



TWV/48/43

ORIGINAL: English

DATE: June 27, 2014

INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

TECHNICAL WORKING PARTY FOR VEGETABLES

Forty-Eighth Session Paestum, Italy, June 23 to 27, 2014

REPORT

adopted by the Technical Working Party for Vegetables (TWV)

Disclaimer: this document does not represent UPOV policies or guidance

1. The Technical Working Party for Vegetables (TWV) held its forty-eighth session in Paestum, Italy, from June 23 to 27, 2014. The list of participants is reproduced in Annex I to this report.
2. The TWV was welcomed by Mr. Pier Giacomo Bianchi, Head, Agricultural Research Council - Centre for Seed Experimentation and Certification (CRA-SCS) in a video message.
3. The TWV received a presentation on "PBR at glance in Italy" by Mrs. Anna Giulini, Researcher, CRA-SCS, on behalf of Mr. Bianchi. A copy of the presentation is provided in Annex II to this report.
4. The TWV expressed its condolences for the sad loss of Mr. François Boulineau, Chairman of the TWV, who had died on December 23, 2013. It was recalled that, in addition to being Chairman of the TWV, Mr. Boulineau had brought great experience and expert knowledge to UPOV's technical work and was a leading expert for a number of UPOV Test Guidelines.
5. The TWV elected Mr. Kees van Ettehoven (Netherlands) and Mrs. Swenja Tams (Germany) as joint ad hoc Chairpersons for the forty-eighth session of the TWV.
6. The session was opened by Mr. Kees van Ettehoven and Mrs. Swenja Tams who welcomed the participants and thanked Italy for hosting the TWV session.

Adoption of the Agenda

7. The TWV adopted the agenda as presented in document TWV/48/1.

Short Reports on Developments in Plant Variety Protection

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

8. The TWV noted the information on developments in plant variety protection from members and observers provided in document TWV/48/25 Prov. The TWV noted that reports submitted to the Office of the Union after June 19, 2014, would be included in the final version of document TWV/48/25.

(b) *Reports on developments within UPOV*

9. 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/48/24. The TWV noted in particular that the designated contact person to the Technical Committee (TC) had been copied in the circular requesting information for document C/48/5 "Cooperation in examination".

Molecular Techniques

10. The TWV considered document TWV/48/2.

11. The TWV noted the report on developments concerning the use of biochemical and molecular markers in the examination of Distinctness, Uniformity and Stability (DUS).

12. The TWV noted the report on developments concerning the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT).

13. The TWV noted the report by an expert of the European Seed Association (ESA) that ESA planned to make a presentation on the use of molecular techniques in potato at the fourteenth session of the BMT to be held in Seoul, the Republic of Korea, from November 10 to 13, 2014.

14. The TWV noted the report on developments concerning the presentation of information on the situation in UPOV with regard to the use of molecular techniques to a wider audience, including breeders and the public in general.

15. The TWV noted that the expert of ESA was in favor of the approach taken by the TC at its fiftieth session in relation to the frequently asked questions for the use of molecular techniques (DNA profiles) in the DUS examination, as set out in document TWV/48/2, paragraph 15.

16. The TWV received a presentation by an expert from the Netherlands on "DNA in DUS examination for Registration and PBR/PVP", a copy of which is provided in an addendum to document TWV/48/2.

TGP documents

17. The TWV considered the TGP documents below on the basis of documents TWV/48/3 and TWV/48/3 Add.

Matters for adoption by the Council in 2014

18. The TWV noted the revisions to documents TGP/0, TGP/2, TGP/5, TGP/7 and TGP/8 to be put forward for adoption by the Council at its forty-eighth ordinary session, as set out in document TWV/48/3, paragraphs 5 to 21.

Program for the development of TGP documents

19. The TWV noted the program for the development of TGP documents, as set out in document TWV/48/3, Annex II.

Future revision of TGP documents

20. The TWV noted that the proposals for future revisions of TGP documents to be discussed by the Technical Working Parties (TWPs) at their sessions in 2014.

TGP/7: Development of Test Guidelines

(i) *Revision of document TGP/7: Plant Material Submitted for Examination*

21. The TWV considered document TWV/48/12.

22. The TWV considered the example presented by the experts from the Netherlands on their experiences with regard to plant material submitted for examination, particularly the case of vegetatively propagated leek, and the solutions that had been developed to address problems as reproduced in the addendum of document TWV/48/12.

23. The TWV noted the report by the expert from ESA on a current project organized by the Community Plant Variety Office of the European Union (CPVO) on the effect of seed priming on the development of plants and if it would influence the phenotype of the plant in TG characteristics. The TWV invited the European Union to make a report on the development of this project at its forty-ninth session of the TWV.

24. The TWV agreed that measures should be taken to ensure that the method of propagation does not influence the expression and observation of characteristics. It agreed that there was insufficient guidance for vegetable varieties at present, especially when an authority received an application for vegetatively propagated varieties in a seed propagated species. The TWV therefore agreed that further guidance reflecting good practice should be developed.

25. In relation to propagation of plant material for the maintenance of the variety collection, the TWV noted that, in some cases, the authority requested that the applicant submit new material, whilst in other cases the authority propagated the material itself. It recalled that TGP/11 "Examining Stability" states as follows:

"2.2 Practical aspects to consider for the examination of stability"

"Where considered appropriate, the testing of stability should be conducted by either: (i) testing a new seed or plant stock, or (ii) testing a seed or plant stock obtained from propagation of the initial sample. In the case of (i), the examination authority should request the applicant to provide the sample of plant material to be tested for stability. In the case of (ii) the propagation cycle can be undertaken by the examination authority as long as it can ensure the safety and reliability of the propagation procedure; this should nonetheless be an exceptional situation."

26. The TWV agreed that experts from France, Germany, Italy, Netherlands, United Kingdom, Crop Life, ESA and the International Seed Federation (ISF) would help the expert from the European Union to draft guidance for vegetable varieties that reflects good practice to be included in document TGP/7 as well as in document TGP/4 "Constitution and Maintenance of Variety Collections", as appropriate.

(ii) *Revision of document TGP/7: Coverage of the Test Guidelines*

27. The TWV considered document TWV/48/13.

28. The TWV agreed that Approach 3 "Specify existing type of propagation and anticipate future developments" was the most appropriate guidance for Test Guidelines that are developed on the basis of varieties with one type of propagation when varieties may be developed in the future with other types of propagation. The TWV, therefore, agreed that ASW 8 should be amended to read as follows:

"ASW 8 (TG Template: Chapter 4.2) – Uniformity assessment"

(a) *"Cross-pollinated varieties"*

(i) *"Test Guidelines covering only cross-pollinated varieties"*

"The assessment of uniformity should be according to the recommendations for cross-pollinated varieties in the General Introduction."

"These Test Guidelines have been developed for the examination of cross-pollinated varieties. For varieties with other types of propagation the recommendations in the General Introduction and document TGP/13 "Guidance for new types and species", Section 4.5: "Testing Uniformity" should be followed."

[...]

(c) *Uniformity assessment by off-types (all characteristics observed on the same sample size)*

~~(i) *Test Guidelines covering only varieties with uniformity assessed by off-types*~~

~~"For the assessment of uniformity, a population standard of { x }% and an acceptance probability of at least { y }% should be applied. In the case of a sample size of { a } plants, [{ b } off-types are] / [1 off-type is] allowed."~~

(ii) Test Guidelines covering varieties with uniformity assessed by off-types and other types of varieties

“For the assessment of uniformity of [self-pollinated] [vegetatively propagated] [seed-propagated] varieties, a population standard of { x }% and an acceptance probability of at least { y } % should be applied. In the case of a sample size of { a } plants, [{ b } off-types are] / [1 off-type is] allowed.”

“These Test Guidelines have been developed for the examination of [type of propagation] varieties. For varieties with other types of propagation the recommendations in the General Introduction and document TGP/13 “Guidance for new types and species”, Section 4.5: “Testing Uniformity” should be followed.”

29. The TWV agreed that future new drafts or revisions of Test Guidelines would reflect this amendment of document TGP/7.

30. The TWV agreed that the amendment in document TGP/7 and its use in Test Guidelines would cover existing types of propagation and also possible future developments for the species.

31. The TWV noted that the expert from the European Union expressed some reserve about the current wording in relation to uniformity assessment in Test Guidelines.

(iii) Revision of document TGP/7: Drafter’s Kit for Test Guidelines

32. The TWV considered document TWV/48/14.

33. The TWV noted the plans for a revision of document TGP/7 and the TG Drafter’s webpage for consistency with the introduction of the web-based TG Template in 2014, as set out in document TWV/48/14, paragraphs 6 to 8.

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

(i) Revision of document TGP/8: Part I: DUS Trial Design and Data Analysis, New Section: Minimizing the Variation due to Different Observers

34. The TWV considered document TWV/48/15 and agreed that the draft guidance in the Annex to document TWV/48/15, should continue to be developed for inclusion in a future revision of document TGP/8 on minimizing the variation due to different observers, including guidance on PQ and QN/MG characteristics, taking into account the points raised by the expert from Australia in document TWV/48/15, paragraph 21.

35. The TWV noted the importance of the quality of the Test Guidelines in providing clear guidance for DUS examiners and in ensuring the consistency of observations between observers within each authority, and the importance of the continuous training of examiners.

36. The TWV suggested the inclusion of a training exercise in a DUS trial, as a basis to share experiences in the field and to enhance the use of the TWV for training.

37. The TWV agreed on a ring test on lettuce for the management of DUS examinations to be launched in 2015 by experts from France, the Netherlands and other UPOV members. The aim would be to identify possible reasons for differences in DUS examination and variety descriptions for the same varieties. Participants would receive seed of five different varieties and instructions on the examination. The varieties would be described during the technical visit of the forty-ninth session of the TWV, and experts invited to compare the results with their own data.

(ii) Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, Section 3: Method of Calculation of COYU

38. The TWV considered document TWV/48/16 and noted the developments concerning the method of calculation of COYU, including the development of a demonstration module in DUST and the practical exercise that would be conducted using real data to compare decisions made using the current and the proposed improved method.

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

39. The TWV considered document TWV/48/17.

40. The TWV considered the example of a bulk characteristic from the Netherlands and agreed with the TWO at its forty-seventh session and the TWF, at its forty-fifth session that the scale used should have non-overlapping notes (0-5; ~~5~~6-10; ~~10~~11-15; ...).

41. The TWV agreed that the characteristics examined on the basis of bulk samples should be assessed on the basis on the number of plants recommended in the Test Guidelines under chapter 4.1.4.

42. The TWV agreed on the development of guidance on the development of characteristics examined on the basis of bulk samples.

(iv) *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*

43. The TWV considered document TWV/48/18.

44. The TWV noted that an expert from New Zealand made a presentation at the forty-fifth session of the TWF, on the project for "apple reference varieties", as reproduced in Annex II to document TWV/48/18.

45. The TWV noted the explanation of the different forms that variety descriptions could take and the relevance of scale levels in that regard, as presented in Annex III to document TWV/48/18.

46. The TWV noted the guidance for variety description in Italy, as presented in Annex IV to document TWV/48/18.

47. The TWV noted that the results of the practical exercise with a common data set were presented to the TWC at its thirty-second session.

48. The TWV recognized the importance of the expertise of the DUS examiners, and agreed that in the vegetable sector, measurements were rarely used, therefore the example given in document TWV/48/18 were not relevant for vegetables examination. It further agreed that experts from France, Netherlands and United Kingdom would provide a relevant example for vegetables crops (e.g. onion, pea).

(v) *Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, New Section: Guidance of Data Analysis for Blind Randomized Trials*

49. The TWV considered document TWV/48/19.

50. The TWV noted the information provided by the experts from France and the Netherlands on their use of blind randomized trials, including the circumstances under which blind randomized trials are used.

51. The TWV noted the proposal from the expert from France to continue to work on a new draft incorporating comments from other experts, for consideration by the Technical Committee (TC) and the TWPs at their sessions in 2015.

52. The TWV agreed on the need to clarify the distinction to be made between trials at breeders' premises, blind trials and blind randomized trials in the guidance.

53. The TWV agreed that in the case of the use of blind randomized trials, the authorities take the final decision according to the rules and criteria to fulfill a DUS examination, and that a blind randomized trial would only be carried out in exceptional cases.

54. The TWV noted that the experts from Croplife and ESA were in favor of the use of blind tests and of blind randomized trials in some cases.

(vi) *Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, New Section: Examining Characteristics using Image Analysis*

55. The TWV considered document TWV/48/20.

56. The TWV noted the proposal from the expert from the European Union to prepare a new draft for consideration by the TC and the TWPs at their sessions in 2015.

57. The TWV received a presentation from experts from Czech Republic, France, Netherlands and United Kingdom on their use of image analysis for DUS examination, as reproduced in document TWV/48/20 Add.

58. The TWV agreed that some of the software currently used for Image Analysis should be mentioned in UPOV/INF/22 "Software and equipment used by members of the Union".

59. The TWV agreed that experts from Czech Republic, France, the Netherlands, Poland and the United Kingdom would help the drafter of the European Union in the preparation of a new draft for consideration by the TC and the TWPs at their sessions in 2015.

(vii) *Revision of document TGP/8: Part II: New Section: Statistical Methods for Visually Observed Characteristics*

60. The TWV considered document TWV/48/21.

61. The TWV noted the developments concerning a possible New Section: "Statistical Methods for Visually Observed Characteristics" to be introduced in document TGP/8: Part II: Techniques Used in DUS Examination, in a future revision of document TGP/8.

62. The TWV agreed with the comment made by the TWO at its forty-seventh session and the TWF at its forty-fifth session that it should be clarified that the new proposed method was used for the visual observation of individual plants or parts of plants (VS).

TGP/9: Examining Distinctness

(i) *Revision of document TGP/9: Schematic Overview of TGP Documents Concerning Distinctness*

63. The TWV considered document TWV/48/22 and agreed with the revision of the flow diagram in TGP/9, Section 1.6 "Schematic overview of TGP documents concerning distinctness", as set out in document TWV/48/22, Annex I.

64. With regard to Annex II to document TWV/48/22, the TWV agreed with the proposal made by the TWF at its forty-fifth session to extend the box for TGP/5 to supplementary procedures. The TWV also suggested to clarify the term "supplementary procedures".

(ii) *Revision of document TGP/9: Section 2.5: Photographs*

65. The TWV considered document TWV/48/22.

66. The TWV agreed with the proposed guidance on photographs for inclusion in document TGP/9, Section 2.5 "Photographs", as follows:

"2.5.3 The suitability of photographs for the identification of similar varieties is strongly influenced by the quality of the photographs taken by the authority for the varieties in the reference collection and the photograph of the candidate variety provided by the applicant with the Technical Questionnaire. Comprehensive guidance for taking suitable photographs is provided in TGP/7, GN 35 (new). The guidance was developed in particular for the applicants to provide suitable photographs of the candidate variety. The same instructions are important and useful for the authorities to take photographs of the varieties in the variety collection under standardized conditions."

(iii) *Revision of document TGP/9: Method of Observation (Single Measurement – MG)*

67. The TWV considered document TWV/48/22 and the proposed example of a single record for a group of plants (MG) taken on plant parts for inclusion in a future revision of document TGP/9, Subsections 4.3.2 “Single record for a group of plants or part of plants (G)” and 4.3.4 “Schematic summary”, as set out in document TWV/48/22, paragraphs 16 and 17.

68. The TWV agreed with the comment made by the TWO at its forty-seventh session and the TWF at its forty-fifth session, that the example of a single record for a group of plants (MG) taken on plant parts for inclusion in a future revision of document TGP/9, Section 4.3.2 “Single record for a group of plants or parts of plants (G)” and Section 4.3.4 “Schematic Summary” should read as follows:

“Example (MG)

“Measurement (MG): “Leaf blade: width” in Hosta (vegetatively propagated): a representative measurement in the plot.”

69. The TWV noted the comment made by TWO at its forty-seventh session that a suitable illustration should be provided for inclusion in document TGP/7, Subsection 4.3.4 but agreed that this approach was not applicable in the vegetable sector and, therefore, could not help in providing a suitable illustration.

TGP/14: Glossary of Terms Used in UPOV Documents

(i) *Revision of document TGP/14: Section 2.4: Apex/Tip Characteristics*

70. The TWV considered document TWV/48/23.

71. The TWV considered the proposal to develop an explanation on the inclusion of a state of expression based on a differentiated tip in shape of apex characteristics, and agreed with the proposal made by the TWO, at its forty-seventh session, and the TWF, at its forty-fifth session, to amend document TGP/14, section 2.4 as follows:

“2.4.1 The apex of an organ or plant part is the end furthest from the point of attachment. In some cases, the distal extremity of the apex may be differentiated into a “TIP”.

“2.4.2 In considering the approach to describe the apex, the size of the organ and the number of apex shapes should be taken into account. Apex characteristics can be described in simple terms and if a differentiated tip is present it could be further described as a separate characteristic. Generally, it is not necessary to separate the apex shape characteristic.

“2.4.3 In cases where it is appropriate to separate into differentiated tip and apex characteristics, the shape of the apex is taken as the general shape, excluding any differentiated tip. For example: [...]”

72. The TWV agreed that the approach in document TGP/14 for shape of apex and tip characteristics should apply to two-dimensional and three dimensional shapes (e.g. in fruit shape).

73. The TWV also agreed with the comment made by TWO and the TWF at their sessions in 2014, that the approach in document TGP/14 for shape of apex and tip characteristics was most suitable for leaves or larger structures and should be used in particular cases only.

Variety denominations

74. The TWV considered document TWV/48/4.

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

75. The TWV noted the plans to revise document UPOV/INF/12 “Explanatory Notes on Variety Denominations under the UPOV Convention”.

76. The TWV agreed that guidance on confusion for phonetic reasons should continue to be included in document UPOV/INF/12, and that particular attention should be given to the use of different languages.

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

77. The TWV noted the report concerning the possible development of a UPOV similarity search tool for variety denomination purposes and that the first meeting of the working group would be arranged by the end of 2014.

Developments concerning potential areas for cooperation with the IUBS Commission and the ISHS Commission

78. The TWV noted the developments concerning potential areas for cooperation between the International Commission for the Nomenclature of Cultivated Plants of the International Union for Biological Sciences (IUBS Commission), the International Society for Horticultural Science Commission for Nomenclature and Cultivar Registration (ISHS Commission) and UPOV, as set out in document TWV/48/4.

Uniformity assessment

79. The TWV considered document TWV/48/9 and the situations described in the Annexes I to IV as a basis to develop guidance in document TGP/10.

80. The TWV agreed on the importance of assessing uniformity in each independent growing cycle and is not in favor of combining results from 2 cycles.

Experiences with new types and species

81. The TWV was informed by the expert from Spain about the testing of a new cross of Tomato Rootstock (*Solanum pimpinellifolium* x *Solanum habrochaites*). The expert from Spain agreed to make a presentation on that cross at the TWV session in 2015.

82. The TWV was informed by the expert from France about testing of *Stevia rebaudiana*. The expert from France agreed to make a presentation about that species at the TWV session in 2015.

83. The TWV was informed by the expert from the Netherlands about testing of seaweed and true seed potato. The expert from the Netherlands agreed to make a presentation about those at the TWV session in 2015.

84. The TWV was informed by the expert from Japan about testing of Pepino (*Solanum muricatum*).

Use of disease resistance characteristics in DUS examination

85. The TWV received presentations by an expert from the European Union on “the use of disease resistance characteristics in DUS examination”, an expert from ESA on “survey – CPVO vegetable protocols disease resistance” and an expert from Italy on “an overview on resistance tests on vegetable varieties in Italy”, copies of which are reproduced in document TWV/48/27 Add..

86. The TWV agreed on the importance and the value of disease resistance characteristics in UPOV Test Guidelines. It further agreed that particular care should be taken when revising or drafting Test Guidelines for disease resistance characteristics to ensure that a clear and complete method (e.g. availability of the isolate) is provided.

87. The TWV recalled that asterisked characteristics are “characteristics that are important for the international harmonization of variety descriptions” (see document TGP/7, GN 13, as reproduced below), and recalled that the Test Guidelines needed to be agreed by all members of the Union, including the selection of asterisked characteristics.

“GN 13 *Characteristics with specific functions*

“1. *Asterisked characteristics (TG Template: Chapter 7: column 1, header row 2)*

“1.1 The General Introduction (Chapter 4.8: Table: Functional Categories of Characteristics) states that asterisked characteristics are “characteristics that are important for the international harmonization of variety descriptions.” The criteria for selecting a characteristic as an asterisked characteristic are that:

“(a) it must be a characteristic included in the Test Guidelines;

“(b) it should always be examined for DUS and included in the variety description by all members of the Union except when the state of expression of a preceding characteristic or regional environmental conditions render this inappropriate;

“(c) it must be useful for the international harmonization of variety descriptions;

“(d) particular care should be taken before selection of disease resistance characteristics.

“1.2 It should be clarified that criterion (b) is worded to ensure that members of the Union which are not able to examine the characteristic do not use this as a reason to object to the characteristic being agreed as an asterisked characteristic. Thus, any characteristic which satisfies the criteria and, in particular, is useful for the international harmonization of variety descriptions should be selected as an asterisked characteristic, even if it cannot be examined for all varieties or by all members of the Union. The upper limit on the number of asterisked characteristics should, therefore, be determined by the number which are required to provide useful internationally harmonized variety descriptions.”

88. The TWV agreed that it might be appropriate to review document TGP/7 to: (a) introduce a delay before asterisked disease resistance characteristics need to be examined by all members of the Union; and (b) provide guidance on additional uniformity standard for resistant plants in a susceptible variety.

Discussion on draft Test Guidelines

Basil (Ocimum basilicum L.) (Revision)

89. The subgroup discussed document TG/2001/2(proj.1), presented by Mrs. Swenja Tams (Germany), and agreed the following:

2.3	to read “The minimum quantity of plant material, to be supplied by the applicant, should be: Seed-propagated varieties: 6 g or at least 4000 seeds Vegetatively propagated varieties: 50 young rooted plants”
4.1.4	to be checked whether to indicate 20 plants for seed propagated and 10 plants for vegetatively propagated varieties
4.2	to add explanation concerning open-pollinated varieties
5.3	to be reviewed
6.5	to check whether to keep indication (v) in the table of characteristics
Table of Chars.	- to check number of asterisked characteristics - to review and add example varieties
Char. 1	- to delete state 2 - to be indicated as QL
Char. 3	- to add (+) and explanation - to read “Plant: density of branches” - to check wording of states of expression
Char. 4	to precise which stem and when to be observed
Char. 8	to check whether to delete
Char. 10	- to read “Leaf blade: distribution of anthocyanin” - to be indicated as PQ - to add (+) and explanation
Char. 11	- to read : Intensity of green color - to check whether to add an explanation
Char. 12	to check whether example varieties can be provided
Char. 15	- to add (+) and explanation - state 1 to read “absent or very weak”

Char. 18	- to be indicated as MS - to read: Flowering stem: length of internodes - to add to Ad. 8 on which part of the plant to be observed
Char. 19	to move before Char. 18
Char. 23	to read "Time of beginning of flowering"
8.1	- to invert (a) and (b) and check use in t.o.c - to add explanation on which leaves observations should be made
8.1 (a)	to check whether to add flowering
Ad. 1	to add photo for state erect (3)
Ad. 5	- to be presented in a grid
Ad. 15	- to improve illustration (i.e. differences between states is not clear)
Ad. 23	to explain why to be observed only for seed-propagated varieties
TQ 4.1	to check whether full breeding scheme applies (see TG/Radish)
TQ 6	to be completed

Bottle Gourd, Calabash (Lagenaria siceraria (Molina) Standl.)

90. The subgroup discussed document TG/LAGEN(proj.3), presented by Mrs. Chrystelle Jouy (France), and agreed the following:

Cover page	to check German names in GRIN
4.2.3	to read "For the assessment of uniformity by counting of the number of off-types, a population standard of 2% for cross-pollinated varieties and of 1% for hybrid varieties with an acceptance probability of at least 95% should be applied. In the case of a sample size of 20 plants, the maximum number of off-types allowed would be 1 for hybrid varieties whereas for cross-pollinated varieties it would be 2."
4.2.4	to read "For the assessment of uniformity of open-pollinated varieties, relative uniformity standards should be used" and to make reference to TGP/1
T.o.C	to review number of asterisked characteristics
Char. 1	to read "Seedling: length of cotyledons"
Char. 2	to be indicated as VG
Char. 5	- to read "Leaf blade: incisions" - to have states absent or shallow (1), weak (2), medium (3)
Chars. 6, 8	to add (+) and illustration/ explanation
Char.10	to be deleted
Char. 11	- to read "Fruit: shape of the fruit excluding the neck" - to have states oblate (1), rounded (2), pyriform (3), clavate (4), cylindrical (5) and to provide corresponding example varieties
Char. 14	- to read "Fruit: neck" - to be indicated as QN - to have states absent or very short (1), short (3), medium (5), long (7), very long (9) and to provide corresponding example varieties
Char. 15	- to add state "none" as state 1 - to add (*)
Char. 16	to read "Neck: length in relation to total length of fruit"
Char. 17	- to read "Neck: diameter in relation to the maximum diameter of the fruit" - to have states small (3), medium (5), large (7)
Char. NEW (FR-1)	- to be indicated as QN - to read "Neck: creasing at base" - to have states absent or very weak (1), medium (2), strong (3)
Char. 18	- to read "Fruit: main color" - to add "green" for each states (very light green, light green...) - to delete (+) and explanation
Char. 19	state 1 to read "none or very few"
Char. 21	- to read "Fruit: texture of skin" - state 4 to read "strongly verrucose" - state 7 to read "strongly corrugated"
Char. NEW (FR-2)	- to be indicated as QN and VG

Char. 22	to be indicated as VG
Char. 23	to add (*)
Ad. 2	to improve explanation (see to TG/Cucurbita maxima x C. moschata)
Ad. 5	to be improved (picture of single leaf- flat)
Ad. 11	to be presented in a grid
Ad. 12	sentence to read "Observations of the developed length of the fruit, should be made at the time of full development of the fruit."
Ad. 13	to remove underlining
Ad. 14	to provide new illustrations according to changes on Char. 14
Ad. 17	to clarify where the base is (versus the apex)
Ad. NEW (FR-2)	to improve photo for state 5
Ad. 22	to improve illustration (add an arrow where to measure)
9.	to review format
TQ. 4.1	to be completed (see ASW)
TQ 5.5	to correct numbering

**Brassicac (Partial Revision: Male Sterility)*

91. The subgroup discussed document TWV/48/31 on the partial revision of the following Test Guidelines, presented by Mrs. Amanda van Dijk (Netherlands):

- Cauliflower (*Brassica oleracea* L. convar *botrytis* (L.) Alef. var. *botrytis* L.) (document TG/45/7)
- Cabbage (*Brassica oleracea* L.) (document TG/48/7)
- Brussels Sprout (*Brassica oleracea* L. var. *gemmifera* DC.) (document TG/54/7)
- Kohlrabi (*Brassica oleracea* L. convar. *acephala* (DC.) Alef. var. *gongylodes* L.; *Brassica oleracea* L. *Gongylodes* Group) (document TG/65/4)
- Curly Kale (*Brassica oleracea* L. var. *sabellica* L.) (document TG/105/4)
- Calabrese, Sprouting Broccoli (*Brassica oleracea* L. convar. *botrytis* (L.) Alef. var. *cymosa* Duch. (including *Brassica oleracea* L. convar. *botrytis* (L.) Alef. var. *italica*) (document TG/151/4)

92. The TWV agreed with the proposed revisions, subject to the addition of a note to all explanations on the availability of the method, following the example of the Test Guidelines for Tomato (document TG/44/11 Rev.), Ad. 61.:

"Note: Patents pending on part of the method: [xxx] and [xxx] and equivalents. Use solely for DUS purposes and for the development of variety descriptions by UPOV and authorities of UPOV members, courtesy to [xxx]."

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

93. The subgroup discussed document TG/BRASS_JUN(proj.2), presented by Mr. Yoshiyuki Ohno, (Japan) and agreed the following:

2.3	- to be improved and follow normal structure (separate lines for the two options) - to check and provide specific number of seeds for vegetable and agricultural plants
3.3	to delete heading "(a)" and number paragraphs (3.3.1 and 3.3.2)
3.4	- to check the number of plants to be indicated for vegetable and agricultural plants - to read: [...] ... plants for single spaced plants and ... plants for drilled plants [...] (see document TWV/47/34 "Report")
Char. 1	check use of example variety "Kigarashina" (used for state "weak" in Char. 15)
Chars. 2, 3	to add (+) and explanation/drawing on how to observe the cotyledon (see TG/Rape Seed)
Char. 4	to add table to define and distinguish types (see TG/Lettuce)
Char. 6	to delete (*)
Char. 11	to read: "Leaf blade: size of terminal lobe"

Char. 12	- to read: "Leaf blade: density of lateral lobes" - to clarify meaning of density (density of what?)
Char. 13	- to read "Leaf blade: pubescence on lower side" - to have states absent or weak (1), medium (2), strong (3) - to check example varieties
Char. 14	- to be combined with Char. 15 - to add (+) and explanation that the strongest intensity of anthocyanin should be observed (not the extension)
Char. 16	to add (+) and explanation how/where to observe varieties with anthocyanin coloration
Char. 17	- to delete (*) - to check how to observe on type 2 or to provide example varieties for type 2
Char. 18	- to read "Leaf blade: density of incisions of margin" - to check how to observe on type 2 or to provide example varieties for type 2
Char. 19	to check how to observe on type 2 or to provide example varieties for type 2
Char. 20	to check whether also to include type 3 and to check example varieties
Char. 21	to whether to be moved after head characteristics
Char. 23	to read: "Head: height"
Char. 24	to read: "Head: diameter"
Char. 25	to read: "Head: number of leaves"
Char. 26	- to read: "Head: internal color" - to read for state 3: medium green
Char. 27	- to check whether to combine with Char. 23 - to provide example varieties
Char. 28	- to read "Plant: tillering" - to check whether QL or to delete characteristic
Char. 29	to delete (+) and explanation
New chars.	new characteristics to be inserted before Char. 30 "Seed: color": "Time of flowering" (with explanation that only to be observed for spring sown trials) "Only varieties with head formation: absent: Plant: length" (to add (+) and explanation) "Only varieties with head formation: absent: Siliqua: length" "Only varieties with head formation: absent: Siliqua: length of beak" "Only varieties with head formation: absent: Siliqua: width" "Only varieties with head formation: absent: Siliqua: length of peduncle" (to check whether peduncle or pedicel) "Only varieties with head formation: absent: Generative development in the year of sowing for late summer sown trials" "Leaf: glaucosity" "Leaf: number of lobes" "Only varieties with head formation: absent: Production of pollen"
Ad. 6	to check whether to use pictures comparing same types
Ad. 11	to improve illustration
Ad. 12	to improve illustrations for state 7 (including petiole) and delete numbers in the photo
Ad. 21	to indicate in the illustration where to assess
Ad. 27	to check what to observe (height of core?, see TGs Cabbage, Cauli Flower)
8.2	to replace "pods" by "siliquas" in the key of growth stages
TQ 1	to check if box for hybrids is needed
TQ 6	to replace example with one from the t.o.c

*Cassava (*Manihot esculenta Crantz.*)

94. The subgroup discussed document TG/CASSAV(proj.5), presented by Mr. Ricardo Zanatta (Brazil), and agreed the following:

1.	second sentence to read "In the case of ornamental varieties, in particular, it may be necessary to use additional characteristics or additional states of expression to those included in the Table of Characteristics in order to examine Distinctness, Uniformity and Stability."
Table of Chars.	spelling of example varieties not in capitals (only first letters)
Char. 3	to add (*)
Char. 12	- to read "Stipule: division" - state 2 to read "divided"
Char. 13	to check whether QL (information to be provided at TWA)
Char. 15	to read: "Stem: color of bark"
Char. 16	to replace "cream" with appropriate color
Char. 17	to read "Stem: alignment"
Char. 20	to read: "Stem: color of end branches" to add (+) and explanation indicating the top of plant
Char. 21	state 1 to read "absent or short"
Char. 22	to check wording of state 1 "whitish"
Char. 23	to check whether QL until TWA to delete (+) state "rough" to have note 2
Chars. 24, 25	to check wording of state "cream"
Char. 27	- to delete MS - to check whether example varieties and data over years can be provided until TWA or whether the characteristic can be deleted
Char. 28	to have notes 1, 3, 5
Ad. 2	to delete photos but describe where to be observed
Ad. 3	to put the base upside down (i.e. to reverse pictures)
Ad. 7, 8	to replace photos by drawings
Ad. 11	to have only one illustration with arrows indicating where to observe
Ad. 12	to have illustrations of entire and divided stipule only
Ad. 13	- to use illustration of one plant only - to check whether really to be observed on the upper third
Ad. 14, 15, 16	to keep only one photo to illustrate what should be observed, but not to illustrate colors
Ad. 18, 19	to read "The characteristic should be observed at the middle third of the plant. The distance between leaf scars should be observed on two scars in the same alignment."
Ad. 21	- to delete column for state 2 - state 1 to read "absent or short"
Ad. 22, 24, 25	to move reference to website to chapter 9
Ad. 27	- to delete first sentence. - to indicate example varieties to determine content
TQ 5	to update according to grouping characteristics
TQ 9.3	to be added

*Cucumber (*Cucumis sativus L.*) (Partial Revision: *Cucurbit yellow stunting disorder virus (CYSDV)*)

95. The subgroup discussed document TWV/48/32, presented by Mr. David Calvache (Spain) and agreed with the proposed revision, subject to the following modifications:

Char. 51	- to add example varieties "Burgos" and "Castro" for state 1 - to add Char. 51 to Chapter TQ 7
Ad. 51- 9.5	to read "Greenhouse/plastic tunnel/climatic chamber"

Ad. 51- 13	to read “In the not recommended case of natural infection, the source of inoculum is not controlled. Then, the identity of the virus should be confirmed by PCR or hybridization, because the symptoms may be similar to those caused by other virus.”
------------	--

Cucurbita maxima x Cucurbita moschata

96. The subgroup discussed document TG/CUCUR_MMO(proj.2) Corr., presented by Mrs. Chrystelle Jouy (France), and agreed the following:

4.2.3	to be adjusted according to Standard Wording in adopted Test Guidelines and in line with document TWV/48/9 (ref. to General Introduction)
5.3	to update TQ.5 numbering
Table of Chars.	to check number of asterisked characteristics
Char. 1	to be deleted
Char. 2	- example variety for state 2 to read “Tetsukabuto AG 90” - to add (*)
Char. 4	- to provide example varieties or illustration - to have states absent or very weak (1), weak (2), medium or strong (3) - to add (*) - to harmonize title with Lagenaria
Char. 6	to have states absent or very weak (1), weak (2), medium (3)
Char. 7, 8, 9	to be indicated as VG
Char. 10	- to read “Fruit: shape” - to have states oblate (1), round (2), obovate (3)
Char. 11	to check whether example variety “TZ148” is a breeder’s reference
Char. 13	to add (+) and illustration
Char. 14	- to correct spelling of example variety “Flexifo” to read “Flexifort” - to add (*)
Char. 16	to check whether example variety “Ercole” should be moved from state 3 to state 7
Char. 17	- to add (+) and illustration - state 2 to read “slightly rough”, state 4 to read “very rough”
Char. 18	- to have notes 1 and 2 - to add (*)
Chars. 20, 21	- to be combined and to read “Fruit: density of blotches” - to have states none (1), sparse (3), medium (5), dense (7) - to update illustration accordingly
Char. 22	- to read “Fruit: intensity of yellow color of flesh” - to be indicated as QN - to have states light (1), medium (2), dark (3)
8.1 (a)	to be deleted
8.1 (c)	to read “Observations should be made on fully developed fruit before the color change at over maturity”
8.1	table on synonyms in the denomination of example varieties to be moved to chapter 8.3- see TGP/7, GN 29.2 (see other TGs for presentation format)
Ad. 2	to read “Plants tend to develop many branches. The length of the main stem is correlated to the volume of the plant, the surface covered by the plant in the field, the growth speed of the stems. This characteristic could be assessed by comparisons between the plants of the same variety. When plants are spaced with the same distance between plants, it is possible to identify a variety which grows faster than another.”
Ad. 10	- to improve grid
Ad. 12	to remove bold and underline
Ad. 14, 15	use consistent orders according TGP/7 and TGP/14
9.	to check presentation of literature references
TQ 1.2	to delete wording in box
TQ 5.5	to correct numbering

**French Bean (Phaseolus vulgaris L.) (Partial Revision: format of disease resistance explanations)*

97. The subgroup discussed document TWV/48/29, presented by Mrs. Marian van Leeuwen (Netherlands), agreed with the proposed revisions, subject to the following modifications:

General	to correct spelling of example variety "Masai" to "Masai" (throughout document)
Ad. 49- 6	title in first row of table to read "(no longer in TG) Lambda"
Ad. 49- 8.2	to delete "e.g. Masai"
Ad.49- 8.6	to read days instead of d
Ad. 49- 9.1, 9.2	to read "number" instead of #
Ad. 49- 9.3	to correct name of example "Michelet" in t.o.c. to "Michelet à longue cosse"
Ad. 49- 12	information on soaking seeds to read "Resistant [9]: class 0 and 1 Susceptible [1]: class 2 and 3"
Ad. 50	- title to read "Ad. 50: Resistance to <i>Bean common mosaic necrosis virus (BCMNV)</i> " - to also update in t.o.c and TQ
Ad. 50- 8.3	to read "First leaf expanded (8-12 days)"
Ad. 50- 9.1, 9.2	to read "number" instead of #
Ad. 50- 9.4	to read "Glasshouse or climatic chamber"
Ad. 50- 9.6	to read: "Initial 5-7 days after inoculation: [...]" (to add colon)
Ad. 50- 10.3	to read "First leaf expanded (8-12 days after sowing)"
Ad. 51	- title to read "Ad. 51: Resistance to <i>Pseudomonas savastanoi</i> pv. <i>phaseolicola</i> " - to also update in t.o.c and TQ
Ad. 51- 1.	to delete "Halo blight"
Ad. 51- 4.	to replace "UK" by "GB"
Ad. 51- 6.	to read "All differentials should be susceptible (Canadian Wonder, A52, Red Mexican UI3, Mesunka, A53, A43, Guatemala 196-B)"
Ad. 51- 8.3	to read "First leaf (9-14 days after sowing)"
Ad. 51- 8.4	to read "Tap water or saline solution (0.85% NaCl)"
Ad. 51- 8.8	- to read "Maximum 3 weeks on plate, and maximum 2 times of subculturing on plate" - to check whether three weeks is the correct indication
Ad. 51- 9.1, 9.2	to read "number" instead of #
Ad. 51- 9.6	to read "22/20°C day/night or 20°C day and night"
Ad. 51- 10.1	to read "Rinse bacteria from plate with tap water and add 2 g carborundum per 100 ml or rinse bacteria with saline solution (0.85% NaCl)"
Ad. 51- 10.3	to read "First pair of leaves spreading (9-14 days after sowing)"
Ad. 51- 10.4	to read "Rubbing with sponge or inoculation by spraying leaves with pressure (2 bars) until runoff. For this purpose several types of equipment may be used: atomizer or paint brush with a pressure supplier."
Ad. 51- 11.2	to add notes [1] and [9] to "Resistant" and "Susceptible"
Ad. 52	- title to read "Ad. 52: Resistance to Common Blight (<i>Xanthomonas axonopodis</i> pv. <i>phaseoli</i>)" - ISF proposes to add pathogen " <i>xanthomonas fuscans</i> " but accepts to refer to " <i>xanthomonas axonopodis</i> " only
Ad. 52- 1	to read " <i>Xanthomonas axonopodis</i> pv. <i>phaseoli</i> (Common blight)"
Ad. 52- 2	to read "Yes"
Ad. 52- 4	to read: "Vegetable Research Institute, Budapest (HU)"
Ad. 52- 9.1, 9.2	to read "number" instead of #
Ad. 52- 9.6	to read "26/20°C day/night or 28/25°C day/night"
Ad. 52- 10.4	to read "Mechanical, with camel hair brush or inoculation by spraying leaves with pressure (2 bars) until run-off. For this purpose several types of equipment may be used: atomizer or paint brush with a pressure supplier"
Ad. 52- 11.2	to add notes [1] and [9] to "Resistant" and "Susceptible"

**Lentil (Lens culinaris Medik.) (Revision)*

98. The subgroup discussed document TG/210/2(proj.2), presented by Mrs. Stéphanie Christien (France), and agreed the following:

4.2	to add paragraph (according to document TWV/48/9)
Char. 1	to reverse order of states (state 1 to read "green", state 3 to read "orange")
Char. 3	- to check whether QL - to clarify where the coloration is located
Char. 4	- to delete (a) - to add (+) explanation when to be observed
Char. 5	- to check whether 9 notes are necessary - to add (+) and explanation or illustration
Char. 6	- to read "Leaflet: shape" - state 2 to read "obovate" - to be moved after Char. 7
Char. 9	- to add (+) - to check method of observation - states to read only one (1), one or two (2), only two (3), two or three (4), only three (5), more than three (6)
Char. 10	to check whether to add (a)
Char. 11	to check whether to add (a)
Char. 12	to check whether to add (a)
Char. 14	- to add (+) - to check whether to add (b) or (c)
Char. 15	to provide example varieties
Char. 17	to clarify meaning of "dry"
Char. 18	- to check whether to read: "Dry seed: shape in longitudinal section" - to provide example varieties
Char. 19	to read: "Dry seed: main color"
Char. 20	- to read: "Dry seed: pattern of secondary color" - state 5 to read "irregular"
Char. 21	to read: "Dry seed: weight"
Char. 22	to be indicated as MS
8.1	to read: (a) Flower: observations should be done when at least 50% of the plants are flowering and on flowers fully developed. (b) Pod before dry harvest maturity: observations should be done when the pod is not completely dry. (c) Pod at dry harvest maturity: observations should be done when the pod is completely dry but before that the pod breaks alone.
Ad. 20	to improve illustrations (delete second column and have close-up photos)
Ad. 21	to improve explanation and clarify when a seed is considered as "dry"
Ad. 22	first sentence to read "The observations are made on 20 plants per variety per replication."
9.	to be completed
TQ.6	to update according to standard format

Lettuce (Lactuca sativa L.) (Revision)

99. The subgroup discussed document TG/13/11(proj.1), presented by Mrs. Amanda van Dijk (Netherlands), and agreed the following:

Table 1	to be reviewed
---------	----------------

Del. Char. 2	- to check whether to keep Char. 2 “Seedling: anthocyanin coloration” from previously adopted version - to delete (*) - to check whether to be indicated as QN or QL - to check relation between Chars. 2 and 11 (are both chars. necessary?)
Char. 2	to be indicated as VG/MS
Char. 4	- to check method of observation - to have states few (1), medium (2), many (3)
Char. 6	to be deleted and example varieties to be moved to Char. 7
Char. 7	to have states very few (1) to very many (9)
Char. 8	to check wording and whether to read “width of divisions”
Del. 17	- to check whether to keep Char. 17 “Leaf: shape of tip” from previously adopted version and to read “Leaf: shape of apex” - to check states of expression
Char. 11	- to be combined with Char. 14 - to have states absent to very weak (1) to very strong (9) - to be indicated as QN
Char. 13	to add (*)
Char. 15	- to read “Leaf: color” - to have states green (1), yellowish green (2), greyish green (3)
Char. 22	to read “Leaf: depth of incisions of margin of distal half” - to check whether to add an extra char. to describe “bidentate”
Del. Char. 10	to check whether to keep Char. 10 “Head: density” from previously adopted version and to check scale
Char. 27	to delete example variety “Aquarel”
Char. 28	to delete example varieties “Aquarel” and “Frisady”
Del. Char. 30	- to keep Char. 30 “Auxillary sprouting” from previously adopted version - to have states absent or weak (1), medium (2), strong (3)
Char. 33	to add example variety “Sprinter” for state 1
Char. 35	- to have states susceptible (1), moderately resistant (2), highly resistant (3) - to move example variety “Salinas” to state 2 - to be indicated as QN
8.1	to check whether to add descriptions for leaf types
Ad. 4	- to check whether to read: “Observations should be made on the whole plant by cutting the stem by cutting the plants in longitudinal section.”; if so, to add illustration
Ad. 6	to be improved
Ad. 8	to improve illustration (i.e. use one leaf-flat photo and add arrows)
Ad. 9	to be presented in a grid
Ad. 10	to improve illustration (e.g. use photos of cut plants)
Ad. 15, 16	to read “...with an area covered with anthocyanin less than large, ...”
Ad. 22, 23	to improve illustration (position of arrows) or to keep just the distal half
Ad. 31	to read: “Observations should be made on bolted plants [...]”
Ad. 34	to be consistent with example varieties used in the T.o.C
Ad. 34, 12	to clarify “undecided”
Ads. 32 to 35	- to read “days post inoculation” instead of “dpi” - wording to follow the standard resistance protocol (see TGP/12)

**Shiitake* (*Lentinula edodes* (Berk.) Pegler) (Partial Revision: Plant Material Required)

100. The subgroup discussed document TWV/48/36, presented by Mr. Yoshiyuki Ohno (Japan), and agreed with the proposed revision.

Sweet Pepper, Hot Pepper, Paprika, Chili (Capsicum annum L.) (Partial revision)

101. The subgroup discussed document TWV/48/38, presented by Mrs. Chrystelle Jouy (France), and agreed with the proposed revisions, subject to the following modifications:

General	to use scientific names for FR, DE and ES translations of names of disease resistance characteristics
Ad. 48- 4.	to add "INIA (ES)"
Ad. 48- 11.2	to read "CPVO" instead "CPOV"
Ad. 49- 6.	- to check consistency of example varieties compare to the ones in the Table of characteristic (new proposed wording) - to read pathotype 1.2 (see *)
Ad. 51- 11.2	third row to read "[9] highly resistant"
Ad. 52- 4.	to add "INIA (ES)"

Spinach (Spinacia oleracea L.) (Partial revision: Characteristic and Ad. 18)

102. The subgroup discussed document TWV/48/37, presented by Mrs. Marian van Leeuwen (Netherlands), and agreed with the proposed revisions, subject to the following modifications:

Char. 18	to add "Race Pfs: 14", including example varieties and to add to TQ 7.3
Char. 18	not to add an asterisk for Race Pfs: 8, Race Pfs: 11 and Race Pfs: 12

Tomato (Solanum lycopersium L.) (Partial Revision: Characteristic 49)

103. The subgroup discussed document TWV/48/40, presented by Mrs. Chrystelle Jouy (France), and agreed not to submit this proposal for a partial revision to the Technical Committee (TC) at its fifty-first session in 2015, but agreed on a partial revision of the nomenclature of all disease resistance characteristics at its forty-ninth session.

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

104. The subgroup discussed document TG/173/4(proj.2), presented by Mrs. Stéphanie Christien (France), and agreed the following:

Cover page and 1.	- to clarify coverage of the TGs - to add Test Guidelines mentioned in Chapter 1 as associated documents
4.2.3	to be clarified
5.3	to add Char. 21 "Time of flowering"
Table of Chars.	to check number of asterisked characteristics
Char. 1	to be indicated as QN to check whether more states could be indicated
Char. 2	- to read "Cotyledon: shape of apex" - to have more states if indicated as PQ
Char. 3	to add (+) indicating when to observe
Char. 4	to clarify or to add a (+)
Char. 5	to clarify or to add a (+) to read "leaf: attitude of apex" to check whether to delete the characteristic
Char. 6	to clarify method of observation
Char. 8	to be indicated as QN
Char. 9	to check whether to combine Chars. 9 and 10
Char. 12	to be indicated as QN
Chars. 16, 17, 18	to add (+) and explanation

Char. 19	- to be indicated as QN - to check method of observation - to read "Leaf: shape of apex"
Char. 20	- to check method of observation - to check whether state "absent" should be kept or be deleted
Chars. 21 to 27	to check whether to delete flower characteristics
Char. 21	to check method of observation (according to Ad. 21 should be indicated as MS)
Char. 22	to check method of observation (see Ad. 22 is it the average?)
Char. 25	to check whether 9 notes are necessary
Char. 27	to add (+) and explanation
Char. 29	to read: "Head: diameter"
Char. 30	- to add (+) and explanation - to check method of observation - to be indicated as QN - to have states low (3), medium (5), high (7)
Char. 31	- state 2 to read "medium elliptic" - to check order of states (compressed to elongated)
Char. 32	to be indicated as QN
Char. 33	- to delete "(outer side)" - to check whether state "yellow and red" can be deleted or to move "yellow and red" before "red"
Char. 34	- to clarify on which color (see Char. 10) - to check whether to combine with Char. 33
Char. 36	to read: "Head: openness of apex"
Char. 37	- to be indicated as QN - to add (+) explaining how to assess
Char. 38	- to read: "Head: length of axis" and move information in brackets to Chapter 8.2 - to add (+) - to provide example varieties
Char. 39	to check whether to delete
Char. 40	to be moved before Char. 28
8.1	to read: (a) Leaf: observations should be done in the vegetative stage in the field on the full-grown leaf. (b) Head: observations should be done after a forcing period in a complete dark environment and before exposure to daylight. (c) Bolting and flowering characteristics: observations should be done in a special bolting trial in which a flowering stem is formed.
Ad. 8	to add picture or drawing
Ad. 20	to clarify explanation
Ad. 21	to clarify on how many plants
Ad. 24, 25	to read "Observations should be done on the stipules of the upper third."
Ad. 31	to be presented in a grid
9.	to review order
TQ.1	to be updated (see comments Cover page and 1.)

Correction of the Test Guidelines for Carrot

105. The TWV considered document TWV/48/41 and agreed with the proposal to correct the Test Guidelines for Carrot (document TG/49/8) as follows:

4.2.4	to correct reference in final sentence from Chapter 4.2.2 to 4.2.3
-------	--

Guidance for drafters of Test Guidelines

106. The TWV considered document TWV/48/10 and received a presentation on the web-based TG Template, a copy of which is presented in the Annex to document TWV/48/10.

107. The TWV noted the features of Version 1 of the web-based TG Template, as set out in document TWV/48/10, paragraph 10.

108. The TWV noted the request for Leading Experts to participate in the testing of Version 1 of the web-based TG Template.

109. The TWV noted the exclusive use of the web-based TG Template for the development of all Test Guidelines from 2015.

110. The TWV appreciated the considerable amount of work done for the development of the web-based TG Template, which would be an important improvement for the development of Test Guidelines.

Improving the effectiveness of the Technical Committee, Technical Working Parties and Preparatory Workshops

111. The TWV considered document TWV/48/11 and the proposals concerning possible means of improving the effectiveness of the TWPs and the Preparatory Workshops, and made the following comments:

Proposal		Comment
Technical Working Parties		
General		
(a)	conduct a survey of TWP participants in 2014 in order to identify further areas for improvement and to obtain feedback on the effectiveness of measures already taken	<ul style="list-style-type: none"> agreed interesting to have feedback from participants to be decided year-by-year
(b)	review the TWP invitations in order to ensure that information is disseminated to all appropriate persons	<ul style="list-style-type: none"> support the idea even if the distribution seems to be already efficient encourage the idea of geographical distribution to be more precise on the invitation (e.g. additional costs) to ensure to reach good person in authorities to allow the possibility for designated persons to invite experts
(c)	in order to encourage greater participation by all participants in the TWP sessions, to request participants at the beginning of the session to introduce themselves and to briefly (in 30 seconds) report the most important issue they faced at that time. Matters of broad interest could then be considered for further discussion at an appropriate time	<ul style="list-style-type: none"> agreed, but should be very brief to take into consideration non-native English speakers/ participants to clarify that this should be complementary to the country report to allow at least one minute per participant
(d)	organize presentations by experts of members of the Union on topical and relevant matters	<ul style="list-style-type: none"> agreed allocating a specific time (e.g. 5 to 10 minutes per presentation)
(e)	request hosts to provide: <ul style="list-style-type: none"> name badges for all participants (including local participants), a large poster board with the participant names and photographs and a space for each participant to indicate their area of particular interest (specifically including local participants), a notice board for host announcements (e.g. visits), 2 projector screens in large rooms (at opposite ends of room) 	<ul style="list-style-type: none"> disagreed on the idea of 2 projector screens, if needed it would be better to have TV screen, minimizing the impact on budget poster board proposal not supported to add a box in the list of participants for areas of interest keep it simple for the host, just ensure information is well spread list of participants to be distributed in advance
TWP documents		
(f)	provide a summary of the purpose and proposed decisions at the beginning of TWP documents	<ul style="list-style-type: none"> agreed

Proposal		Comment
(g)	post documents sufficiently in advance of the meetings	<ul style="list-style-type: none"> • agreed • ensure drafters provide their inputs on time
(h)	continue to include decision paragraphs in TWP documents	<ul style="list-style-type: none"> • agreed
(i)	minimize the time for presentation of documents, particularly where presented for information only	<ul style="list-style-type: none"> • agreed but allow time for questions • allow time for participants to contribute in advance, even when documents are presented for information • to be indicated in the agenda (for consideration/ for comment...)
Test guidelines		
(j)	request TWP designated persons to make proposals for new or revised Test Guidelines in advance of the TWP session	<ul style="list-style-type: none"> • agreed • will help to have a list of adopted Test Guidelines containing the date of the last revision
(k)	circulate the proposed schedule of TG to be discussed during the session to TWP participants one week before the TWP session	<ul style="list-style-type: none"> • agreed • should be even more in advance (e.g. 2 weeks) • ensure consistency between, agenda, work plan, documents • to provide link to the documents in the WP
(l)	improve preparation of Test Guidelines and presentation of Test Guidelines at TWPs by the Leading expert by: <ul style="list-style-type: none"> • training (e.g. electronic training workshops, including the use of the Web-based TG template, and guidance on the presentation of Test Guidelines at the sessions), • providing UPOV comments in advance 	<ul style="list-style-type: none"> • agreed • to ensure the diffusion of the 1st draft is circulated to all Interested experts • agreed • sufficiently in advance (e.g. 10 days)
TGP documents		
(m)	request participants to provide their comments on TGP documents in advance of the TWP session, according to a specified date	<ul style="list-style-type: none"> • is not seen as necessary • could be helpful but should not avoid comments and discussion during the meeting
(n)	organize a separate, annual meeting of a working group to discuss TGP documents in the week before the TC sessions in Geneva. The meetings would be open to all TC and TWP designated persons and consideration would be given to the possibility to view the meeting electronically	<ul style="list-style-type: none"> • disagreed • do not see the usefulness of such separate meetings • better to have discussion in TWV • electronic means will decrease the participation in discussion • necessary to keep the experts in touch with technical matters and TGP documents
(o)	in conjunction with this approach, to report on significant developments at TWPs, without detailed discussion of individual TGP documents	<ul style="list-style-type: none"> • Not applicable
Technical visit		
(p)	conduct a survey of TWP participants of their requirements for technical visits	<ul style="list-style-type: none"> • agreed • to have the technical visit in conjunction with the preparatory workshop • important to let the host propose and organize • to consider the impact for the host • to consider having closer relation between the plants discussed during the week (e.g. TGs) and the technical visit
Preparatory Workshops		
(a)	if the length of time spent on TGP and information documents is reduced, to hold the preparatory workshops on Monday in order to encourage all TWP participants to attend the Preparatory Workshop	<ul style="list-style-type: none"> • Not applicable -see (n)
(b)	to use more, shorter presentations and use experts from members of the Union as presenters	<ul style="list-style-type: none"> • agreed

Proposal		Comment
(c)	to continually renew exercises for existing topics	<ul style="list-style-type: none">• agreed
(d)	to organize small groups of participants with different levels of experience for the group exercises	<ul style="list-style-type: none">• agreed

Use of statistical approaches in DUS examination

112. The TWV received a presentation of an expert from the Netherlands on “the use of statistical approaches in DUS examination” as reproduced in addendum of document TWV/48/26.

Management of reference collections

113. The TWV noted that expert from France would give a presentation at its forty-ninth session on “Management of reference collections”.

New issues arising for DUS examination

114. The TWV noted that the following issues that should be considered for further discussion at its forty-ninth session:

- use of photographs in the management of reference collections
- seeds Priming project (see paragraph 23 of this document)
- management of International nomenclature in UPOV Test Guidelines
- information requested in the Test Guidelines, Technical Questionnaire Section 4 in relation to the breeding scheme and to consider the possibility to not request information on parental lines.

Information and databases

(a) UPOV information databases

GENIE Database

115. The TWV considered document TWV/48/5.

116. The TWV noted the plan to provide the information for type of crop for each UPOV code in the GENIE database, as set out in document TWV/48/5, paragraph 8.

UPOV Code System

117. The TWV noted the amendments to UPOV codes.

118. The TWV agreed to check the new UPOV codes or new information added for existing UPOV codes, which were provided in Annex III to document TWV/48/5, and agreed to submit the comments to the Office of the Union by July 31, 2014.

119. The TWV received information from an expert from the European Union on a proposal for a development of UPOV codes to indicate different types within a species (e.g. Rootstock, mutation) and agreed to invite the expert from the European Union to make a proposal at its forty-ninth session.

PLUTO Database

120. The TWV noted the developments concerning the program for improvements to the Plant Variety Database, as reported in document TWV/48/5, paragraphs 17 to 33.

(b) *Variety description databases*

121. The TWV considered document TWV/48/6.

122. The TWV noted the developments on variety description databases, as set out in document TWV/48/6.

123. The TWV noted the proposal by the expert from Australia, not to develop a database for the TWC.

124. The TWV noted the matters raised by the ISF in relation to variety descriptions.

125. The TWV noted the conclusion of the CAJ on matters concerning variety descriptions, as set out in document TWV/48/6, paragraph 29.

126. The TWV noted the comments by the experts of ISF and ESA that variety descriptions should only be made available in cases of protected varieties, and access to information related to inbred or parental lines should not be made available to the general public.

(c) *Exchangeable software*

127. The TWV considered document TWV/48/7.

128. The TWV noted that document UPOV/INF/22 "Software and equipment used by members of the Union" would be presented for adoption by the Council at its forty-eighth ordinary session, to be held in Geneva on October 16, 2014, as set out in document TWV/48/7, paragraph 5.

129. The TWV noted that subject to adoption of document UPOV/INF/22 by the Council at its forty-eighth ordinary session, a circular would be issued to the designated persons of the members of the Union in the TC, inviting them to provide information regarding non-customized software and equipment used by members of the Union, as appropriate.

130. The TWV noted that a revision of document UPOV/INF/16/3 concerning the inclusion of the SIVAVE software would be presented for adoption by the Council at its forty-eighth ordinary session, to be held on October 16, 2014.

131. The TWV noted that Mexico had been invited to provide further information on the SISNAVA software at the thirty-second session of the TWC.

132. The TWV noted that the TC and CAJ agreed with the proposed revision of document UPOV/INF/16 concerning the inclusion of information on the use of software by members of the Union.

133. The TWV noted that an expert from France would make a presentation on the AIM software at the thirty second session of the TWC, based on the English translation of the software.

134. The TWV noted that the explanation of the software "Information System (IS) used for Test and Protection of Plant Varieties in the Russian Federation" was provided in the Annex of document TWV/48/7.

135. The TWV agreed that software currently used by UPOV members for examining characteristics using Image Analysis, should be mentioned in document UPOV/INF/22 "Software and equipment used by members of the Union", as appropriate.

(d) *Electronic application systems*

136. The TWV considered document TWV/48/8.

137. The TWV noted developments concerning the development of a prototype electronic form as set out in document TWV/48/8.

138. The TWV noted results of the survey of members of the Union on their use of databases for plant variety protection purposes and also on their use of electronic application systems, as presented in Annex II to document TWV/48/8.

Recommendations on draft Test Guidelines

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

139. The TWV agreed that the following draft Test Guidelines should be submitted to the TC for adoption at its fifty-first session, to be held in Geneva from March 23 to 25, 2015, on the basis of the following documents and the comments in this report:

Subject	Basic Document (2014)
Bottle Gourd, Calabash (<i>Lagenaria siceraria</i> (Molina) Standl.)	TG/LAGEN(proj.3)
*Brassicacae (Partial revision)	TWV/48/31
• Cauliflower (<i>Brassica oleracea</i> L. convar. <i>botrytis</i> (L.) Alef. var. <i>botrytis</i> L.)	TG/45/7
• Cabbage (<i>Brassica oleracea</i> L.)	TG/48/7
• Brussels Sprout (<i>Brassica oleracea</i> L. var. <i>gemmifera</i> DC.)	TG/54/7
• Kohlrabi (<i>Brassica oleracea</i> L. convar. <i>acephala</i> (DC.) Alef. var. <i>gongylodes</i> L.; <i>Brassica oleracea</i> L. <i>Gongylodes</i> Group)	TG/65/4
• Curly Kale (<i>Brassica oleracea</i> L. var. <i>sabellica</i> L.)	TG/105/4
• Calabrese, Sprouting Broccoli (<i>Brassica oleracea</i> L. convar. <i>botrytis</i> (L.) Alef. var. <i>cymosa</i> Duch. (including <i>Brassica oleracea</i> L. convar. <i>botrytis</i> (L.) Alef. var. <i>italica</i>))	TG/151/4
*Cassava (<i>Manihot esculenta</i> Crantz.)	TG/CASSAV(proj.5)
*Cucumber (Partial revision)	TG/61/7, TWV/48/32
<i>Cucurbita maxima</i> x <i>Cucurbita moschata</i>	TG/CUCUR_MMO(proj.2)
*French Bean (<i>Phaseolus vulgaris</i> L.) (Partial Revision)	TG/12/9 Rev., TWV/48/33
*Lentil (<i>Lens culinaris</i> Medik.) (Revision)	TG/210/2(proj.2)
*Shiitake (<i>Lentinula edodes</i> (Berk.) Pegler) (Partial revision)	TG/282/1, TWV/48/36
Spinach (<i>Spinacia oleracea</i> L.) (Partial revision: Characteristic and Ad. 18)	TG/55/7 Rev.2, TWV/48/37
Sweet Pepper, Hot Pepper, Paprika, Chili (<i>Capsicum annuum</i> L.) (Partial revision)	TG/76/8, TWV/48/38

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

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

Subject
Agaricus (<i>Agaricus</i> L.) (Revision)
*Basil (<i>Ocimum basilicum</i> L.) (Revision)
*Brown Mustard (<i>Brassica juncea</i> (L.) Czern.)
*Leaf Chicory (<i>Cichorium intybus</i> L. var. <i>foliosum</i> Hegi) (Revision)
*Lettuce (<i>Lactuca sativa</i> L.) (Revision)
Onion, Shallot (Partial revision: Characteristic 27)
Pepino (<i>Solanum muricatum</i>)
Radish, Black Radish (Partial revision: TQ and grouping characteristics)
Spinach (<i>Spinacia oleracea</i> L.) (Partial Revision: Characteristic 18)
Tomato Rootstocks (Partial Revision: disease resistance characteristics)
Turnip (<i>Brassica rapa</i> L. var. <i>rapa</i> L. (Revision)
Witloof Chicory (<i>Cichorium intybus</i> L. partim) (Revision)

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

Date and Place of the Next Session

142. At the invitation of the European Union, the TWV agreed to hold its forty-ninth session in Angers, France, from June 15 to 19, 2015, with the preparatory workshop on June 14, 2015.

Future program

143. 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) Exchangeable software (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. Uniformity assessment (document to be prepared by the Office of the Union)
9. Management of reference collections (document to be prepared by France and presentations invited from members of the Union)
10. New issues arising for DUS examination (presentations invited from members of the Union)
11. Use of disease resistance characteristics in DUS examination (document to be prepared by the European Union and presentations invited)
12. Matters to be resolved concerning Test Guidelines adopted by the Technical Committee (if appropriate)
13. Discussion on draft Test Guidelines (Subgroups)
14. Recommendations on draft Test Guidelines
15. Guidance for drafters of Test Guidelines
16. Date and place of the next session
17. Future program
18. Report on the session (if time permits)
19. Closing of the session

Visit

144. On the afternoon of June 26, 2014, the TWV visited the CRA-SCS Seed Testing and Certification Centre in Battipaglia, where it received a presentation by Mrs. Romana Bravi, Head of Battipaglia Office, CRA-SCS. A copy of the presentation is provided in Annex III of this document. The TWV visited DUS trials for tomato, melon, zucchini, cucumber and several other species. The TWV also visited the producers' cooperative Agris in Ebilo, near Battipaglia, where it was welcomed by Mr. Antonio Concilio, Production

Manager, and Mr. Marco Valerio del Grosso, Fields Technical Coordinator. The TWV visited fields the tomato and pepper organic production.

145. The TWV adopted this report at the close of the session.

[Annexes follow]

LIST OF PARTICIPANTS

I. MEMBERS

BRAZIL



Izabela MENDES CARVALHO (Mrs.), Federal Agricultural Inspector, National Plant Variety Protection Service (SNPC), Ministry of Agriculture, Livestock and Food Supply, Esplanada dos Ministérios, Bloco 'D', Anexo A, Sala 250, CEP70043-900 Brasília , D.F.
(tel.: +55 61 3218 2547/3349 7916 fax: +55 61 3224 2842
e-mail: izabela.carvalho@agricultura.gov.br)



Ricardo ZANATTA MACHADO, Federal Agricultural Inspector, National Plant Variety Protection Service (SNPC), Ministry of Agriculture, Livestock and Food Supply, Esplanada dos Ministérios, Bloco 'D', Anexo A, 2o andar, Sala 248, 70043-900 Brasília , D.F.
(tel.: +55 61 3218 2549 fax: +55 55 61 3218 2549
e-mail: ricardo.machado@agricultura.gov.br)

CANADA



Elizabeth PRENTICE-HUDSON (Mrs.), Examiner, Plant Breeders' Rights Office, Canadian Food Inspection Agency (CFIA), 59 Camelot Drive, Ottawa Ontario K1A 0Y9
(tel.: +1 613 773 7139 fax: +1 613 773 7115
e-mail: elizabeth.prentice-hudson@inspection.gc.ca)

CZECH REPUBLIC



Radmila SAFARIKOVA (Mrs.), Head of National Plant Variety Office, Central Institute for Supervising and Testing in Agriculture (UKZUZ), National Plant Variety Office, Hroznová 2, 656 06 Brno
(tel.: +420 737 267 268 fax: +420 543 212 440 e-mail: radmila.safarikova@ukzuz.cz)

EUROPEAN UNION



Sergio SEMON, Vegetable and Fruit Expert, Community Plant Variety Office (CPVO), 3, boulevard Maréchal Foch, CS 10121, 49101 Angers Cedex 02
(tel.: +33 241 256 434 fax: +33 241 256 410 e-mail: semon@cpvo.europa.eu)

FRANCE



Chrystelle JOUY MONDIERE (Mrs.), DUS Vegetable Species Expert, Groupe d'Étude et de contrôle des Variétés Et des Semences (GEVES), GEVES Cavailon, 4790 route des Vignères, F-84250 Le Thor
(tel.: +33 4 90 78 66 64 fax: +33 4 90 78 01 61 e-mail: chrystelle.jouy@geves.fr)



Stéphanie CHRISTIEN (Mrs.), Manager of DUS Studies, Groupe d'Étude et de contrôle des Variétés Et des Semences (GEVES), GEVES Brion, Domaine de la Boisselière, F-49250, Brion
(tel.: +33 2 41 57 23 22 fax: +33 2 41 57 46 19 e-mail: stephanie.christien@geves.fr)

GERMANY



Swenja TAMS (Mrs), Head of Section General affairs of DUS testing, Bundessortenamt, Osterfelddamm 80, D-30627 Hannover
(tel.: +49 511 9566 5607 fax: +49 511 9566 9600
e-mail: Swenja.Tams@bundessortenamt.de)

HUNGARY



Marianna FEHÉR (Ms.), DUS Expert, National Food Chain Safety Office (NÉBIH), Keleti K u 24, H-1024 Budapest
(tel.: +36 1 336 91 62 e-mail: feherm@nebih.gov.hu)

ITALY



Romana BRAVI (Mrs.), Head of Battipaglia Office, Agricultural Research Council - Centre for Seed Experimentation and Certification (CRA-SCS), Loc. Corno d'Oro, S.S. 18 Km 77.700, I-84091 Battipaglia
(tel.: 39 828 309 484 fax: 39 828 302382 e-mail: romana.bravi@entecra.it)



Loredana SIGILLO (Mrs.), Researcher, Agricultural Research Council - Centre for Seed Experimentation and Certification (CRA-SCS), Loc. Corno d'Oro, S.S. 18 Km 77.700, 84091 Battipaglia SA
(tel.: 39 828 309 484 fax: 39 828 302382 e-mail: loredana.sigillo@entecra.it)



Elisabetta Laura FRUSCIANTE (Mrs.), Researcher, Agricultural Research Council - Centre for Seed Experimentation and Certification (CRA-SCS), Loc. Corno d'Oro, S.S. 18 Km 77.700, I-84091 Battipaglia SA
(tel.: 39 828 309 484 fax: 39 828 302382 e-mail: elaura.frusciante@entecra.it)



Anna GIULINI (Mrs.), Researcher, Agricultural Research Council - Centre for Seed Experimentation and Certification (CRA-SCS), Via Ugo Bassi, 8, I-20159 Milano MI
(tel.: +39 026 901 2055 e-mail: annapiamaria.giulini@entecra.it)



Maria Carla NAPOLI (Mrs.), DUS vegetables expert, Agricultural Research Council - Centre for Seed Experimentation and Certification (CRA-SCS), Loc. Corno d'Oro, S.S. 18 Km 77.700, I-84091 Battipaglia SA
(tel.: 39 828 309 484 fax: 39 828 302382 e-mail: mariacarla.napoli@entecra.it)



Liliana BARRA (Mrs.), Technical Operator, Agricultural Research Council - Centre for Seed Experimentation and Certification (CRA-SCS), Loc. Corno d'Oro, S.S. 18 Km 77.700, I-84091 Battipaglia SA
(tel.: 39 828 309 484 fax: 39 828 302382 e-mail: liliana.barra@entecra.it)



Marco FAINA, Technical Collaborator, Agricultural Research Council - Centre for Seed Experimentation and Certification (CRA-SCS), Loc. Corno d'Oro, S.S. 18 Km 77.700, I-84091 Battipaglia SA
(tel.: 39 828 309 484 fax: 39 828 302382 e-mail: marco.faina@entecra.it)



Mauro CAGGIANO, Technical Operator, Agricultural Research Council - Centre for Seed Experimentation and Certification (CRA-SCS), Loc. Corno d'Oro, S.S. 18 Km 77.700, I-84091 Battipaglia SA
(tel.: 39 828 309 484 fax: 39 828 302382 e-mail: mauro.caggiano@entecra.it)

JAPAN



Yoshiyuki OHNO, Assistant Examiner, Plant Variety Protection Office, New Business and intellectual Property Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-ku, 100-8950 Tokyo
(tel.: +81 3 6738 6466 fax: +81 3 3502 6572 e-mail: yoshiyuki_ohno@nm.maff.go.jp)



Jun ARASEKI, Senior Staff, National Center for Seeds and Seedlings (NCSS), Unzen Station, 1494-35 Saigo-Bo, Mizuho-cho, Unzen-shi, Nagasaki 859-1211
(tel.: +81 957 77 2100 fax: +81 957 77 2154 e-mail: araseki@affrc.go.jp)

KENYA



Simon Mucheru MAINA, Head, Seed Certification and Plant Variety Protection, Kenya Plant Health Inspectorate Service (KEPHIS), P.O. Box 49592-00100, Nairobi
(tel.: +254-718-616-942/722-427-718 e-mail: smaina@kephis.org, smucheru@yahoo.com)

NETHERLANDS



Kees VAN ETTEKOVEN, Head of Variety Testing Department, Naktuinbouw, Sotaweg 22, NL-2371 GD Roelofarendsveen
(tel.: +31 71 332 6128 fax: +31 71 332 6565 e-mail: c.v.ettekoven@naktuinbouw.nl)



Marian A. VAN LEEUWEN (Mrs.), DUS Vegetable Crops Specialist, Naktuinbouw, Sotaweg 22, P.O. Box 40, NL-2370 AA Roelofarendsveen
(tel.: +31 71 332 6126 fax: +31 71 332 6363 e-mail: m.v.leeuwen@naktuinbouw.nl)



Amanda VAN DIJK (Mrs.), Specialist - DUS Vegetables, Naktuinbouw, Sotaweg 22, P.O. Box 40, NL-2370 AA Roelofarendsveen
(tel.: +31 71 332 6123 fax: +31 71 332 6363 e-mail: a.v.dijk@naktuinbouw.nl)

POLAND



Bogna KOWALCZYK (Mrs.), Head, DUS Testing Department, Research Centre for Cultivar Testing (COBORU), PL-63-022 Slupia Wielka
(tel.: +48 61 285 2341 fax: +48 61 285 3558 e-mail: b.kowalczyk@coboru.pl)



Malgorzata WLOSZCZYK (Mrs.), DUS Expert, Research Centre for Cultivar Testing (COBORU), PL-63-022 Slupia Wielka
(tel.: +48 61 285 2341 fax: +48 61 285 3558 e-mail: m.wloszczyk@coboru.pl)

REPUBLIC OF KOREA



Moo-Kyoung YOON, Director, Korea Seed and Variety Service (KSVS), 39, Taejang-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do
(tel.: +82 31 8008 0214 fax: +82 31 203 7431 e-mail: yoonmk@korea.kr)



Moo Youl LEE, Agricultural Researcher, Variety Testing Division, Korean Seed and Variety Service (KSVS), 456, Yepyong-ro, Sangnam-myun, Miryang-si, Gyeongsangnam-do
(tel.: + 82 55 352 9552 fax: + 82 55 353 2590 e-mail: methong@korea.kr)



Sang Don YUN, Agricultural Researcher, Korea Seed and Variety Service (KSVS), 39, Taejang-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do
(tel.: +82 31 8008 0214 fax: +82 31 203 7431 e-mail: yunsd@korea.kr)

ROMANIA



Florentina DUMITRU (Mrs.), Expert, State Institute for Variety Testing and Registration (ISTIS), Testing Centre Targoviste, Com Ulmi, jud. Dambovita, Targoviste
(tel.: +40 407 560 360 26 e-mail: targoviste@istis.ro)

SLOVAKIA



Bronislava BÁTOROVÁ (Mrs.), National Coordinator for the Cooperation of the Slovak Republic with UPOV/ Senior Officer, Head of DUS, Central Controlling and Testing Institute in Agriculture (ÚKSÚP), Akademická 4, SK-949 01 Nitra
(tel.: +421 37 655 1080/902 318 937 fax: +421 37 652 3086
e-mail: bronislava.batorova@uksup.sk)

SPAIN



David CALVACHE QUESADA, Director of DUS Testing, Instituto Nacional de Evaluación y Tecnología Agraria y Alimentaria (INIA), c/ Joaquín Ballester No. 39, E-46009 Valencia
(tel.: +34 96 307 9604 fax: +34 96 307 9602 e-mail: oevvval@hotmail.es)

UNITED KINGDOM



Tom CHRISTIE, Plant Variety Testing Manager, Science and Advice for Scottish Agriculture (SASA), Roddinglaw Road, Edinburgh EH12 9FJ
(tel.: +44 131 224 8961 fax: +44 1312448890 e-mail: tom.christie@sasa.gsi.gov.uk)

II. ORGANIZATIONS

CROPLIFE INTERNATIONAL



Marcel BRUINS, 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)

EUROPEAN SEED ASSOCIATION (ESA)



Bert SCHOLTE, Technical Director, European Seed Association (ESA), 23, rue Luxembourg, 1000 Brussels, Belgium
(tel.: +32 2 743 2860 fax: +32 2 743 2869 e-mail: bertscholte@euroseeds.org)



Maurizio BIANCHI, Expert in Vegetable Species, European Seed Association (ESA), La Semiorto Sementi, via Vecchia Lavorate 81/85 84087 Sarno (SA), Italy
(tel.: +39 81 94 3218 fax: +39 81 95 0688 e-mail: ricerca@semiorto.com)

INTERNATIONAL SEED FEDERATION (ISF)

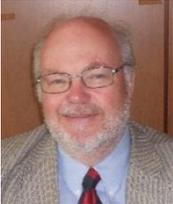


Astrid M. SCHENKEVELD (Mrs.), Specialist, Variety Registration & Protection, Rijk Zwaan Zaadteelt en Zaadhandel B.V., Burg. Crezéelaan 40, NL-2678 KX De Lier, The Netherlands
(tel.: +31 174 532 414 e-mail: a.schenkeveld@rijkszwaan.nl)

III. OFFICERS



Swenja TAMS (Mrs), Head of Section General affairs of DUS testing, Bundessortenamt, Osterfelddamm 80, D-30627 Hannover
(tel.: +49 511 9566 5607 fax: +49 511 9566 9600
e-mail: Swenja.Tams@bundessortenamt.de)



Kees VAN ETTEKOVEN, Head of Variety Testing Department, Naktuinbouw, Sotaweg 22, NL-2371 GD Roelofarendsveen
(tel.: +31 71 332 6128 fax: +31 71 332 6565 e-mail: c.v.ettekoven@naktuinbouw.nl)

IV. OFFICE OF UPOV



Ben RIVOIRE, Technical/Regional Officer (Africa, Arab Countries), 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: ben.rivoire@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)

[Annex II follows]

Council for Agricultural Research and experimentation -
Center for seed certification and experimentation (CRA-SCS)

**UPOV
TECHNICAL WORKING PARTY FOR
VEGETABLE**

**Forty-Eighth Session
Paestum, Italy, June 23 to 27, 2014**

**«PBR at glance in Italy»
PIER GIACOMO BIANCHI**

23 JUNE 2014

Council for Agricultural Research and experimentation -
Center for seed certification and experimentation (CRA-SCS)

Summary

- Italy & UPOV
- National legislation
- Role of the Organisations involved
- The role of CRA- SCS and others CRA- centres and organisations
- CRA-SCS & CPVO
- listing of varieties

Council for Agricultural Research and experimentation -
Center for seed certification and experimentation (CRA-SCS)

Italy & UPOV

Italy:

- is a Signatory State of the 1961 Convention, the 1972 and 1978 Acts, the 1991 Convention
- ratified the 1961 Convention and the additional Act of November 10, 1972 in July 1977
- adapted the national legislation to the 1991 Convention in 1998.

Council for Agricultural Research and experimentation -
Center for seed certification and experimentation (CRA-SCS)

As EU Member, in Italy is possible to protect a variety under the:

- National Plant breeders' right system

“or” under the:

- European Plant breeders' right system based on Regulation 2100/1994 and relative implementing measures

Council for Agricultural Research and experimentation -
Center for seed certification and experimentation (CRA-SCS)

Current national Legislation

Law n. 30 on the 10th of February 2005

“Industrial property codex”

as amended by law n. 131 on the 13th of August 2010

and

implementing decree n.33 on the 13th of January 2010

Council for Agricultural Research and experimentation -
Center for seed certification and experimentation (CRA-SCS)

National Legislation

National PBR as part of the

“Industrial property codex”

Chapter II Section VIII (the new varieties rights)

is based on UPOV 1991

Council for Agricultural Research and experimentation -
Center for seed certification and experimentation (CRA-SCS)

Listing DUS and VCU network



The map displays the geographical distribution of DUS (Distinctness, Uniformity, and Stability) and VCU (Value for Cultivation and Use) networks across Italy. A legend on the left side of the map identifies different types of centers: DUS centers (green circle), VCU centers (red circle), and other centers (blue circle). Numerous regional centers are labeled with their names and abbreviations, such as 'CRA-SCS' in various regions like Lombardia, Veneto, and Sicilia. The map also shows major cities and regional boundaries.

Council for Agricultural Research and experimentation -
Center for seed certification and experimentation (CRA-SCS)

More information on CRA-SCS activities on our web site

www.ense.it

Thank you for your attention

[Annex III follows]

CRA-SCS Seed Testing and Certification Centre




Presentation of CRA-SCS Battipaglia Office

Dr.ssa Romana Bravi

CRA-SCS Battipaglia (SA), Italy - 48° TWV 26/06/2014

CRA-SCS Brief history

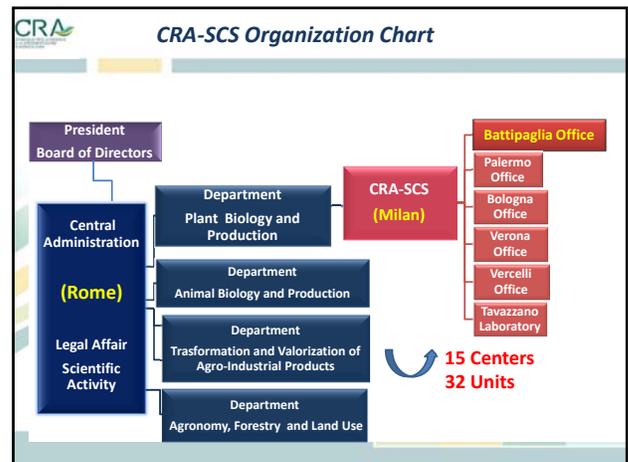


- **ENSE established in 1954**
Seed certification, research and experimentation, co-ordination and tests for new varieties (VCU and DUS tests), tests for plant breeders' rights (PBR), technical advises to the authorities.
- **ENSE merged with INRAN - National Research Institute on Food and Nutrition (2010)**
- **INRAN merged with CRA-Agriculture Research Council (2012)**
- **CRA-SCS Centre for seed Experimentation and Certification (2013)**

CRA Organization

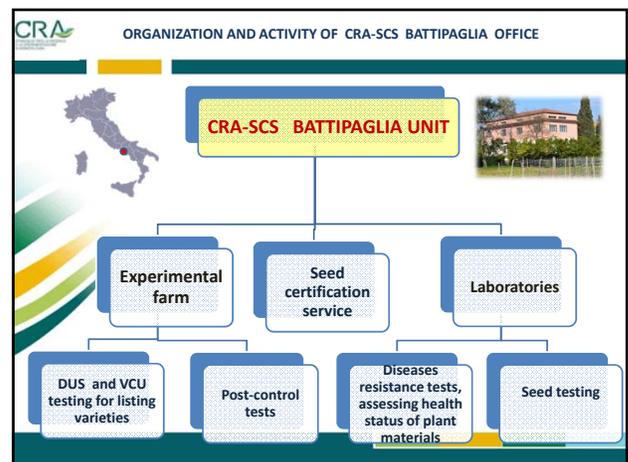
- **C.R.A. Agriculture Research Council** (under supervision of MiPAAF)
- Italy's fourth largest public agency for research and Italy's largest public agency operating in the field of agriculture
- Specializing in key scientific sector
- 15 Centres and 32 units with scientific expertise in the main agriculture supply chains

CRA-SCS
Centre for Seed Experimentation and Certification

CRA-SCS Organizational Structure

- ❖ **Head Office (Milano)**
- ❖ **4 Offices for seed certification** (Bologna, Vercelli, Battipaglia, Palermo)
- ❖ **5 Seed testing stations** (Tavazzano, Vercelli, Verona, Battipaglia, Palermo)
- ❖ **3 Phytopatology laboratories** (Verona, Battipaglia, Palermo)
- ❖ **3 Experimental Farms (28 ha)** (Battipaglia, Tavazzano, Palermo)

Seed Certification Service

Seed certification and control in the South Italy

- Agricultural and vegetables species
- Field inspections
- Seed sampling
- Seed testing
- Labelling
- Post control tests
- Official controls or under official supervision

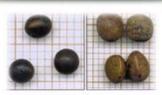


CRA-SCS Seed testing

• **Seed testing laboratory**

- ☐ Sampling
- ☐ Germination and purity analysis
- ☐ Other seeds
- ☐ National certificates






Phytopathological laboratory

Institutional activities, according to Italian legislation

- ❖ Seed health certification (seed potatoes)
- ❖ Phytosanitary certification on vegetable propagating and planting material, other than seed (Council Directive 92/33/EEC)
- ❖ Disease resistance evaluation in the framework of National listing Varieties of vegetables

Private analysis services (on vegetable species) to seed companies and farmers

- ❖ Phytosanitary seed certification
- ❖ Disease resistance evaluations
- ❖ Disease diagnoses
- ❖ Analyses on quarantine organisms under authorization by MIPAAF (Ministry of Agriculture) and Regional Phytosanitary Services

Phytopathological laboratory

Seed-borne diseases, resistance tests for vegetables

- Quarantine bacteria : *e.i Clavibacter michiganensis subsp. michiganensis* on tomato, *Fusarium oxysporum f. sp. lactucae* on lettuce
- Resistance tests: *Fusarium oxysporum*, *Verticillium dahliae*, *Meloydogyne incognita*, *BCMV, CMV*, Certification
- Seed certification severe and mild viruses on seed potatoes



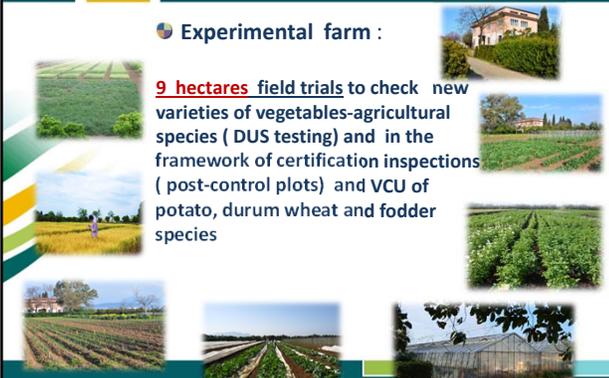
Quality management system according to UNI EN ISO 9001:2008 standard

Diagnostic services, research, projects

DUS & VCU Testing

• Experimental farm :

9 hectares field trials to check new varieties of vegetables-agricultural species (DUS testing) and in the framework of certification inspections (post-control plots) and VCU of potato, durum wheat and fodder species



DUS Testing

• **Experience in DUS testing for listing**

- ✓ Since 1980 for vegetables, potatoes, and since 1993 for fodder species, durum wheat.
- ✓ Every year, on average 150 candidates varieties are tested for national listing
- ✓ Morfological characterization of local varieties (conservation varieties) for regional research projects



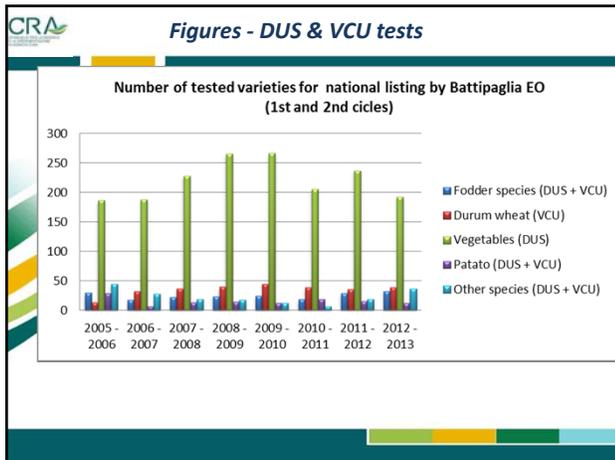
Other activities

- CPVO examination office (EO):
 - Vicia Narbonensis*
 - Cynara cardunculus L.* (in progress)
- Post control tests (vegetables,potato, durum wheat, mediterranean fodder species)
- EU comparative trials
- Research projects



CRA-SCS Battipaglia Activity - Figures 2013

- FIELD INSPECTION: 2.800 farms – 46.086 ha
- CERTIFIED SEED: 100.166 tons
- SEED COMPANIES: 113
- LAB SEED TESTING: 4627 samples tested (13.753 analysis)
- Phytopathological analysis : 1037
- LISTING & POST CONTROL : 2642 field plots
- DUS+VCU TESTS : number of vegetables and agricultural varieties : 315

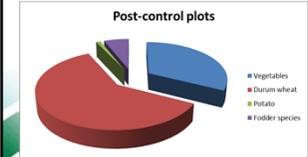



Number of varieties tested for national listing

Species	2005 - 2006	2006 - 2007	2007 - 2008	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013
Fodder species (DUS + VCU)	30	18	23	24	25	19	29	33
Durum wheat (VCU)	14	33	37	40	45	39	36	39
Vegetables (DUS)	187	189	228	266	267	206	238	193
Patato (DUS + VCU)	29	7	14	15	13	19	16	13
Other species (DUS + VCU)	45	28	19	18	13	7	19	37
Total	305	275	321	363	363	290	338	315

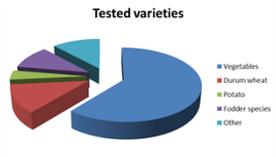
Tested varieties(DUS& VCU) and post control plots for categories of crops (2012-2013)

Post-control plots



Specie	Post control -2013
	n. samples
Fodder species	99 (6%)
Durum wheat	1006 (60%)
Vegetables	541 (33%)
Potato	18
Total	1664

Tested varieties

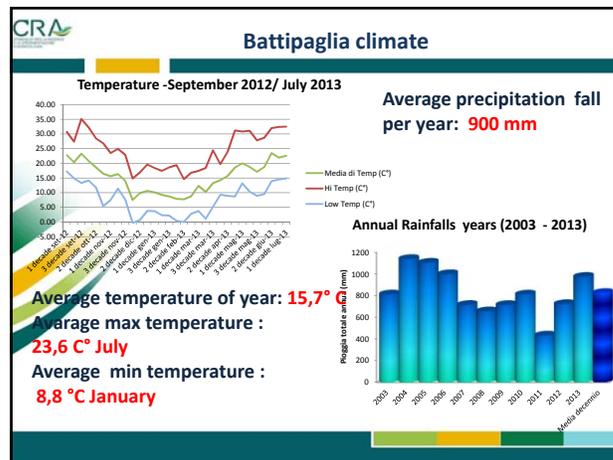
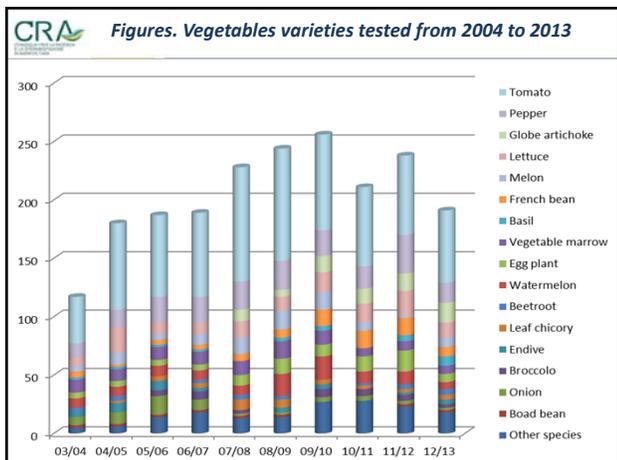


Specie	DUS & VCU - 2013
	n. varieties
Other species	37
Fodder species	33 (11%)
Durum Wheat	39 (12%)
Vegetables	193 (61%)
Potato	13
Total	315

Vegetables: number of tested varieties (DUS tests)

Specie/years	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Tomato	40	74	70	72	98	96	82	68	68	62
Onion	7	10	16	9	2	2	4	4	3	2
Broccolo	0	0	5	7	3	0	7	6	5	3
Endive	4	8	8	3	0	4	4	0	2	4
Leaf chicory	0	2	4	4	9	7	4	3	3	4
Beetroot	4	4	0	3	4	3	0	2	4	5
Watermelon	8	8	9	8	8	19	20	10	11	6
Egg plant	5	5	5	5	9	13	10	13	18	7
Marrow	11	10	11	11	12	15	12	7	8	7
Basil	2	2	2	2	0	3	4	0	5	8
French bean	5	2	4	4	6	7	14	15	15	8
Melon	5	10	5	9	14	16	15	7	2	8
Lettuce	7	22	10	10	14	12	17	16	21	13
Globe artichoke	0	0	0	0	10	6	14	13	15	17
Pepper	12	15	22	22	24	25	22	19	33	17
Other species	7	8	16	20	15	16	27	28	25	23
TOTAL	117	180	187	189	228	244	256	211	238	193





CRA

Thank you for the attention

web site: <http://www.ense.it> e-mail: scs.sa@entecra.it
 Tel + 039 0828 309484 Fax : + 039 0828302382
CRA-SCS Centre for Seed Experimentation and Certification
 Loc. Corno d'Oro, SS 18 Km 77.70 - 84091 Battipaglia (SA) - I

[Annex IV follows]

LIST OF LEADING EXPERTS

**DRAFT TEST GUIDELINES TO BE SUBMITTED
TO THE TECHNICAL COMMITTEE IN 2015**

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

before August 8, 2014

Species	Basic Document	Leading Expert(s)
Bottle Gourd, Calabash (<i>Lagenaria siceraria</i> (Molina) Standl.)	TG/LAGEN(proj.3)	Mrs. Chrystelle Jouy (FR)
*Brassica (Partial revision: male sterility) = <ul style="list-style-type: none"> • Cauliflower (<i>Brassica oleracea</i> L. convar. <i>botrytis</i> (L.) Alef. var. <i>botrytis</i> L.), • Cabbage (<i>Brassica oleracea</i> L.), • Brussels Sprout (<i>Brassica oleracea</i> L. var. <i>gemmifera</i> DC.), • Kohlrabi (<i>Brassica oleracea</i> L. convar. <i>acephala</i> (DC.) Alef. var. <i>gongylodes</i> L.; <i>Brassica oleracea</i> L. <i>Gongylodes</i> Group), • Curly Kale (<i>Brassica oleracea</i> L. var. <i>sabellica</i> L.), • Calabrese- Sprouting Broccoli (<i>Brassica oleracea</i> L. convar. <i>botrytis</i> (L.) Alef. var. <i>cymosa</i> Duch. (including <i>Brassica oleracea</i> L. convar. <i>botrytis</i> (L.) Alef. var. <i>italica</i>)) 	TWV/48/31 TG/45/7, TG/48/7, TG/54/7, TG/65/4, TG/105/4 TG/151/4	Mrs. Amanda van Dijk (NL)
*Cassava (<i>Manihot esculenta</i> Crantz.)	TG/CASSAV(proj.5)	Mr. Simeon Kibet (KE) / Mr. Fabricio Santana Santos (BR)
*Cucumber (Partial revision: Cucurbit yellow stunting disorder virus (CYSDV))	TG/61/7, TWV/48/32	Mr. David Calvache (ES)
<i>Cucurbita maxima</i> x <i>Cucurbita moschata</i>	TG/CUCUR_MMO(proj.2)	Mrs. Chrystelle Jouy (FR)
*French Bean (<i>Phaseolus vulgaris</i> L.) (Partial revision: format of disease resistance explanations)	TG/12/9 Rev., TWV/48/33	Mrs. Marian van Leeuwen (NL)
*Lentil (<i>Lens culinaris</i> Medik.) (Revision)	TG/210/2(proj.2)	Mrs. Stéphanie Christien (FR)
*Shiitake (<i>Lentinula edodes</i> (Berk.) Pegler) (Partial revision: plant material required)	TG/282/1, TWV/48/36	Mr. Yoshiuki Ohno (JP)
Spinach (<i>Spinacia oleracea</i> L.) (Partial revision: Characteristic and Ad. 18)	TG/55/7 Rev.2, TWV/48/37	Mrs. Marian van Leeuwen (NL)
Sweet Pepper, Hot Pepper, Paprika, Chili (<i>Capsicum annuum</i> L.) (Partial revision)	TG/76/8, TWV/48/38	Mrs. Chrystelle Jouy (FR)

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

New draft to be submitted to the Office of the Union
by May 1, 2015

**(Guideline date for Subgroup draft to be circulated by Leading Expert: March 6, 2015
Guideline date for comments to Leading Expert by Subgroup: April 3, 2015)**

Species	Basic Document	Leading Expert(s)	Interested Experts (State / Organization)
Agaricus (<i>Agaricus</i> L.) (Revision)	TG/259/1	Sergio Semon (QZ)	HU, JP, KR, ESA, ISF, Office
*Basil (<i>Ocimum basilicum</i> L.) (Revision)	TG/200/2(proj.1)	Mrs. Swenja Tams (DE)	ES, FR, HU, IT, JP, NL, QZ, ZA, CropLife, ESA, ISF, Office
*Brown Mustard (<i>Brassica juncea</i> (L.) Czern.)	TG/BRASS_JUN (proj.2)	Mr. Yoshiyuki Ohno (JP)	CA, CZ, DE, FR, KR, NL, PL, QZ, ZA, CropLife, ESA, ISF, Office
*Leaf Chicory (<i>Cichorium intybus</i> L. var. <i>foliosum</i> Hegi) (Revision)	TG/154/4(proj.2)	Mrs. Romana Bravi (IT)/ Mrs. Stéphanie Christien (FR)	NL, QZ, CropLife, ESA, ISF, Office
*Lettuce (<i>Lactuca sativa</i> L.) (Revision)	TG/13/11(proj.1)	Mrs. Amanda van Dijk (NL)	BR, CZ, DE, ES, FR, IT, JP, KR, MA, QZ, ZA, CropLife, ESA, ISF, Office
Onion, Shallot (Partial revision: Characteristic 27)	TG/46/7	Kees van Ettikoven (NL)	CZ, DE, ES, FR, GB, HU, IT, JP, KR, PL, QZ, SK, CropLife, ESA, ISF, Office
Pepino (<i>Solanum muricatum</i>)	NEW	Mr. Jun Araseki (JP)	FR, NL, NZ, CropLife, ESA, ISF, Office
Radish, Black Radish (Partial revision: TQ and grouping characteristics)	TG/63/7 - TG/64/7	Mrs. Swenja Tams (DE)	CZ, ES, JP, FR, GB, IT, KR, PL, QZ, CropLife, ESA, ISF, Office
Spinach (<i>Spinacia oleracea</i> L.) (Partial revision: Characteristic 18)	TG/55/7 Rev.2	Mrs. Marian van Leeuwen (NL)	DE, FR, QZ, CropLife, ESA, ISF, Office
Tomato Rootstocks (Partial Revision: disease resistance characteristics)	TG/294/1	Sergio Semon (QZ)	ES, FR, HU, NL, CropLife, ESA, ISF, Office
Turnip (<i>Brassica rapa</i> L. var. <i>rapa</i> L.) (Revision)	TG/37/10	Mrs. Stéphanie Christien (FR)	TWA, CA, CZ, DE, ES, GB, IT, JP, KR, NL, QZ, ZA, ESA, ISF, CropLife, Office
Witloof Chicory (<i>Cichorium intybus</i> L. partim) (Revision)	TG/173/4(proj.2)	Mrs. Stéphanie Christien (FR)	IT, NL, QZ, CropLife, ESA, ISF, Office

[End of Annex IV and of Report]