV considered document TWV/50/8 and noted developments concerning the development of a prototype electronic form presented in this document.

123. The TWV received a presentation on the “Electronic Application Form Project - Report to Technical Working Parties” by the Office of the Union. A copy of the presentation is provided in document TWV/50/8 Add..

Date and place of the next session

124. The TWV noted the expression of interest to host the fifty-first session of the TWV in Trinidad and Tobago, from July 3 to 7, 2017, with the preparatory workshop on July 2, 2017, subject to approval by the Ministry.

125. The TWV noted that another option will be, at the invitation of the Netherlands, to host the fifty-first session of the TWV, from July 3 to 7, 2017, with the preparatory workshop on July 2, 2017.

126. The venue for the fifty-first session of the TWV will be announced to the TWV, by means of a Circular, at latest by July 30, 2016.

Chairperson

127. The TWV agreed to propose to the TC that it recommend to the Council to elect Ms. Romana Bravi (Italy), as the next chairperson of the TWV.

Future program

128. The TWV proposed to discuss the following items at its next session:

1. Opening of the Session
2. Adoption of the agenda
3. Short reports on developments in plant variety protection
 - (a) Reports from members and observers
 - (b) Reports on developments within UPOV (oral report by the Office of the Union)
4. Molecular Techniques
 - (a) Developments in UPOV (document to be prepared by the Office of the Union)
 - (b) Presentation on the use of molecular techniques in DUS examination (presentations invited from members of the Union)
5. TGP documents
6. Variety denominations (document to be prepared by the Office of the Union)
7. Information and databases
 - (a) UPOV information databases (document to be prepared by the Office of the Union)
 - (b) Variety description databases (document to be prepared by the Office of the Union and documents invited)
 - (c) Exchange and use of software and equipment (document to be prepared by the Office of the Union)
 - (d) Electronic application systems (document to be prepared by the Office of the Union)
8. Experiences with new types and species (oral reports invited)
9. New issues arising for DUS examination (presentations invited from members of the Union)
10. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee (if appropriate)
11. Discussions on draft Test Guidelines (Subgroups)
12. Recommendations on draft Test Guidelines
13. Guidance for drafters of Test Guidelines
14. Date and place of the next session
15. Future program
16. Report on the session (if time permits)
17. Closing of the session

Visit

129. On the afternoon of June 29, 2016, the TWV visited the ÚKZÚZ testing station in Chrlice, one of the 15 ÚKZÚZ testing stations, which mainly performs DUS and VCU testing of field crops and vegetables. The TWV was welcomed by Mr. Tomáš Jan, Head of the ÚKZÚZ testing station. The TWV visited several DUS trials including cauliflower, Gherkin /Cucumber, Tomato, Garlic, Onion, pea, Pepper and Lucerne. The TWV also visited the vegetable breeding company SEMO in Smržice, where it was welcomed by Mr. Jan Prášil, Director of SEMO, Mr. Vladislav Janeček, Manager Vegetable Market, and Mr. Jan Zavadil, Pepper and Lettuce Breeder. At the SEMO premises, the TWV visited breeding trials for various vegetable species.

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

[Annex I follows]

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III. OFFICER



Swenja TAMS (Ms.), Chair

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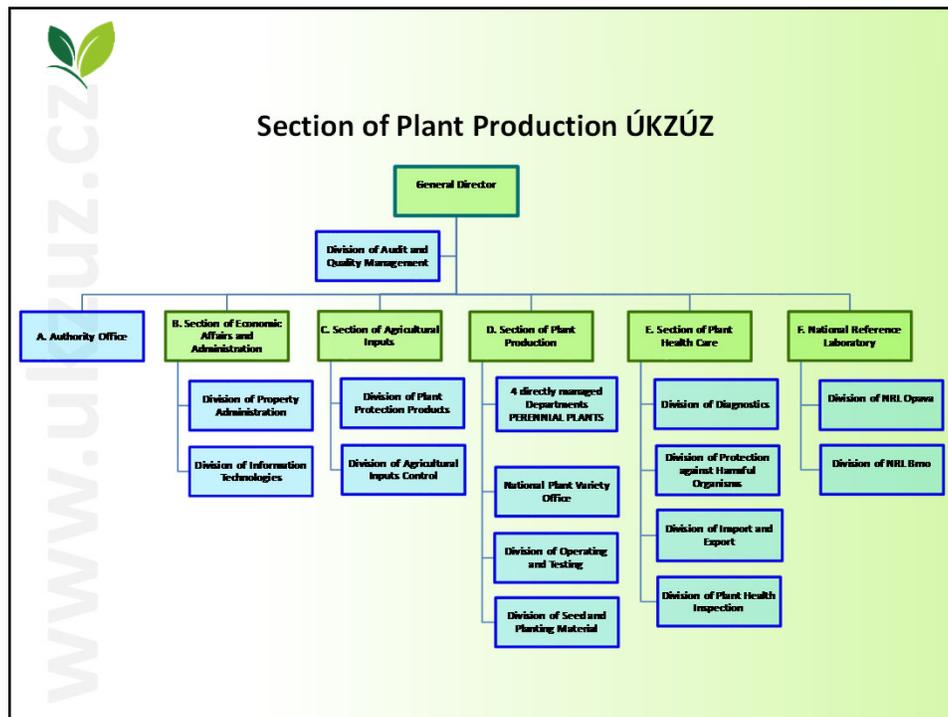
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[Annex II follows]

PRESENTATION BY MR. JIŘÍ URBAN, DIRECTOR,
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1. Perennial plants

- **Department of Perennial Plants – Brno**
- **Department of Hop – Žatec**
- **Department of Viticulture – Znojmo - Oblekovice**
- **Department of Vineyard Register – Znojmo – Oblekovice**



Department of Perennial Plants (Brno)

- Certification of propagating material of hop, vine, fruit
 - Inspection of production of propagating material of fruit genera and species.
 - Keeping the Register of agricultural entrepreneurs in the area of fruit-growing, keeping the Register of orchards and estimation of fruit harvest. -
 - Integration of land parcels of orchards into the LPIS system.



Department of Viticulture (Znojmo)

- Varietal testing of vine, supporting documentation for registration of varieties and post-registration inspection.
 - Keeping a reference collection of vine varieties and extending it.
 - Testing varietal purity of vine clones.
 - Sampling and processing of fresh grapes into wine for the European data-bank on isotopic wine values and storage.
 - Keeping Institute's vineyards and wine cellar.



Department of Vineyard Register (Znojmo)

- Keeping the Vineyard Register and inspection of vineyards – including connection to LPIS.
- Granting rights for re-planting of vineyards.
- Keeping records of wine producers, harvest of grapes, grapes and wine merchants, production and stocks of wine and must, and premises.
- Keeping records of different vineyard estates. – Keeping records of entities producing wines of original certification (VOC) and classification of wine.



Department of Hop (Žatec)

- Keeping the Register of hop-fields and agricultural entrepreneurs in the area of hop production.
- Inspection of registered hop-fields, inspection of hop labelling at the growers. – Certification of hop and hop products, issuing certificates.



2. National Plant Variety Office (NOU)

- **Registration of varieties, DUS tests**
- **Recommendations of varieties, VCU tests**
- **Protection of plant variety rights**

3. Division of Operating and Testing (OPZ)

Close connection between NOU and testing stations, which focus primarily on variety testing - OPZ



Strategy for acquiring land for ÚKZÚZ testing stations

- Only 54% of land used by ÚKZÚZ testing stations is also owned by ÚKZÚZ
- At 16 testing stations we use an area of 794 ha and we have rented from private persons 366 ha (at some stations this represents 100% of the area of the testing station).
- Average size of a testing station is 50 ha.
- Fight for agricultural land in the CR (EU subsidies) = problem for ÚKZÚZ (prices of arable land 100 – 250.000 CZK/ha)
rent - 2000 – 4000 CZK/ha/year
- reason for adoption of „Strategy“, supported by the Ministry



4. Division of Seed and Planting Material (Prague)

- **certification procedure for seed and planting material,**
- laboratory testing of seed within certification procedure and inspection,
- international certification according to OECD and ISTA,
- **authorisation and keeping records of imported seed and planting material,**
- **authorisation of placing on the market seed of not yet officially listed varieties,**
- **granting exceptions for use of conventional seed in organic agriculture,**
- **keeping the Database of Seed suitable for organic agriculture,**
- **control of seed and propagating material placed on the market,**
- **registration and keeping records of subjects placing seeds and planting material on the market.**



Thank you for your
attention
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PRESENTATION BY MR. TOMÁŠ MEZLÍK,
DIRECTOR OF THE NATIONAL PLANT VARIETY OFFICE, ÚKZÚZ



Presentation of National Plant Variety Office

UPOV TWV,
Brno, 27.6.2016

Tomáš Mezlík



Contents

- Agriculture in the Czech Republic
- History of variety testing
- Mission of National Plant Variety Office



Agriculture in the Czech Republic - some facts

- 53% of area of the Czech Republic is agriculture land (4.216 mil. ha, of which 2.978 mil. ha is arable land)
- 1/2 of agriculture land is in LFA
- 1/3 of area of country is covered by forests
- 0,42 ha agriculture land per citizen
- 92% of agriculture land is controlled by companies with more than 50 ha, 152 ha average area per farm
- Ownership of land is fragmented to many owners, 74% of land is leased
- 2,9 % of all employees work for agriculture sector



Crop harvest in 2015

Crop	Area (ha)	Yield (t/ha)	Harvest (t)
Grain crops, total	1 422 967	6,82	8 279 419
Cereals, total	1 389 627	5,89	8 183 512
Winter wheat	778 200	6,50	5 054 568
Barley, total	365 940	5,44	1 991 415
Grain maize	79 973	5,54	442 709
Pulses, total	33 129	2,89	95 908
Field peas	23 876	3,27	78 161
Root crops, total	80 860	x	3 842 094
Potatoes, total	22 681	22,26	504 955
Sugar beet	57 612	59,36	3 421 035
Oil seed crops, total	446 022	3,04	1 365 901
Rape	366 180	3,43	1 256 212
Annual green fodder crops, total	294 496	27,42	8 076 803
Green and silage maize	244 956	29,13	7 134 351
Perennial green fodder crops, total	177 373	6,16	1 092 994
Fresh vegetables, total	9 162	4	153 800
Celery	294	25,87	7 598
Carrots	721	32,53	23 449
Parsley	247	15,36	3 788
Kohlrabi	173	18,66	3 235
Radishes	204	11,01	2 266
Savoy cabbage	107	19,29	1 951
Cauliflower and broccoli	303	12,22	3 704
Cabbages	1 130	36,82	41 599
Cherkins	339	41,45	14 035
Cucumbers	34	104,22	3 584
Tomatoes	196	29,32	5 749
Onions	1 681	17,21	27 212
Garlic	236	3,36	795
Green peas	923	4,52	4 174
Leeks	6	16,96	97
Lettuces	142	35,47	5 036
Other vegetables	2 656	13,86	35 431
Strawberries	583	5,59	3 260
Hop gardens in production	4 622	1,05	4 843
Vineyards in production	15 808	5,73	90 606
Permanent grassland in hay	938 471	3,16	2 943 352

VÝVOJ PLOCH ZEMĚDĚLSKÝCH PLOCH
TRENDS IN SOWING AREAS

VÝVOJ PLOCH ZEMĚDĚLSKÝCH PLOCH
TRENDS IN SOWING AREAS

History

...now




Variety trials yesterday and ...

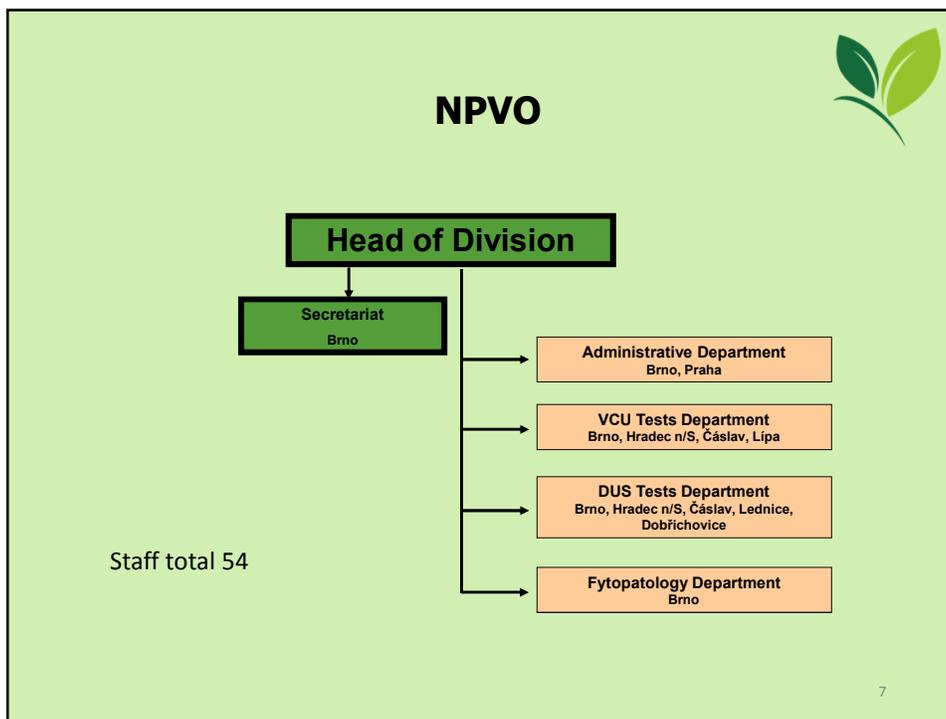


1856 - first agriculture testing station in Moravia (manor house of Hugo Salm in Rajec)
1890 - breeding of barley started in Moravia
1899 - Moravian Provincial Agriculture Experimental Station for Plant Cultivation (Brno)
1909 - Moravian Provincial Experimental Agrucultural Institute
1919 - Provincial Experimental Institute for Plant Production
1951 - Central Institute for Supervising and Testing in Agriculture (ÚKZÚZ)



Mission of National Plant Variety Office NPVO

- National Listing of the plant varieties
- Plant Variety Rights Protection
- Recommendation of Plant Varieties
- Information on varieties for farmers



National Listing

- Legal requirement for certification and marketing of seed and plant material of varieties
- in accordance with Act No. 219/2003 Coll., on the marketing of seed and planting material of cultivated plants and later amendments to the Act
- NPVO takes all decisions on National Listing

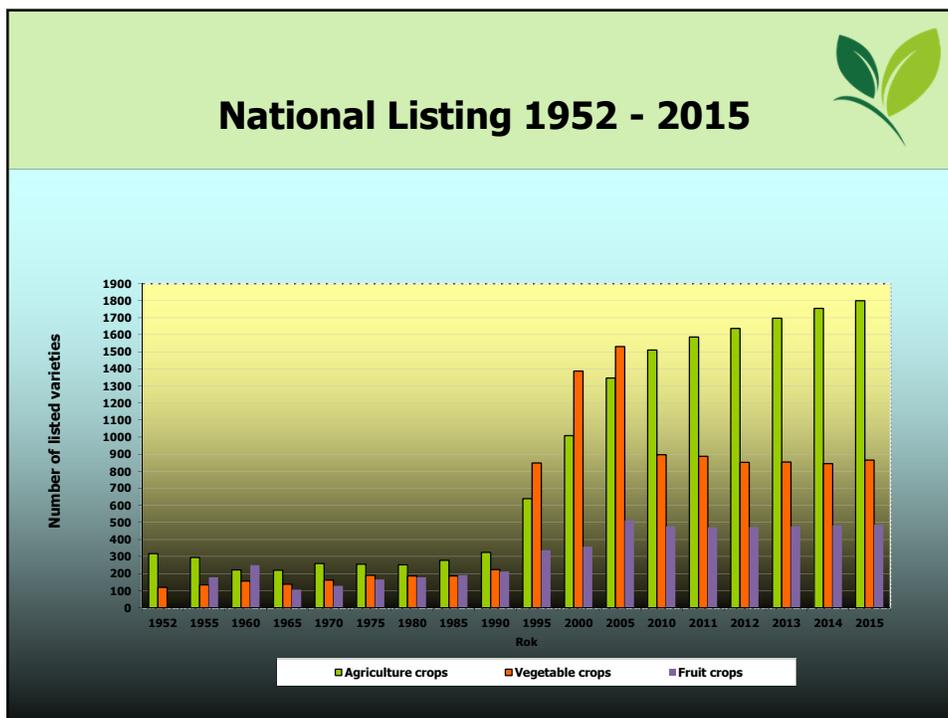
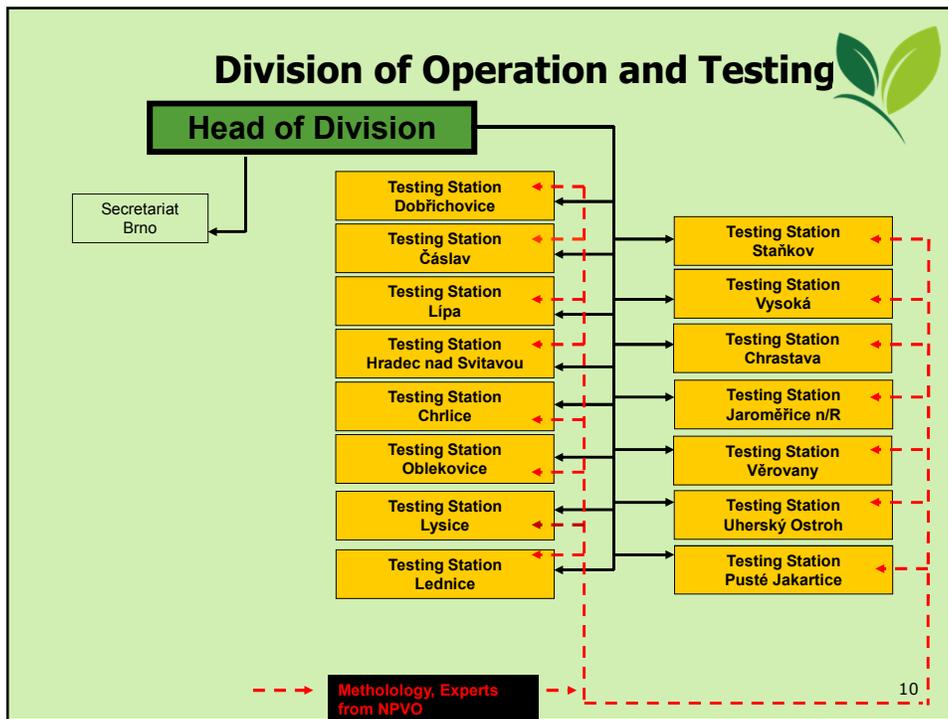
Preconditions

- Agricultural crop, vine, hop:
 - Distinctness, Uniformity, Stability, Value for Cultivation and Use
- Vegetable, fruit species:
 - Distinctness, Uniformity, Stability

DUS and VCU tests are organized by NPVO

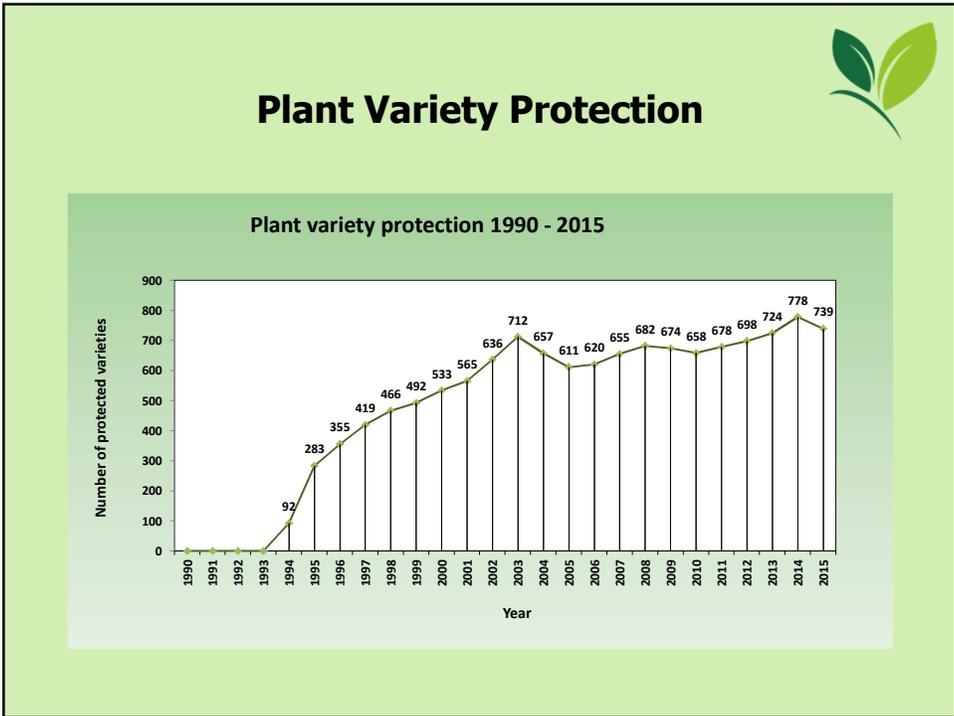
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Applications	467	514	536	613	482	530	529	491	538	620	499
Agriculture crops	429	444	478	561	414	500	481	468	494	561	474
Vegetable crops	32	65	54	51	55	30	33	18	33	49	18
Fruit crops	4	5	4	1	12	-	15	4	11	10	7
Ornamental plants	-	-	-	-	1	-	-	1	-	-	-
Aromatical plants	2	-	-	-	-	-	-	-	-	-	-
Withdrawals	393	210	384	385	350	415	301	282	306	487	299
Rejections	15	5	7	1	4	1	4	4	5	5	1
Listing	222	138	218	225	175	200	210	164	160	175	194
Agriculture crops	131	94	161	151	138	141	156	120	127	140	131
Vegetable crops	51	20	38	63	32	48	50	39	33	30	38
Fruit crops	40	23	19	10	5	10	4	5	-	5	24
Ornamental plants	-	1	-	-	-	1	-	-	-	-	1
Aromatical plants	-	-	-	1	-	-	-	-	-	-	-
Cancelation	194	122	54	56	55	23	49	36	30	34	51
Termination	-	33	1438	137	168	113	102	127	107	87	89

Total listed varieties		3181
- Agriculture crops		1800
- Vegetable crops		864
- Fruit crops		487
- Ornamental plants		3
- Aromatical plants		27



Plant Variety Protection

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Applications	52	50	91	68	104	59	92	55	70	99	63
Agriculture crops	32	34	44	38	54	42	58	30	41	72	33
Vegetable crops	1	1	3	1	3	2	7	-	1	-	3
Fruit crops	4	5	29	7	15	1	14	5	17	7	5
Ornamental plants	15	10	14	22	31	13	11	19	10	19	22
Aromatical plants	-	-	1	-	1	1	2	1	1	1	-
Withdrawals	48	61	21	61	10	10	8	6	1	14	12
Rejections	-	2	-	-	-	-	-	-	-	-	-
Granting	56	62	46	59	51	63	73	59	58	93	61
Agriculture crops	41	33	27	39	36	41	32	36	40	65	34
Vegetable crops	1	1	1	4	-	2	5	2	-	5	1
Fruit crops	9	15	7	1	1	2	12	7	6	11	9
Ornamental plants	5	13	11	14	14	17	23	13	12	10	16
Aromatical plants	-	-	-	-	-	1	1	1	-	2	1
Cancellation	100	47	13	33	55	39	33	32	29	32	70
Termination	-	-	-	-	-	47	13	14	16	10	18
Total grants	31.12.2015		739								
- Agriculture crops			489								
- Vegetable crops			28								
- Fruit crops			126								
- Ornamental plants			88								
- Aromatical plants			8								



Information on varieties for farmers and other users



Results of Testing of Plant Varieties

- Recommended list of varieties (annually)
- Descriptive list of varieties (annually)
- Annual results of VCU trials

Records on Plant Varieties listed in the Czech Republic

- National list (annually)
- List of Protected Plant Varieties (annually)
- Czech Gazette for Plant Breeders' Rights and National List of Plant Varieties (6 times a year)
- Plant Variety Rights & National List Database (on-line)



Web site www.ukzuz.cz

The Czech Republic and UPOV



- Member of the UPOV since January 1, 1993, continues the 1991 accession of former Czechoslovakia ratified the UPOV Act of 1978
- On October 24, 2002, the Czech Republic deposited with the Office of the Union its instrument of accession to the 1991 Act of the UPOV Convention, which entered into force for the Czech Republic on November 24, 2002.
- UKZUZ hosted several UPOV technical working parties:
 - Technical Working Party for Vegetables, July 8 to July 12, 1996 - Brno
 - Technical Working Party for Ornamental Plants & Forest Trees, September 13 to September 18, 1999 - Pruhonice
 - Technical Working Party on Automation & Computer Programs , June 4 to June 7, 2001 - Prague
- Regular participations at TC, CAJ, C and TWV, TWA (TWC), since 2016 BMT
- Ms Safarikova – chaired TWV from 2009 to 2011.
- Active co-operation with UPOV member (DUS testing, take-over reports)

Thank you for your attention!



ÚKZÚZ
National Plant Variety Office
Hroznová 2
656 06 Brno
Czech Republic

www.ukzuz.cz



[Annex IV follows]

LIST OF LEADING EXPERTS

**DRAFT TEST GUIDELINES TO BE SUBMITTED
TO THE TECHNICAL COMMITTEE IN 2017**

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

before August 12, 2016

Species	Basic Document	Leading Expert(s)
Agaricus (<i>Agaricus bisporus</i> L.) (Revision)	TG/259/2(proj.2)	Mr. Sergio Semon (QZ)
*Leaf Chicory (<i>Cichorium intybus</i> L. var. <i>foliosum</i> Hegi) (Revision)	TG/154/4(proj.4)	Ms. Romana Bravi (IT)
*Lettuce (<i>Lactuca sativa</i> L.) (Revision)	TG/13/11(proj.3)	Ms. Amanda van Dijk (NL)
Tomato (Partial Revision: characteristic 57 "Resistance to Tomato yellow leaf curl virus (TYLCV))	TG/44/11 Rev., TWV/50/20)	Mr. Sergio Semon (QZ)
Tomato Rootstocks (Partial revision: coverage of Test Guidelines, Characteristic 16)	TG/294/1 Corr., TWV/50/19	Mr. David Calvache (Spain)
*Witloof Chicory (<i>Cichorium intybus</i> L. partim) (Revision)	TG/173/4(proj.4)	Ms. Stéphanie Christien (FR)

DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWV/51
(* indicates possible final draft Test Guidelines)

**(Guideline date for Subgroup draft to be circulated by Leading Expert: March 24, 2017
Guideline date for comments to Leading Expert by Subgroup: April 21, 2017)**

New draft to be submitted to the Office of the Union
by May 19, 2017

Species	Basic Document	Leading Expert(s)	Interested Experts (State / Organization) ²
Artichoke, Cardoon (<i>Cynara cardunculus</i> L.) (Partial revision: addition of new characteristic for male sterility)	TG/184/4	Mr. David Calvache (ES)	FR, IT, JP, NL, QZ, CropLife, ESA, ISF, Office
*Brown Mustard (<i>Brassica juncea</i> (L.) Czern.)	TG/BRASS_JUN (proj.4)	Mr. Takayuki Nishikawa (JP)	TWA, CA, CZ, DE, FR, KR, NL, PL, QZ, ZA, CropLife, ESA, ISF, Office
*Calabrese, Sprouting Broccoli (<i>Brassica oleracea</i> L. convar. <i>botrytis</i> (L.) Alef. var. <i>cymosa</i> Duch.) (Revision)	TG/151/5(proj.1)	Ms. Marian van Leeuwen (NL)	CZ, ES, FR, GB, IT, JP, PL, QZ, RO, CropLife, ESA, ISF, Office
Cucurbita moschata (<i>Cucurbita moschata</i> Duch.) (Partial revision: explanations covering several characteristics, Characteristics 14-27)	TG/234/1	Ms. Chrystelle Jouy (FR)	NL, JP, IT, HU, QZ, KR, ES, CropLife, ESA, ISF, Office
Pea (<i>Pisum sativum</i> L.) (Partial revision: disease resistance explanations for <i>Fusarium oxysporum</i> f. sp. <i>pisi</i> race 1 (Ad. 51), <i>Ascochyta pisi</i> race C (Ad. 60))	TG/7/10 Rev.	Mr. Sergio Semon (QZ)	CZ, DE, ES, FR, GB, HU, IT, JP, NL, CropLife, ESA, ISF, Office
*Pepino (<i>Solanum muricatum</i>)	TG/PEPIN(proj.2)	Mr. Jun Araseki (JP)	FR, NL, NZ, CropLife, ESA, ISF, Office
Pepper (<i>Capsicum annuum</i> L.) (Partial revision: characteristics 48.1, 48.2, 48.3, 49.1)	TG/76/8 Rev.	Mr. Sergio Semon (QZ)	ES, FR, NL, HU, IT, JP, KR, CropLife, ESA, ISF, Office
Spinach (<i>Spinacia oleracea</i> L.) (Partial revision: Characteristic 18)	TG/55/7 Rev.4	Ms. Marian van Leeuwen (NL)	CZ, DE FR, JP, QZ, CropLife, ESA, ISF, Office
Vegetable Marrow, Squash (<i>Cucurbita pepo</i> L.) (Partial revision: characteristics 69 and 70)	TG/119/4 Corr.	Ms. Chrystelle Jouy (FR)	CZ, ES, HU, IT, JP, KR, NL, QZ, SK, CropLife, ESA, ISF, Office
Swiss Chard, Leaf Beet (<i>Beta vulgaris</i> L. var. <i>cicla</i> L. (Ulrich)) (Revision)	TG/106/4	Ms. Chrystelle Jouy (FR)	CZ, DE, ES, GB, JP, NL, QZ, CropLife, ESA, ISF, Office
Tomato (<i>Solanum lycopersicum</i> L.) (Partial revision: disease resistance characteristics and explanations: Chars. and Ads. 48, 51, 58)	TG/44/11 Rev.	Ms. Amanda van Dijk (NL)	CZ, ES, FR, HU, IT, JP, KR, QZ, SK, TK, CropLife, ESA, ISF, Office
Tomato rootstock (Partial revision: disease resistance characteristics and explanations: Chars. and Ads. 24, 27, 30, 31)	TG/294/1 Corr. Rev.	Ms. Amanda van Dijk (NL)	ES, FR, HU, IT, JP, QZ, CropLife, ESA, ISF, Office

² for name of experts, see list of participants

Species	Basic Document	Leading Expert(s)	Interested Experts (State / Organization) ²
Turnip (<i>Brassica rapa</i> L. var. <i>rapa</i> L.) (Revision)	TG/37/11(proj.2)	Ms. Stéphanie Christien (FR)	TWA, CA, CZ, DE, ES, GB, IT, JP, KR, NL,PL, QZ, ZA, CropLife, ESA, ISF, Office
Watercress (<i>Nasturtium microphyllum</i> Boenn. ex Rchb.; <i>Nasturtium officinale</i> R. Br.; <i>Nasturtium xsterile</i> (Airy Shaw) Oefelein)	TG/NASTU(proj.1)	Mr. Tom Christie (GB)	FR, JP, NL, QZ, US, ESA, ISF, Office

[End of Annex IV and of Report]