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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

Geneva

TECHNICAL WORKING PARTY FOR VEGETABLES

Forty-Seventh Session
Nagasaki, Japan, May 20 to 24, 2013

REPORT

prepared by the Office of the Union

1. The Technical Working Party for Vegetables (TWV) held its forty-seventh session in Nagasaki, Japan, from May 20 to 24, 2013. The list of participants is reproduced in Annex I to this report.

2. The TWV was welcomed by Mr. Junya Endo, Director, New Business and Intellectual Property Division, Food Industry Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF). A copy of the welcome address is provided in Annex II to this report.

3. The TWV received presentations on the plant variety protection (PVP) system in Japan by Mr. Kenji Numagachi, Senior Examiner, and on breeding activities developed by the National Agricultural and Food Research Organization (NARO) Institute of Vegetable and Tea Science (NIVTS) by Mr. Youichi Kawazu, Senior Researcher, Vegetable Breeding and Genome Division, NIVTS. Copies of the presentations are provided in Annexes III and IV to this report, respectively.

4. The session was opened by Mr. François Boulineau (France), Chairman of the TWV, who welcomed the participants and thanked Japan for hosting the TWV session.

Adoption of the Agenda

5. The TWV adopted the agenda as presented in document TWV/47/1 Rev.

Short Reports on Developments in Plant Variety Protection

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

6. The TWV noted the information on developments in plant variety protection from members and observers provided in document TWV/47/28 Prov. The TWV noted that reports submitted to the Office of the Union after May 14, 2013, would be included in the final version of document TWV/47/28.

(b) Reports on developments within UPOV

7. The TWV received a presentation from the Office of the Union on the latest developments within UPOV, a copy of which is provided in document TWV/47/27 Rev.

8. The TWV received a presentation from the Office of the Union on the results of the 2012 survey to seek views on the effectiveness of the Technical Working Parties, as requested by the TC at its forty-ninth session, a copy of which is provided in document TWV/47/27 Add.

Molecular Techniques

9. The TWV considered document TWV/47/2.

10. The TWV noted the program for the adoption of document TGP/15/1 "Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)".

11. The TWV noted the discussion on molecular techniques at the forty-ninth session of the TC.

12. The TWV noted that the TC had proposed to hold a coordinated meeting of the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT) with the International Organization for Standardization (ISO), the International Seed Testing Association (ISTA) and the Organisation for Economic Co-Operation and Development (OECD) and including breeders; and that if it was not possible to organize a coordinated meeting in 2014, a meeting of the BMT would be organized in the meantime.

13. The TWV agreed with the TC that there was a need to provide suitable 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.

14. The TWV received a presentation by an expert from the Netherlands on "Male sterility detection (in cabbage) using Molecular Techniques", and by an expert from France on "Molecular Techniques in DUS Testing in the Group for Study and Control of Varieties and Seeds (GEVES)", a copies of which are provided in document TWV/47/2 Add.

TGP documents

15. The TWV considered the TGP documents below on the basis of documents TWV/47/3 and TWV/47/3 Add.

16. The TWV noted the agreement of the TC and the CAJ to submit document TGP/15/1 "Guidance on the Use of Biochemical and Molecular Markers in the Examination of Distinctness, Uniformity and Stability (DUS)" for adoption by the Council, at its forty-seventh session, to be held on October 24, 2013.

17. The TWV noted the agreement of the TC and the CAJ to invite the Council to adopt document TGP/14/2 "Glossary of Terms Used in UPOV Documents" at its forty-seventh session, to be held on October 24, 2013, and noted that the Council would be invited to adopt document TGP/0/6, in order to reflect the adoption of documents TGP/15/1 and TGP/14/2. The TWV received a presentation, made by the Office of the Union, on the main changes and key features on TGP/14, proposed by the TC at its forty-ninth session in 2013.

18. The TWV noted the matters approved by the TC for future revision of documents TGP/7, TGP/8 and TGP/9, as set out below:

(a) TGP/7: Development of Test Guidelines

(i) *Coverage of Types of Varieties in Test Guidelines*
(ii) *Selection of Asterisked Characteristics*
(iii) *Standard References in the Technical Questionnaire*
(iv) *Applications for Varieties with Low Germination*
(v) *Procedure for the Development of Test Guidelines*
(vi) *Quantity of Plant Material Required*
(vii) *Minimum Quantity of Plant Material*
(viii) *Guidance on Number of Plants to be Examined (for Distinctness)*
(ix) *Guidance for Method of Observation*
(x) *Example Varieties*
(xi) *Providing Photographs with the Technical Questionnaire*

(xii) *Duration of Test*
(xiii) *Number of Plants Required for Description*

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

Part I: DUS Trial Design and Data Analysis

(i) *New Section 2: "Data to be recorded"*
(ii) *New Section: "Reduction of Size of Trials"*

Part II: Techniques Used in DUS Examination

(i) *Section 3: "The Combined-Over-Years Criteria for Distinctness (COYD)"*
(ii) *Section 3, Subsection 3.6: "Adapting COYD to special circumstances"*
(iii) *Section 4: "2x1% Method-Minimum Number of Degrees of Freedom for the 2x1% Method"*

(c) TGP/9: Examining Distinctness

(i) *Guidance on Number of Plants to be Examined (for Distinctness)*
(ii) *Providing Photographs with the Technical Questionnaire*

19. The TWV noted the agreement of the TC that a draft revision of document TGP/5 Section 10 "Notification of Additional Characteristics and States of Expression" be presented for consideration by the TC at its fiftieth session, subject to the conclusion of discussions on disclaimers on UPOV documents in the Consultative Committee.

20. The TWV also noted the matters for discussion on future revision of documents TGP/7, TGP/8 and TGP/14 that would be considered on basis of documents TWV/47/9 to TWV/47/21 and TWV/47/23.

21. The TWV noted the program for the development of TGP documents, as set out in the Annex to document TWV/47/3.

22. The TWV considered the TGP documents below on the basis of documents TWV/47/3 and TWV/47/3 Add. "Comments by the Technical Working Party for Ornamental Plants and Forest Trees on TGP documents".

TGP/7: Development of Test Guidelines

(i) Revision of document TGP/7: Additional Standard Wording for Growing Cycle for Tropical Species

23. The TWV noted the information provided in document TWV/47/9.

24. The TWV considered the proposed Additional Standard Wording (ASW) for growing cycle of tropical species and agreed with the proposed following wording and the modifications proposed by the Technical Working Party for Fruit Crops (TWF):

New (after (b)): ~~Tropical fruit species~~ Evergreen species with indeterminate growth

The growing cycle is considered to be the period ranging from the beginning of flowering of an individual flower or inflorescence, through active flowering and fruit development, and concluding with the harvesting of fruit.

(ii) Revision of document TGP/7: Source of Propagating Material

25. The TWV considered the proposed guidance on source of propagating material, as presented in Section IV "Guidance for drafting Test Guidelines" of the Annex to document TWV/47/10, which was presented by an expert from the European Union.

26. The TWV noted that the document provided useful information on the effects of the source of propagating material as a source of general guidance for drafters of Test Guidelines, for inclusion in document TGP/7, and requested the expert from the European Union, with the support of experts from France and the Netherlands, to prepare a condensed version of the wording to be presented to the TWV at its forty-eighth session in 2014.

27. The TWV agreed to request the addition of examples for vegetatively propagated vegetables.

(iii) Revision of document TGP/7: Indication of Growth Stage in Test Guidelines

28. The TWV considered document TWV/47/11 and considered that there was no need to amend the existing guidance in document TGP/7 with regard to the indication of the growth stage at which to observe characteristics in the Test Guidelines. The TWV noted that the existing guidance provided sufficient information and that the indication of growth stages in Test Guidelines should remain optional and be used where appropriate.

29. The TWV agreed with the Technical Working Parties for Ornamental Plants and Forest Trees (TWO) that the indication of growth stages in Test Guidelines should be used where appropriate, and should as far as possible use a harmonized, simple numbering, such as in the Test Guidelines for Potato (document TG/23/6) as illustrated below:

"8.3 Optimal Stage of Development for the Assessment of Characteristics

1 = bud stage
2 = flowering stage
3 = ripening stage of tubers
4 = after harvest"

(iv) Revision of document TGP/7: Providing Illustrations of Color in Test Guidelines

30. The TWV considered document TWV/47/12.

31. The TWV agreed with the proposal of the TWO at its forty-sixth session, and the TWF at its forty-fourth session, to include the following guidance in a future revision of document TGP/7, with the addition of the reference to "light intensity" of a color, in the last sentence:

"~~Particular caution is needed when considering the~~ It is generally not appropriate to use ~~of~~ illustrations of color, as such, in the Test Guidelines because the color in photographs can be affected by the technology of the camera, ~~and~~ the facilities used to display the photograph (including printer, computer and screen~~, etc.~~) and lighting conditions under which the photograph is taken. Furthermore, the expression of color may vary according to the environment in which the variety is grown. For example, a photograph of a "~~light~~ weak intensity" of anthocyanin coloration or of a "light intensity" of a color, provided by the Leading Expert in one UPOV member may not represent a "weak ~~light~~ intensity" of anthocyanin coloration or a "light intensity" of a color in another UPOV member."

(v) Revision of document TGP/7: Presence of Leading Expert at Technical Working Party Sessions

32. The TWV considered document TWV/47/13 and agreed with the proposed guidance, as amended by the TWF at its forty-fourth session, on the presence of a Leading Expert at a Technical Working Party session, for inclusion in a future revision of document TGP/7, section 2.2.5.3, as set out below:

"2.2.5.3 Requirements for draft Test Guidelines to be considered by the Technical Working Parties

"Unless otherwise agreed at the TWP session, or thereafter by the TWP Chairperson, the timetable for the consideration of draft Test Guidelines by the Technical Working Parties is as follows:

Action	Latest date before the TWP session
Circulation of Subgroup draft by Leading Expert:	14 weeks
Comments to be received from Subgroup:	10 weeks
Sending of draft to the Office by the Leading Expert:	6 weeks
Posting of draft on the website by the Office:	4 weeks

"In cases where *either* of the deadlines for circulation of the Subgroup draft or for the sending of the draft to the Office by the Leading Expert is not met, the Test Guidelines would be withdrawn from the TWP agenda and the Office would inform the TWP accordingly at the earliest opportunity (i.e. not later than 4 weeks before the TWP session). In those cases where draft Test Guidelines are withdrawn from the TWP agenda because of failure by the Leading Expert to meet the relevant dates, it would be possible for specific matters concerning those Test Guidelines to be discussed at the TWP session. However, to consider specific matters it would be necessary for a document to be provided to the Office at least 6 weeks before the TWP session.

"In order to be considered by a Technical Working Party, the Leading Expert of the draft Test Guidelines should be present at the session, unless a suitable alternative expert can be arranged to act as the Leading Expert sufficiently in advance of the session, or unless the Leading Expert is able to participate in an effective way by electronic means."

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*

33. The TWV considered document TWV/47/14.

34. The TWV proposed that experts from the European Union, France and the Netherlands help the drafter to develop further guidance on the proposed text to be included in TGP/8 part I: DUS Trial and Design and Data Analysis, New Section: Minimizing the Variation due to Different Observers, in a future revision of document TGP/8.

35. The TWV noted that the expert from the Netherlands would draft, in conjunction with other experts, a proposed text with regard to further guidance on PQ and QN/MG characteristics, to be circulated to the groups of experts of the other interested Technical Working Parties (TWPs).

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

36. The TWV considered document TWV/47/15.

37. The TWV noted that:

(a) the TC had requested the TWC to continue its work with the aim of developing recommendations to the TC concerning the proposals to address the bias in the present method of calculation of COYU, and that

(b) a document on possible proposals for improvements to COYU would be prepared for the TWC session in 2013.

(iii) Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, New Section 10: Minimum Number of Comparable Varieties for the Relative Variance Method

38. The TWV considered document TWV/47/16.

39. The TWV noted the comments made by the TWPs at their sessions in 2012 and the TC, at its forty-ninth session, held in 2013. The TWV agreed with the proposed amendments for revision of Section 10 of document TGP/8 and the new proposed guidance to specify the minimum number of comparable varieties in the relative variance method as set out in the Annex to document TWV/47/16.

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

40. The TWV considered document TWV/47/17.

41. The TWV noted that the TC had agreed to replace the proposed text for new Section 11 “Examining DUS in Bulk Samples” in the Annex to document TC/49/28 with guidance on the use of characteristics examined on the basis of bulk samples, in order to ensure that the characteristics fulfill the basic requirements for a characteristic.

42. The TWV agreed that Leading Experts of Test Guidelines could be requested to provide data from different years to demonstrate that the expression of the characteristic is “sufficiently consistent and repeatable in a particular environment”.

(v) 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/47/18.

44. The TWV considered the developments on a practical exercise with a common data set to produce variety descriptions of self-pollinated and/or vegetatively propagated varieties, in order to determine the aspects in common and divergence between methods, with a view to developing general guidance.

45. The TWV agreed that the COY method was working well for cross pollinated crops and highlighted the importance of developing guidance for producing variety descriptions for self-pollinated and/or vegetatively propagated varieties.

46. The TWV agreed with the value of a practical exercise and requested the development of guidance on data processing for the assessment of distinctness and for producing variety descriptions of vegetatively propagated crops.

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

47. The TWV considered document TWV/47/19.

48. The TWV noted the comments made by the TWPs at their sessions in 2012 and the TC-EDC in 2013, and considered the draft new Section on “Guidance for Data Analysis for Blind Randomized Trials.”

49. The TWV agreed that the drafter should further develop the guidance to include explanations that the origin of the material should not influence the final judgment and that the authorization of the breeder should be obtained for varieties that were the subject of an application, as well as certain parent lines.

(vii) Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, New Section: Examining characteristics using image analysis

50. The TWV considered document TWV/47/20.

51. The TWV noted the information on software and hardware used for image analysis, as set out in Annex I to document TWV/47/20.

52. The TWV noted that the AIM software for image analysis would be considered in document TWV/47/7 “Exchangeable software”.

53. The TWV noted that a draft of the new section “Examining Characteristics Using Image Analysis” for document TGP/8 would be presented to the TWC in 2013.

54. The TWV invited experts from Czech Republic, France, Germany, the Netherlands and the United Kingdom to make a presentation at its forty-eighth session, on the use of image analysis on pea, carrot, onion and parsley respectively. With regard to pea, the TWV agreed to receive presentations from the Czech Republic, France and the United Kingdom in order to compare the method used for image analysis in different UPOV members on the same crop.

(viii) Revision of document TGP/8: Part II: Selected Techniques Used in DUS Examination, New Section: Statistical methods for visually observed characteristics

55. The TWV considered document TWV/47/23.

56. The TWV noted that:

(a) the TC had agreed that it would not be appropriate to continue the development of a section on "Statistical Methods for Visually Observed Characteristics", unless new guidance was provided beyond the methods already provided in document TGP/8; and

(b) requested the TWC to clarify if it proposed to modify an existing method or provide a new additional method.

TGP/14: Glossary of Terms Used in UPOV Documents

(i) Revision of document TGP/14: Section 2: Botanical Terms, Subsection 3: Color, Definition of "Dot"

57. The TWV considered document TWV/47/21.

58. The TWV agreed with the proposal of the TWO at its forty-sixth session and the TWF at its forty-fourth session, that a"dot" was a small "spot" and that only the term "spot" should be used in the future, according to the guidance provided in document TGP/14: Section 2: Botanical Terms, Subsection 3: Color. The TWV agreed with the TWF proposal that the Test Guidelines should be revised whenever the use of these terms could cause confusion.

Variety denominations

59. The TWV considered document TWV/47/4.

60. The TWV noted the developments concerning the International Commission for the Nomenclature of Cultivated Plants of the International Union for Biological Sciences (IUBS Commission) and the International Society for Horticultural Science Commission for Nomenclature and Cultivar Registration (ISHS Commission), of relevance for UPOV.

61. The TWV noted the planned contribution from the Office of the Union to the Draft Joint Notice for publication in the *Hanburyana Journal* and the participation of UPOV in the IUBS Commission, to be held on July 19 and 20, 2013 in Beijing.

Uniformity assessment

(a) Assessing uniformity by off-types on the basis of more than one sample or sub-samples

62. The TWV considered document TWV/47/22 and noted that:

(a) the TWC had agreed that more detailed information and further analysis were needed in order to give guidance on consequences on the use of the different approaches presented in Annex I to IV of document TWV/47/22, and that France, Germany and the Netherlands would present one or more concrete situations in their countries and the statistical basis of their analysis for its next session;

(b) the TWC had agreed that the statistical basis for the acceptable number of off-types in the subsample of 20 plants used in the context of a sample size of 100 plants (situation D) would be assessed by experts from France and Germany; and

(c) with regard to the approach combining the results from two growing cycles, as set out in Annexes I and II of document TWV/47/22, Situation A and B, the TC had agreed that care would be needed when considering results that were very different in each of the growing cycles, such as when a type of off-type was observed at a high level in one growing cycle and was absent in another growing cycle.

63. The TWV noted that with regard to the situation B, as set out in Annex II of document TWV/47/22, the expert from France indicated that France was now considering each cycle to be independent and was no longer combining the results of two locations, therefore the reference to France and cauliflower was no longer appropriate and that the text should be amended as follows:

SITUATION B: TWO GROWING LOCATIONS IN THE SAME YEAR
Approach: Third growing cycle for inconsistent results A variety is considered uniform if it is within the uniformity standard in both of the growing locations. A variety is considered non-uniform if it fails to meet the uniformity standard in both of the growing locations. If the variety is within the uniformity standard in one growing location but is not within the uniformity standard in the other growing location, then Alternative (a) the trial is repeated at both locations for a second year; Alternative (b) the trial is repeated at the Leading station (location) (European Union(Cauliflower)) **Approach: Combining the results of two locations** ~~(France (Cauliflower))~~ A variety is considered uniform if it is within the uniformity standard in both locations. A variety is considered non-uniform if it fails to meet the uniformity standard in both locations. A variety is considered within the uniformity standard if the number of off-type plants or parts of plants does not exceed the allowed number of off-types for the combined sample (two locations).

64. The TWV agreed that the preferred approach, for the assessment of uniformity for vegetables, was to use the individual results rather than the combined results and requested the TWC to consider the following example when considering the different approaches:

Trial 1: 50 plants / 2 off-types → the variety is considered uniform
(based on a population standard of 1% and an acceptance probability of 95% from a sample of 36 to 82 plants)

Trial 2: 50 plants / 2 off-types → the variety is considered uniform
(based on a population standard of 1% and an acceptance probability of 95% from a sample of 36 to 82 plants)

Trial 1+2: 100 plants/ 4 off-types → the variety is considered non-uniform
(based on a population standard of 1% and an acceptance probability of 95% from a sample of 83 to 130 plants)

If the two trials are considered independent, the variety is considered to be uniform. If the two trials are combined, the variety is considered not uniform.

(b) Testing uniformity of apple varieties arising from mutation

65. The TWV considered document TWV/47/26.

66. The TWV noted the current practice for the assessment of uniformity and stability by off-types on the basis of two samples for apple varieties originating as mutations in New Zealand. It noted that the results from the two locations are not combined but treated as two separate samples. The TWV also noted the comment from the expert from New Zealand that “Consistency over two seasons in the same trial location is considered more important than consistency between two trial locations in the same year”. Finally, the TWV

highlighted the fact that, for fruit testing, the same plants are observed over two years, whilst in vegetable testing, different plants are observed each year.

Experiences with new types and species

67. No new experiences with new types and species were reported.

Discussion on draft Test Guidelines

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

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

Cover page	to check German alternative name
3.3.2	to be deleted
4.2	to delete headings (a), (b)
4.2.2	to read “The assessment of uniformity for cross pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction.”
4.2.3, 4.2.4	to delete “and parental lines”
5.3	to delete characteristic 2
Table of chars.	to check number (*)
Char. 1	to delete (a) and (+)
Char. 2	to be indicated as VG/MG to improve wording to delete example variety “Koganeizairai” from state 3
Char. 5	to be deleted
Char. 6	o provide example varieties or to delete characteristic
Char. 10	to be indicated as QN
Char. New (UA 1)	to be deleted
Char. New (UA 2)	to add (+) and explanation to provide example varieties or delete characteristic
Char. 11	to delete (c) to provide example varieties for state 9
Char.12	state 4 to read “clavate” state 5 to read “bottle shaped” to check whether to add an additional state
Char. 15	to read “Presence of neck” to be indicated as QN to have states absent or very weak (1), weak (3), medium (5), strong (7), very strong (9)
Char. 16	to be indicated as PQ to read “Fruit: shape of neck” to check example varieties to have states globose (1), fusiform (2), cylindrical (3)
Char. 17	to read “Fruit: length of neck in relation to the total length of the fruit” to have states very low (1) to very high (9)
Char. 18	to read “Fruit: diameter of the neck in relation to the diameter of the base”
Char. 20	to read “Fruit: intensity of main color” to provide example varieties
Char. 21	to be deleted
Char. 22	to add (*) to read “Fruit: number of speckles” to have states absent or very few (1), few (3), medium (5), many (7) to update example varieties

Char. NEW (NL-1)	to read “Fruit: size of speckles”
Char. 23	to check and update example varieties to check spelling of example variety for state 2: “Blue Mayo” or “Bule Mayo” to have states smooth (1), slightly verrucose (2), moderately verrucose (3), strongly verrucose (4), slightly corrugated (5), moderately corrugated (6), strongly corrugated (7)
Char. 24	to be deleted
Char. 25	to check spelling of example variety 5: “Mayo Giant Blue” or “Mayo Giant Bule”
Char. 26	to delete (+)
8.1	to delete note (a)
Ad. 1	to be deleted
Ad. 2	to be improved
Ad. NEW 6	to provide better illustrations
Ad. NEW (UA-1)	to be deleted
Ad. NEW (UA-2)	to provide illustration
Ad. 11	to add that observations are made 2 weeks after flowering
Ad. 12, 16	to delete definition of states according to TGP/14
Ad. 13	to indicate that observations are made at the time of full development of the fruit
Ad. 21	to be combined with Ad. 22
Ad. 26	to be deleted
TQ 5	to be updated
TQ 6	example to read “Fruit: length of neck” with states “long” and “very long”
TQ 7.1	to delete table
TQ 7.3 (b)	to delete all wording and table after the word “rootstock”
TQ 7.3 (c)	to delete “container, ornamental, musical instrument…”
TQ 4	to be revised according to example of the Test Guidelines for Radish
Ad. 26	to be deleted

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

69. The subgroup discussed document TG/BRASS_JUN(proj.1), presented by Mr. Yoshiyuki Ohno (Japan) and agreed the following:

1.	to delete “and its hybrids”
2.3	to check quantity to delete “for drilled plots”
3.4	to read “40 plants for single spaced plants and 300 plants for drilled plants” instead of “40 for vegetable and 300 for agricultural plants”
4.1.4	to read ”Unless otherwise indicated, for the purposes of distinctness, all observations on single plants should be made on 30 plants or parts taken from each of 30 plants and any other observations made on all plants in the test, disregarding any off-type plants.”
4.2.3	to be deleted
4.2.4	to check wording
6.5	to read “… (+) See Explanations on the Table of Characteristics in Chapter 8.1 00-89 Stage of development: see 8.2”
Table of Chars.	to add example varieties to consider whether to also add example varieties for agricultural varieties
Char. 1	to check whether to be observed not on harvested material, but at a later stage
Chars. 5, 17, 24	to check whether there is a correlation to check whether there is also a correlation with cotyledon
Char. 6	to read “Only for vegetable varieties: Leaf: type”
Char. 7	to check whether large scale only applies to vegetable varieties to check whether to reduce number of states if no example varieties are available

Char. 8	to add (+) and explanation to have notes 1, 3, 5
Chars. 9, 10	to delete wording in brackets and adapt illustrations accordingly
Char. 11	state 3 to read “short”
Char. 12	to read “Leaf: width of petiole” to have states narrow (3), medium (5), large (7) to add (+) and illustration
Char. 13	to check whether to move after char. 17 if linked to char. 17
Char. 14	to add explanation on terminal lobe to read: “Only varieties with leaf: type: type 1 or 2: Leaf blade: size of terminal lobe”
Char. 15	to delete MS to read “Only varieties with leaf: type: type 1 or 2: Leaf blade: density of lateral lobe”
Char. 16	to have states absent or very weak (1), weak (3), medium (5), strong (7)
Char. 18	to read “Only varieties with anthocyanin coloration: present: Leaf blade: intensity of anthocyanin coloration”
Char. 21	to add (+) and illustration
Char. 22	to check whether 9 notes are needed
Char. 23	to read “Only varieties with leaf: type: type 4: …”
Char. 25	to check whether to use this characteristic to distinguish vegetable and agricultural varieties to check how to implement this crucial element to distinguish vegetable from agricultural types in the Test Guidelines
Char. 26	to be indicated as MG to add (+) and explanation to move after char. 33
Char. 27	to read “Plant: head formation” to add (+) and explanation
Char. 28	to read “Plant: head height” and to move part in brackets at beginning of name of characteristic
Char. 29	to read “Plant: head diameter” and to move part in brackets at beginning of name of characteristic to have states small (1), medium (2), large (3)
Char. 30	to read “Plant: number of leaves on head” and to move part in brackets at beginning of name of characteristic
Char. 31	to read “Plant: color of inner side of head” and to move part in brackets at beginning of name of characteristic
Char. 32	to read “Plant: length of core of head” and to move part in brackets at beginning of name of characteristic to add (+) and explanation on core to have notes 3, 5, 7
Char. 33	to read “Plant: branching”
Char. 34	to be indicated as MG to add (+) and explanation
Chars. 35, 36	to be deleted
Char. 37	to add (+) and explanation on how to measure total length
Chars. 37, 38	to add (+) and to move text in first brackets to Chapter 8.1
Chars. 37 to 41	to move “(not for vegetable mustard)” to beginning of the name of the characteristics and to read “Only for agricultural varieties:…”
Ad. 2	to revise photos (state 3 not strong) or to delete Ad. 2
Ad. 7	to be presented in a grid and to change order of states according to grid (if applicable, see comment on char. 7)
Ad. 25	to delete drawings
8.2	to be checked (to have different stages for varieties with and without head?)

*Cassava (*Manihot esculenta *Crantz.)*

70. The subgroup discussed document TG/CASSAV(proj.4), presented by Mr. Ricardo Zanatta (Brazil) and agreed the following:

4.2.2	to delete “of clones”
4.3.2	to read “a new plant stock”
5.3	to add characteristics 16 and 27
Table of Chars.	general remark: to have two sets of example varieties (one for Kenya, one for Brazil)
Char. 1	to delete (+) and explanation of color in Ad. 1
Chars. 1, 4, 5, 9, 22	to check whether to split in two characteristics in order to separate anthocyanin coloration and intensity of green color (see TGs Ginseng, Yam) check example varieties
Char. 2	to add example variety “IAC 576-70 (BR)” for state 1 and “Taquara Amarela (BR)” for state 9
Char. 3	to read “Leaf: shape of central lobe”
Char. 4	to delete (+) and Ad. 4
Char. 6	to provide example varieties until TWA
Char. 9	to delete (+) and Ad. 9
Char. 10	to delete state 4 to add example varieties: state 1: Xingu (BR) state 2: IAC 576-70 (BR) state 3: BGMC 1117 (BR)
Char. 11	to delete (*) to delete example variety “Karibuni” from state 5
Char. 12	to add (*)
Char. 13	to provide example varieties until TWA
Char. 14	to be deleted
Char. 15	to check whether to read “Plant: branching” with states all along the stem (1), upper two thirds (2), upper third (3)
Char. 16	to add (*) to have “cream” as first state to add example varieties: state “cream”: BGMC 1426 (BR) state “light green”: EAB 182 (BR) state “dark green”: IAPAR 19 (BR) state “purplish”: Mandioca Batata (BR)
Char. 17	to read “Stem: color of bark” to add (+) and combine with Ad. 16 to move “orange” after “brownish yellow”
Char. 18	to read “Stem: color of internal surface of bark” to add (+) and combine with Ad. 16 to add example varieties: state 1: IAC 177-66 (BR) state 2: Taquara Amarela (BR) state 3: IAPAR 19 (BR) state 4: EAB 675 (BR) state 5: Mandioca Batata (BR)
Char. 20	to read “Stem: prominence of leaf scars” to add example varieties state 3: IAC 105-66 (BR) state 5: IAC 576-70 (BR) state 7: BGMC 117 (BR) to add (+) and combine with Ad. 21

Char. 21	to be indicated as VG/MS to check whether the leaf scars in line have the same number of leaf scars, otherwise add a new. char. “pattern of leaf scars” to add example varieties: state 3: Taquara Amarela (BR) state 5: IAC 576-70 (BR) state 7: EAB 321 (BR)
Char. 22	to delete (*) to add (+) and illustration
Char. 23	to check whether to read “peduncle”or “neck” to be indicated as QN to have states absent to short (1), medium (2), long (3)
Char. 24	to read “Root: color of epidermis” to add (+) and combined illustration for characteristics 24, 26 and 27 to check whether to add (*) to add example varieties: state 2: Taquara Amarela (BR) state 3: Mandioca Batata (BR)
Char. 25	to add (*) to add example variety “Mantiqueira (BR)” for state 2
Char. 26	to add (*) to add (+) and combined illustration for characteristics 24, 26 and 27 to ad example varieties: state 1: Branca de Santa Catarina (BR) state 2: IAC 576-70 (BR) state 3: Xingu (BR) state 4: EAB 182 (BR) state 5: Mandioca Batata (BR)
Char. 27	to add (*) to provide example varieties until TWA to add (+) and combined illustration for characteristics 24, 26 and 27
Char. 28	to delete state 4
Char. 29	to add example varieties to provide data over years
Char. 30	to check whether to be deleted or to check number of notes
new. char.	to check whether to add new char. “Root: content of starch in flesh”, if data over years can be provided, also provide methodology
Ad. 1	to be deleted
Ad. 2	to be improved
Ad. 3	to rotate photos by 90% to check states and photos of states 2 and 3
Ad. 4	to be deleted
Ad. 9	to be deleted
Ad. 11	to add indication/arrows where to be observed
Ad. 12	to replace photos by drawings or add arrows
Ad. 21	to be checked, see comment on char. 21
Ad. 23	to invert photos
Ad. 29	to move literature to Chapter 9
9.	to specify the last two references to check and add literature of Ad. 29
TQ 5	to be updated according to Chapter 5.3

*Chives (*Allium schoenoprasum *L.) (Revision)*

71. The subgroup discussed document TG/198/2(proj.2), presented by Mrs. Marian van Leeuwen (Netherlands) and agreed the following:

4.2	to read "4.2 Uniformity 4.2.1 It is of particular importance for users of these Test Guidelines to consult the General Introduction prior to making decisions regarding uniformity. However, the following points are provided for elaboration or emphasis in these Test Guidelines: 4.2.2 The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction. 4.2.3 The assessment of uniformity for hybrid varieties depends on the type of hybrid and should be according to the recommendations for hybrid varieties in the General Introduction."
5.3	to add characteristic 1 "Plant: height"
Table of Chars.	to check and add example varieties and to delete "Fitlau" throughout all the T.o.C
Char. 3	to delete "Polystar" in state 7
Char. 4	to add (*)
Char. 5	to read "Leaf: intensity of green color"
Char. 6	to provide example variety for state 3
Char. 12	to be indicated as MG
Char. 14	to delete (+) to add example variety "Jemná" for state 1
Char. 15	to be indicated as QN
Ad. 3	to add explanation/illustration
Ad. 6	to improve explanation or to add drawing with indications
Ad. 13	to delete picture and to read "observations should be made at the broadest part of fully flowering inflorescences"
9.	to add Brewster 1990 before Brewster 1994
TQ 4	to add 4.1 Breeding scheme to be revised to follow the example of the Test Guidelines for Radish
TQ 5	to add characteristic 5

*Cucumber (*Cucumis sativus *L.) (Partial revision)*

72. The subgroup discussed document TWV/47/29, presented by Mr. Raoul Haegens (Netherlands) and Mrs. Chrystelle Jouy (France) and agreed with the proposed revisions, subject to the following modifications:

5.3	to read (f) Resistance to *Cladosporium cucumerinum* (Ccu) (characteristic 44) (g) Resistance to *Cucumber mosaic virus* (CMV) (characteristic 45) (h) Resistance to Powdery mildew (*Podosphaera xanthii*) (Px) (characteristic 46) (i) Resistance to Corynespora blight and target leaf spot (*Corynespora cassiicola*) (Cca) (characteristic 48) (j) Resistance to *Cucumber vein yellowing virus* (CVYV) (characteristic 49)
Char. 44	to delete (*) example varieties to read: state 1: Frontera, Cherubino, Pepinex 69 state 9: Corona, Sheila, Marketmore 76
Char. 45	to delete (*) example varieties to read: state 1: Bosporus, Corona, Ventura state 2: Capra, Gardon, Verdon

Char. 46	to delete (*) example varieties to read: state 1: Corona, Ventura state 3: Aramon, Bella, Cordoba
Char. 47	to read “Resistance to Downy mildew (*Pseudoperonospora cubensis*) (Pcu)” to provide example variety for state 3 or to delete state 3 and to indicate characteristic as QL
Char. 48	to delete (*)
Char. 49	to delete (*) example varieties to read state 1: Corinda, Corona, Ventura state 9: Dina, Summerstar, Tornac
Char. 50	example varieties to read state 1: Corona, Hilton, Ventura state 9: Dina, Summerstar, Thunder
Ads. 44, 45, 46, 47, 48, 49, 50	to read “days post inoculation” instead of “dpi” (throughout all doc) to delete uncompleted/unused items and to add explanation as follows: “(unused items have been removed but numbering is kept according TGP/12)”
Ad. 44	3: to read “*Cucumis sativus* (cucumber or gherkin)” 5: to be provided 9.2: to be provided 9.8: to be deleted 11.2: to have states absent (1), present (9)
Ad. 45	3: to read “*Cucumis sativus* (cucumber or gherkin)” 9.3: to read Moderately resistant instead of Intermediate Resistant 10.3: to read “Cotyledons, e.g.: 8 and 11 days after sowing” 11.4: to add “maximum 1 out of 6-35 plants”
Ad. 46	1: to read “Powdery mildew *Podosphaera xanthii* (*Sphaerotheca fuliginea)”* 5: to be provided 9.3: to be provided 9.2: to read “Ventura, Corona (Susceptible) Flamingo (Moderately Resistant), Bella, Aramon, Cordoba (highly Resistant)” 10.6: to be deleted 10.7: to read “14 days post inoculation” 12: to read “QN [1] susceptible, [2] moderately resistant, [3] highly resistant” 13: intermediate = moderate
Ad. 47	title to read “Resistance to Downy mildew (*Pseudoperonospora cubensis*) (Pcu)” 3: to read *“Cucumis sativus* (cucumber or gherkin)” 4: to be provided 5: to be provided 9.2: to be provided 9.3: “Pepinex 69, SMR 58 (susceptible), Poinsett 76 (moderately resistant)” to be included in 6. 10.7: to be checked 11.2: to include listed varieties 12: to read “QN [1] susceptible, moderately resistant [2] and highly resistant [3]”
Ad. 48	5: to be provided 9.2: to be provided 9.3: to read “Bodega (absent); Corona, Cumlaude, (present) 10.5: to read “8 days post inoculation” 10.6 to be deleted 10.7: to read “8-11 days post inoculation” 11.2: example variety to be provided for state [1] 2 susceptible 12: to read “QL [1] 1-2, absent; [9] 3-4, present”
Ad. 49	4: to read “Naktuinbouw (NL)” 9.2: to be provided 9.3: to read “Corinda” instead of “Korinda” 11.2: to read “Corinda” instead of “Korinda” 11. 4: “maximum 1 out of 6-35 plants”

Ad. 50	4: to read “Naktuinbouw (NL)” 9.2: to be provided 12: to read “2 scale points difference with the most present type” 11.4: “max one out of 30 plants”
TQ 5	to add the following characteristics to Chapter TQ 5: with addition of non-tested option [ ] Resistance to *Cladosporium cucumerinum* (Ccu) (characteristic 44) Resistance to *Cucumber mosaic virus* (CMV) (characteristic 45) Resistance to Powdery mildew (*Podosphaera xanthii*) (Px) (characteristic 46) Resistance to *Corynespora* blight and target leaf spot (*Corynespora cassiicola*) (Cca) (characteristic 48) Resistance to *Cucumber vein yellowing virus* (CVYV) (characteristic 49)
TQ 7	to add the following characteristics to Chapter TQ 7: Resistance to Downy mildew (*Pseudoperonospora cubensis*) (Pcu) (characteristic 47) Resistance to *Zucchini yellow mosaic Virus* (ZYMV) (characteristic 50)
9.	To be updated

Cucurbita maxima x Cucurbita moschata *(including Rootstocks)*

73. The subgroup discussed document TG/CUCUR_MMO(proj.1), presented by Mrs. Chrystelle Jouy (France) and agreed the following:

Table on cover page	to delete wording in English and French columns
Cover page	Other associated documents to read “TG/155: *Cucurbita maxima* Duch. TG/234: *Cucurbita moschata* Duch.”
1.1	to delete second sentence
1.2	to be deleted
3.3.2	to be deleted
4.2	to delete headings
4.2.2	to be deleted
4.2.3	first paragraph to read “For the assessment of uniformity a population standard of 3 % 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 inbreds allowed would be 2.” to delete second paragraph
5.3	to be provided
Table of chars.	to check number (*)
Char. 1	to delete MS state 2 to read “broad elliptic”
Char. 2	to be indicated as VG/MS to provide example varieties to improve explanation
Char. 3	to delete MS
Char. 4	to read “Leaf blade: development of lobes” to have states absent or very weak (1), weak (2), medium(3), strong (4)
Char. 5	state 7: to replace example variety “Tetsukabuto” by “Zadok”
Char. 7	to be deleted
Char. 8	to be indicated as VG/MG
Char. 9	to be deleted
Char. NEW (ISF-1)	to provide example varieties
Char. NEW (ISF-2)	to provide example varieties to delete (+)

Char. NEW (ISF-3)	to provide example varieties
Char. 10	to provide example varieties to be indicated as VG/MG
Char. NEW (ES-1)	to provide example varieties to be indicated as VG/MG to have states small (3), medium (5), large (7)
Char. 11	to be indicated as PQ example varieties: state 1: to delete “Iron Cap” state 2: to add “Shintosa” state 3: to delete both example varieties
Char. 12	to provide example variety for sate 5
Char. 13	to provide example variety for sate 7
Char. 14	to have states very low (1) to very high (9)
Char. 16	to check example varieties
Char. 17	to provide example variety for state absent or to delete characteristic
Char. 18	to be deleted
Char. 20	to read “Fruit: type of surface” to be indicated as QN to have states smooth (1), weakly rough (2), moderately rough (3), strongly rough (4)
Char. 21	to be deleted
Char. 22	to check example varieties to delete state 3 to add example variety “Zadok” for state 2
Char. 23	to be indicated as PQ
Char. 24	to have states from very light (1) to very dark (9) to delete example varieties
Char. 25	to check whether blotch or speckle to add example variety “Kazako” for state 1
Char. 26	to delete (+) to check whether blotch or speckles
Char. NEW (FR-1)	to be deleted
Char. 27	state 1 to read “yellowish white” to provide example varieties
Char. 28	to check if characteristic relevant
Char. 29	to delete (b) and to add (c) to check if characteristic relevant
Char. 30	to check if characteristic relevant
8.1	to read “(a) Observations should be made on fully developed leaves, after the beginning of flowering (b) Observations should be made on fully developed fruit at full development. (c) Observations should be made on fully developed and dry seed, after washing and drying in the shade.”
Ads. 2, 4	to be improved
Ad. 26	to provide illustrations
9.	to be updated
TQ 1.2	to delete “Interspecific hybrids”
TQ 4.1.1	to delete the reference to identity of parents, to keep reference to the species of parent
TQ 4.2	to correct spelling of “hybrid” in title to simplify the requested information (to keep title only)
TQ 7.1	to delete all text except for Standard Wording
TQ 7.3 (b)	to delete all wording and table after the word “rootstock”

*Leaf Cichory (*Cichorium intybus *L. var.* foliosum *Hegi) (Revision)*

74. The subgroup discussed document TG/154/4(proj.2), presented by Mr. Pascal Coquin (France) and agreed the following:

2.2	to read "The material is to be supplied in the form of seed in the case of seed propagated varieties or plants in the case of vegetatively propagated varieties."
2.3	to read "…10.000 seeds in the case of seed propagated varieties or 120 plants of normal transplantation size in the case of vegetatively propagated varieties."
4.2	to add Chapter 4.2.4 for vegetatively propagated varieties (see TG/Leek)
4.2.2	to read "The assessment of uniformity for cross-pollinated varieties should be according to the recommendations for cross-pollinated varieties in the General Introduction."
4.3.2	to read "a new seed or plant stock" instead of "a new seed stock"
5.4	to check against Chapter TQ 5
Table 1	to add title "Growth Sub-Types" to check that table 1 corresponds to table of characteristics growth type "Chioggia": Char. 4 to read "Very short to medium (notes 1-5)" Char. 5 to read "Medium to broad (notes 5-7)" growth type "Verona": Char. 4 to read "Medium (note 5)" Char. 18 to read "Very early to very late (notes 1-9)" growth type "Variegata a palla": Char. 4 to read "Medium to large (notes 5-7)" Char. 18 to read "Early to late (notes 3-7)" growth type "Catalogna": Char. 5 to read "Narrow (note 3)" growth type "Pain de sucre / Pan di Zucchero": Char. 4 to read "Medium to long (notes 5-7)"
Char. 2	to be indicated as VG/MS
Char. 4	to be indicated as VG/MS to delete example variety "Zuccherina di Trieste" from state 1 to delete example variety "Palla rossa 2" from state 3
Char. 6	to be indicated as VG
Char. 8	to add example variety "Castelfranco 2" for state 9
Char. 9	to add example variety "Variegata di Lusia" for state 3
Char. 11	to be indicated as PQ to delete (+)
Char. 16	to check types of incisions
Char. 18	to be indicated as MG and QN to read "Time of Head formation" to delete example variety "TT506" from state 5
Char.19	to read "Head: density" state 3 to read "loose", state 7 to read "dense" to move example variety "Variegata di Chioggia"from state 5 to state 7
Char. 21	state 1: to correct spelling of example variety "A Grumolo Verde Scuro"
Char. 22	state 4 to read "oblate"
Char. 23	to be indicated as QN
Char. 24	to be indicated as PQ
Char. 26	to move example variety "Variegata di Castelfranco" from state 4 to state 3 to add example variety "Variegata di Chioggia"
Char. 27	to review and check whether to read "Plant: early formation of stems" to add (a) to delete (+)

Char. 28	to check whether to read “Stem: degree of fasciation” and make sure Char. 28 is linked to Char. 27
Char. 29	to have notes 1 and 2
Char. 30	to be indicated as MS/MG to add (+) and explanation
8.1	heading to read “Plant Growth Sub-Types (see Section 5.3)
8.1 (3)	to provide better photo for “Rossa di Treviso tardivo”
8.1 (5)	to correct name of photo on right hand side to “Variegata di Lusia” and remove reference from photo
8.2	to delete “All” from all notes last point under “Harvest maturity stage is specific to the plant growth types:” to add “(before forcing period)”
Ads. 4, 5, 6, 10, 16	to use photos of single leaves for each state
Ad. 7	to use definition of main color according to TGP/14
Ad. 11	to be deleted
Ad. 14	to improve photos
Ad. 22	to be presented in a grid
Ad. 24	to use color definition according to TGP/14
Ad. 27	to be deleted and to add note (a) to char. 27

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

75. The subgroup discussed document TG/210/2(proj.1), presented by Mr. Pascal Coquin (France) and agreed the following:

3.4.1	to keep 100 plants
5.3	to add characteristics 21, 26 and 27
Char.1	to be indicated as PQ
Table of Chars.	to add the indication when observation should be done (growth stage to be added in Chapter 8.1)
Char. 1	to be indicated as PQ
Char. 2	to be indicated as QN
Char. 4, 15, 18, 19	to move wording in brackets to a note in Chapter 8.1 (Explanations covering several characteristics)
Char. 6	to be indicated as PQ
Char. 7	to add (*)
Char. 12	to be indicated as PQ to delete example variety “Nigricans”
Char. 13	to add (*)
Char. 14	to be deleted
Char. 15	to read “Pod: color” to have states light green (1), medium green (2), dark green (3) to check whether to have notes 1 to 3 or 1 to 5
Char. 16	to be indicated as MG/VG to have states one (1), two (3), three (5)
Char. 17	to be deleted
Char. 19	to add (+) and illustration
Char. 20	to keep if example varieties can be provided if so, to be indicated as QN
Char. 21	to delete states 1 and 9
Char. 22	to read “Dry seed: height” to have states narrow elliptic (1), medium elliptic (2), broad elliptic (3) to be indicated as QN to add (+) and illustration
Char. 23	to be deleted
Char. 24	to delete state 5 to add (+) and definition of main color according to TGP/14

Char. 25	to add (*) to read “Dry seed: secondary color” to be indicated as PQ to add state (1) none
Char. 26	to be indicated as MG to add (+) and on weight of 100 seed
Char. 27	to add (+) and explanation to be indicated as MG to delete example variety “Nigricans”
Char. 28	to check whether to keep if so, to add (+) and definition of time of maturity
8.	to add Chapter 8.1 Explanations covering several characteristics and add information when observations should be made (leaf, flower, seed,…)
Ad. 25	to use illustrations from TGP/14 or photographs
9.	to add literature
TQ 4	to add 4.1 Breeding Scheme
TQ 5	to add characteristic 23
TQ 6	example to be added

Melon (Cucumis melo *L.) (Partial revision)*

76. The subgroup discussed document TWV/47/30, presented by Mrs. Chrystelle Jouy (France) and Mr. Raoul Haegens (Netherlands) and agreed with the proposed revisions, subject to the following modifications:

Cover page	paragraph 2 (b): Chapter 9 to complete
General	to review all example varieties for all characteristics and apply necessary changes between Chapter 7 and Chapter 8 (6., 9.3, 11.2)
Char. 69	to be indicated as QL for races 0,1 and 2 (69.1, 69.2 and 69.3) and as QN for race 1-2 (69.4), state 1 = susceptible
Char. 69.4	state 1 to read “susceptible”, example variety to read “Dinero”
Char. 70	to be indicated as QN for each races separately, and to have numbering 70.1 to 70.5
Char. 73	to clarify the proposal with state absent (1), present (9) (according to TGP/12)
Char. 74	to provide example variety for state absent, or to delete the characteristic
Ads. 69 – 76 General	to delete uncompleted/unused items, and to add explanation as follows: (unused items have been removed but numbering is according TGP/12) to check example varieties throughout all Ads. to read days post inoculation instead of “dpi” (throughout all Ads) to update example varieties accordingly in 6., 9.3, 11.2
Ad. 69.4	to delete remarks under item 9.1 observation scale (item 11.2) to be reworded
Ad. 70.1 to 70.3, Ad. 71	to provide clean and completed table under 6 8.1 and 9.4: to be reworded 9.7: to read “12 to 24 h darkness after inoculation”
Ad. 72	8.5: to clarify 10.2: to read “at least 10 adult wingless aphid per plant” 10.4: to delete “optional” 11.2: to be reworded
Ad. 73	5: to be clarified, to read “hypersensitivity” instead of “hypersusceptibility” 12: to be indicated as QL
Ad. 75	11.2: to read “Necrotic lesions on the inoculated organs, possible: systemic reaction, possible death of plant”
Ad. 76	5: to read “Use ‘common’ strains (e.g. TI, P9)” 10.4: to read “Inoculation by rubbing: After a few minutes, rinse the cotyledons with running water, when uses activated charcoal” 11.2: to be indicated as absent (1) present (9) 13: to be reworded
9.	to be completed

TQ 5	to be updated
TQ 7	to be updated

77. The subgroup agreed with the proposal to include characteristics for disease resistance as grouping characteristics as follows:

Proposed new wording: (Underlining (highlighted) indicates insertion)

(a) Inflorescence: sex expression (at full flowering) (characteristic 12)
(b) Fruit: shape in longitudinal section (characteristic 28)
(c) Fruit: ground color of skin (characteristic 29)
(d) Fruit: warts (characteristic 38)
(e) Fruit: grooves (characteristic 43)
(f) Fruit: cork formation (characteristic 48)
(g) Fruit: main color of flesh (characteristic 54)
(h) Seed: length (characteristic 60)
(i) Seed: color (characteristic 63)
(j) Resistance to *Fusarium oxysporum* f. sp. *melonis,* race 0 (characteristic 69.1)
(k) Resistance to *Fusarium oxysporum* f. sp. *melonis,* race 1 (characteristic 69.2)
(l) Resistance to *Fusarium oxysporum* f. sp. *melonis,* race 2 (characteristic 69.3)

78. The subgroup noted that the grouping characteristics for disease resistance coincided with those in the Community Plant Variety Office of the European Union (CPVO) protocol.

*Opium/Seed Poppy (*Papaver somniferum *L.) (Revision)*

79. The TWV considered document TWV/47/32 and noted that the TC, at its forty-ninth session held in Geneva from March 18 to 20, 2013, had agreed that the draft Test Guidelines for Opium/Seed Poppy (document TG/166/4 proj.4), on the basis of the recommendation of the TC-EDC, should be referred back to the TWV for further consideration of technical issues regarding characteristics 29 to 32 (see document TC/49/41 “Report on the conclusions”, paragraph 149).

80. The TWV considered the data provided by the Leading Expert and agreed that the data demonstrated that the expression of the characteristics was “sufficiently consistent and repeatable in a particular environment” to fulfill the basic requirement for a characteristic.

81. The TWV considered that characteristics 29 to 32 were useful for DUS, as indicated by the Leading Expert.

82. The TWV agreed to amend characteristics 29 to 32, as follows:

Chars. 29, 32	to review example varieties
Chars. 30, 31	to have notes 1 to 5, to review example varieties

*Pea (*Pisum sativum *L.) (Partial revision)*

83. The subgroup discussed the partial revision of the Test Guidelines for Pea on the basis of documents TG/7/10 and TWV/47/25 Add., presented by Mr. François Boulineau (France).

84. The subgroup agreed on the following grouping characteristics:

(a) Plant: anthocyanin coloration (characteristic 1)
(b) Stem: fasciation (characteristic 3)
(c) Stem: length (characteristic 4)
(d) Stem: number of nodes up to and including first fertile node (characteristic 5)
(e) Leaf: leaflets (characteristic 8)
(f) Stipule: flecking (characteristic 20)
(g) Only varieties with stem fasciation absent: Plant: maximum number of flowers per node (characteristic 25)
(h) Pod: length (characteristic 37)
(i) Pod: parchment (characteristic 39)

(j) Excluding varieties with pod parchment: entire: Pod: thickened wall (characteristic 40)
(k) Only varieties with Pod: thickened wall: absent: Pod: shape of distal part (characteristic 41)
(l) Pod: curvature (characteristic 42)
(m) Pod: color (characteristic 43)
(n) Immature seed: intensity of green color (characteristic 47)
(o) Seed: type of starch grains (characteristic 49)
(p) Seed: color of cotyledon (characteristic 52)
(q) Only varieties with plant anthocyanin coloration present: Seed: marbling of testa (characteristic 53)
(r) Only varieties with plant anthocyanin coloration present: Seed: violet or pink spots on testa (characteristic 54)
(s) Seed: hilum color (characteristic 55)
(t) Seed: weight (characteristic 57)
(u) Resistance to *Erysiphe pisi* Syd. (characteristic 59)
(v) Resistance to *Fusarium oxysporum* f. sp. *pisi* (characteristic 58.1)

85. The subgroup agreed, that characteristic 59 be added to Section 7 of the Technical Questionnaire, because this is not an asterisked characteristic (see document TGP/7 "Development of Test Guidelines, GN 13 (3.6)).

86. The subgroup agreed that the following characteristics identified as grouping characteristics also be added to Chapter TQ 5:

Fasciation (characteristic 3)
Stem: length (characteristic 4)
Pod: curvature (characteristic 42)

87. The subgroup agreed to replace the example variety "Iceberg" of characteristic 59 "Resistance to *Erysiphe pisi* Syd." by the following two example varieties, as proposed in document TWV/47/25 Add.:

Field Pea – "Stratford" maintainer UK1252
Pea – "Vivaldi" – maintainer DK52

88. The subgroup agreed that the Test Guidelines for Pea be submitted to the TC for adoption at its fiftieth session to be held in Geneva in April 2014, subject to approval of the proposed amendments by the TWA, at its forty-second session to be held in Kyiv, Ukraine, from June 17 to 21, 2013.

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

89. The subgroup discussed document TWV/47/31, presented by Mr. Raoul Haegens (Netherlands) and Mrs. Chrystelle Jouy (France), and agreed with the proposed revisions, subject to the following modifications:

Cover page, paragraph 2 (b)	Chapter 10 Technical questionnaire: Paragraph 5 to read "Characteristics of the variety to be indicated (the number in brackets refers to the corresponding characteristic in Test Guidelines"
Char. 48.1	state 1 to have example variety "Lamu"
Char. 48.2	state 1 to have example variety "Yolo Wonder" state 9 to have example varieties "Novi 3, Orion, Solario"
Char. 48.3	state 1 to have example variety "Yolo Wonder" state 9 to have example varieties "Cuby, Solario"
Char. 49.3	nomenclature to be checked state 9 to have example variety "Solario"
Char. 50	state 9 to have example varieties "Favolor, Solario"
Char. 51	state 9 to have example varieties "Alby, Favolor, Milord, Gadir, Vania"
Char. 52	to delete (*)
Char. 53	to check availability of listed example varieties, not to be kept as it is in the adopted TG
Ads. 48, 49, 50, 51, 52, 53	to read "days post inoculation" instead of "dpi" (throughout whole document) 11.4: to read "Maximum 1 on 20 plants" to update the list of example varietiesin 6., 9.3, 11.2

Ad. 48	1: to read “Tobamovirus (Tm) (the genus containing *Tobacco mosaic virus* (TMV), *Tomato mosaic virus* (ToMV), and *Pepper mild mottle virus* (PMMoV))” 9.2: to be provided 9.4: to read “to add blank treatment” 11.2: to update with listed example varieties, to check level of resistance and to have “state [1] absent, state [9] present” 13: to add strains to the table, example varieties to read: L0: Pepita, Lamu L1: Explorer, Lamuyo, Sonar, Yolo Wonder L2: *C. frutescens* ‘Tabasco’* (to copy text for * from previous protocol) L3: Ferrari, Novi 3, Orion, Solario L4: Friendly, Cuby, Tom 4
Ad. 49	2: to read “No” 9.2: to be provided 9.4: to read “to add blank treatment” 11.2: to have state [1] absent, state [9] present 13: to read “Avoid high temperatures (>30°C)”
Ad. 50	6: to be provided 9.2: to be provided 9.3: to read “Jupiter, Yolo Wonder (susceptible), Favolor, (MR) Solario, Phyo 636 (resistant)” and to be updated 12: to read “Based on the stem nectaries length increase compared to the standards” and to have states: [1] susceptible: Jupiter, Yolo Wonder [9] moderately Resistant: Favolor [9] resistant: Solario, Phyo 636
Ad. 51	5: to be completed with a new isolate 9.2: to be provided 9.3: to read “moderately resistant” instead of “IR” 10.3: to read “Cotyledon, before emergence of first leaf (12-13 days after sowing)” 10.7: to delete (*) 11.2: to read [1] susceptible: Yolo Wonder — many local lesion, mosaic [9] moderatley resistant: Milord — intermediate symptoms [9] resistant: Vania, Alby, Favolor — Few local lesions, No or light symptoms 13: to be deleted
Ad. 52	5. to read “e.g. LYE 51 or Br-01” 8.2: to read “Yolo Wonder or *N. benthamiana*, *N. rustica*” 8.3: to read “cotyledons fully developed / at “first leaf” pointed stage or 1- 3 leaves” 9.2: to be provided 10.6: to read “10-11 dpi to 15 - 21 days post inoculation” 10.7 to delete (*) 11.2: to have state [1] absent, state [9] present 13: to be checked (*Bremisia tabaci*) to indicate literature and add to Chapter 9; to read “Niemirowicz- Szczytt, K”
Ad. 53	title to read “<u>Resistance to *Xanthomonas campestris* pv. *vesicatoria* race 1, race 2, race 3”</u> 4: to be provided 5: to be provided 6: to be updated 9.2: to be provided 9.3: to be updated 9.6: to be checked 10.7 to delete (*) 11.2: to have state [1] absent, state [9] present

TQ 7	to add the following characteristics to Chapter TQ 7: with addition of non-tested option [ ] Resistance to *Potato Virus* Y (PVY) Pathotype 1 (characteristic 49.2) Resistance to *Potato Virus* Y (PVY) Pathotype 1-2 (characteristic 49.3) Resistance to *Phytophthora capsici* (characteristic 50) Resistance to *Cucumber mosaic virus* (CMV) (characteristic 51) Resistance to *Tomato spotted wilt virus*(TSWV) Pathotype P0 (characteristic 52) Resistance to *Xanthomonas campestris pv. vesicatoria* (characteristic 53)
9.	to be updated

90. The subgroup agreed to include characteristic 52 for Resistance to *Tomato spotted wilt virus* (TSWV) – Pathotype P0 as a grouping characteristic (chapter 5.3) and to be added to Section 7 of the Technical Questionnaire, because this is not an asterisked characteristic (see document TGP/7 "Development of Test Guidelines, GN 13(3.6)).

91. The subgroup noted that characteristic 52 for Resistance to *Tomato spotted wilt virus* (TSWV) – Pathotype P0 coincided with the characteristic included in the Chapter 7 of the Technical Questionnaire of the Community Plant Variety Office of the European Union (CPVO) protocol.

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

92. The subgroup discussed document TG/173/4(proj.1), presented by Mr. Pascal Coquin (France) and agreed the following:

Cover page name box	to check latin name, common names and UPOV code
1.	to check with cover page
2.3	to read "50g or 30.000 seeds"
4.1.4	to move the last two sentences to 8.1 and delete "All" in the beginning of these sentences
5.3	to add char. 9
Table of Chars.	to add indication of stage when to be observed (see notes Chapter 8.1)
Char. 1	to have states narrow elliptic (1), medium elliptic (2), broad elliptic (3) to add (+) and illustration
Char. 2	to check whether to have more states and to check the type of expression
Chars. 3, 4	to be indicated as QN
Char. 5	to be indicated as QN to check whether to delete or to add (+) and explanation
Char. 7	to be indicated as QN
Char. 8	to have states low (3), medium (5), high (7) to add (+) and to provide illustration according to TGP/ 14
Char. 9	state 1 to read "green", state 2 to read "red" to check order of colors according to TGP/14
Char. 10	to be indicated as QN to check whether only applies to green leaves or to green and red leaves
Char. 11	to be indicated as QN
Char. 14	to check whether anthocyanin coloration or red color
Char. 21	to add (+) and move explanation in brackets to Ad. 21 to correct spelling of "tendency"
Char. 22	to check how to measure the beginning of flowering to add MG
Char. 25	to add (+) and explanation to be indicated as VG
Char. 27	to be indicated as PQ
Char. 32	to add (+) and illustration in form of grid according to TGP/14 to be indicated as PQ
Char. 35	state 1 to read "yellow", state 2 to read "red"
Char. 36	to be indicated as QN
Char. 38	to add (+) and illustration

Char. 40	to be indicated as PQ
8.1	to delete “all” in all notes to add new note (a) for cotyledon (b) to read “Head: observations on the head should be done after a forcing period in a complete dark environment.”
Ad. 6, 7	to replace numbers of characteristics by “length” and “width” in illustration
Ad. 19	to delete underlining
Ad. 22	to check whether to indicate a precise percentage of open flowers or to read “Observations are made when the first flower opens. The time of beginning of flowering of a variety is the average of the dates recorded on the plants.”
Ad. 23	to improve photo and wording
Ad. 24	to be improved
9.	to add relevant literature
TQ 4	to add 4.1 Breeding Scheme
TQ 5	to have all grouping characteristics (see Chapter 5.3)

Correction of the Test Guidelines for Curly Kale

93. The TWV considered document TWV/47/33 and agreed with the proposal to correct the Test Guidelines for Curly Kale (document TG/90/6) as follows:

Char. 4	to have notes 1, 2, 3

Recommendations on draft Test Guidelines

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

94. The TWV agreed that the following draft Test Guidelines should be submitted to the TC for adoption at its fiftieth session, to be held in Geneva in April 2014, on the basis of the following documents and the comments in this report:

Subject	Basic Documents (2013)
Chives (*Allium schoenoprasum* L.) (Revision)	TG/198/2(proj.2)
Cucumber (*Cucumis sativus* L.) (Partial revision: disease resistance)	TG/61/7, TWV/47/29
Melon (*Cucumis melo* L.) (Partial revision: disease resistance)	TG/104/5, TWV/47/30
Sweet Pepper, Hot Pepper, Paprika, Chili (*Capsicum annuum* L.) (Partial revision: disease resistance)	TG/76/8, TWV/47/31
*Pea (*Pisum sativum* L.) (Partial revision: grouping characteristics)[1]	TG/7/10, TWV/47/25, TWV/47/25 Add.
*Opium/Seed Poppy (*Papaver somniferum* L.) (Revision)	TG/166/4(proj.4), TWV/47/32

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

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

Subject
Basil (*Ocimum basilicum* L.) (Revision)
Bottle Gourd, Calabash (*Lagenaria siceraria* (Molina) Standl.)
*Brassica (Partial revision: male sterility for all concerned subspecies)

[1] Subject to approval by the TWA at its forty-second session.

Subject
Brown Mustard (*Brassica juncea* (L.) Czern.)
*Cassava (*Manihot esculenta* Crantz.)
*Cucumber (Partial revision: Cucurbit yellow stunting disorder virus (CYSDV))
Cucurbita maxima x Cucurbita moschata
*French Bean (*Phaseolus vulgaris* L.) (Partial Revision: format of disease resistance explanations)
*Leaf Chicory (*Cichorium intybus* L. var. *foliosum* Hegi) (Revision)
*Lentil (*Lens culinaris* Medik.) (Revision)
Lettuce (*Lactuca sativa* L.) (Revision)
*Shiitake (*Lentinula edodes* (Berk.) Pegler) (Partial revision: plant material required)
Turnip (*Brassica rapa* L. var. *rapa* L. (Revision)
Witloof Chicory (*Cichorium intybus* L. partim) (Revision)

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

Guidance for drafters of Test Guidelines

97. The TWV considered document TWV/47/24.

98. The TWV noted the information provided in the TG Drafters' webpage of the UPOV website, including the Revised Practical Guide for Drafters (Leading Experts) of UPOV Test Guidelines.

99. The TWV noted:

(a) the plan for the development of a prototype web-based TG Template for testing by interested experts by the end of 2013;

(b) that the template would provide sufficient flexibility for drafters of Test Guidelines to introduce proposals that were not covered by existing standard wording and would retain flexibility in the structure for further development of Test Guidelines by UPOV members.

100. The TWV requested the Office of the Union to investigate the possibility of using a different way of sharing draft Test Guidelines between interested experts (e.g. SharePoint or restricted area on the TG Drafters' webpage of the UPOV website), as the size of the documents could be an issue when using regular email addresses.

101. The TWV agreed with the proposal of the TWO at its forty-sixth session and the TWF at its forty-fourth session, to receive a demonstration during the Preparatory Workshop on how to use the TG Template available on UPOV website, and to include a template for a grid for shape and ratio in the future web-based TG Template that leading experts might use when drafting Test Guidelines.

102. The TWV noted the file "Summary information on quantity of plant material required on adopted Test Guidelines" available on the TG Drafters' webpage of the UPOV website.

103. The TWV agreed that the previous versions of adopted Test Guidelines should be made available on the TG Drafters' webpage of the UPOV website, including a cover page and a disclaimer as mentioned by the TC at its forty-ninth session (see document "Report on the Conclusions" TC/49/41 paragraph 156).

Information and databases

(a) UPOV information databases

104. The TWV considered document TWV/47/5.

105. The TWV agreed to check the amendments to UPOV codes and the new UPOV codes or new information added for existing UPOV codes by July 31, 2013.

106. The TWV noted the developments concerning the program for improvements to the Plant Variety Database since the forty-sixth session of the TWV.

107. The TWV noted that an introduction to the PLUTO database would be included in the Preparatory Workshop of future TWP sessions.

108. The TWV noted the plans of the Office of the Union to conduct a survey of members of the Union on their use of databases for plant variety protection purposes and on their use of electronic application systems.

(b) Variety description databases

109. The TWV considered documents TWV/47/6 and TWV/47/25.

110. The TWV noted the report on the Pea Database study as presented in document TWV/47/25.

111. The TWV noted the approach for managing variety collections of pea as presented in the Annex to document TWV/47/25.

112. The TWV requested the expert from France to make a presentation, at its forty-eighth session, on the GEMMA software being used by the Group for Study and Control of Varieties and Seeds (GEVES) in a CPVO R&D project. This software is seen as being adapted for the development of such a common database.

(c) Exchangeable software

113. The TWV considered document TWV/47/7.

114. The TWV noted that the TC had concluded that the title of document UPOV/INF/16 “Exchangeable Software” and Section 1 “Requirements for exchangeable software” should remain unchanged, but that it would be useful to develop a separate information document that would allow members of the Union to provide information on the use of non-customized software and equipment that was used by members of the Union.

115. The TWV noted that the TC had:

(a) agreed with the inclusion of “Information System (IS) used for Test and Protection of Plant Varieties in the Russian Federation” and the AIM software from France in document UPOV/INF/16;

(b) requested the Office of the Union to investigate the possibility of the translation of “Information System (IS) used for Test and Protection of Plant Varieties in the Russian Federation” into English on the basis that the Russian Federation would verify the translation provided by the Office of the Union; and

(c) requested the Office of the Union to translate the AIM software to English on the basis that France would verify the translation provided by the Office of the Union.

116. The TWV noted that the TC had agreed with inclusion of the information contained in the Annex II to document TWV/47/7 for a revision of document UPOV/INF/16 by the Council at its forty-seventh session, to be held in Geneva on October 24, 2013.

117. The TWV noted that the TWC would be invited to consider the software proposed by Mexico for inclusion in document UPOV/INF/6 “Exchangeable software”, as presented in Annex III to document TWV/47/7, at its thirty-first session, to be held in Seoul, from June 4 to 7, 2013.

(d) Electronic application systems

118. The TWV considered document TWV/47/8.

119. The TWV noted the developments concerning a prototype electronic form.

Date and Place of the Next Session

120. At the invitation of Italy, the TWV agreed to hold its forty-eighth session in Paestum, Italy, from June 23 to 27, 2014, with the preparatory workshop on June 22, 2014.

Chairperson

121. The TWV agreed to propose to the TC that it recommend to the Council to elect Mrs. Swenja Tams (Germany), as the next chairperson of the TWV.

Matters for future consideration

122. The TWV proposed that suitable agenda items to be added to the program at its forty-eighth session, under which the following items would be presented and discussed:

(a) Presentation on the use of molecular techniques in DUS examination (document to be prepared by the Netherlands and presentations invited from members of the Union)
(b) Presentation on the use of statistical approaches in DUS examination (document to be prepared by the Netherlands and presentations invited from members of the Union)
(c) Presentation on the use of disease resistance characteristics in DUS examination (document to be prepared by the European Union and presentations invited from members of the Union)
(d) Management of reference collections (document to be prepared by France and presentations invited from members of the Union)
(e) New issues arising for DUS examination (presentations invited from members of the Union)

Future program

123. 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 (document to be prepared by the Netherlands and presentations invited from members of the Union)
5. TGP documents
6. Presentation on the use of statistical approaches in DUS examination (document to be prepared by the Netherlands and presentations invited from members of the Union)
7. Variety denominations (document to be prepared by the Office of the Union)
8. 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 (documents to be prepared by the Office of the Union)
   (d) Electronic application systems (document to be prepared by the Office of the Union)
9. Uniformity assessment
10. Presentation on the use of disease resistance characteristics in DUS examination (document to be prepared by the European Union and presentations invited from members of the Union)

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

Visit

124. On the afternoon of May 22, 2013, the TWV visited the Unzen Station of the National Center for Seeds and Seedlings (NCSS), where the TWV was welcomed by Mr. Sanji Takemori, President of NCSS, and Mr. Kunio Tokunaga, Director General of the Unzen Station. The TWV received a presentation on NCSS and the Unzen Station by Mr. Kazuto Higasimura, a copy of which is provided in Annex V to this report. At the facilities of Unzen Station the TWV visited DUS growing trials for several vegetable crops including tomato, lettuce, pumpkin, garlic, bitter gourd and bottle gourd.

125. The TWV adopted this report at the end of its session.

[Annexes follow]

TWV/47/34

ANNEX I

LIST OF PARTICIPANTS

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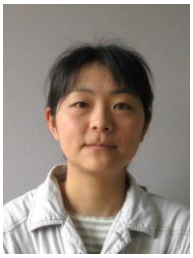

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François BOULINEAU, Chairman

V. OFFICE OF UPOV

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[Annex II follows]

ANNEX II

Welcome Address by Mr. Junya Endo, Director, New Business and Intellectual Property Division, Food Industry Affairs Bureau, Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF)

Thank you, Chair.

I am Junya Endo, the Director of the New Business and Intellectual Property Division of the Ministry of Agriculture, Forestry and Fisheries. It is my great honor to make a remark, on behalf of Japanese government, for the opening of the 47th Session of the Technical Working Party for Vegetables (TWV).

First of all, I would like to express my hearty welcome to Japan, to all the participants to the TWV Session. It's a great pleasure to welcome 29 experts of vegetables from 22 organization and countries, here to the City of Nagasaki. And I would like to express my sincere thanks to the UPOV Secretariat for providing assistance to our staff for the preparation for this Session.

I attended the Council meeting held in Geneva in the last March and met many colleagues. UPOV welcomed the 71st member State, and that more than 10,000 plant breeders' rights were granted in 2011. The work of the Technical Working Parties has also made a significant progress, and up to now, UPOV members have developed internationally-harmonized Test Guidelines 295 plants.

In addition, we have also observed a rapid progress in cooperation among UPOV member States and in support programs to prospective members of the Union. Currently, examination cooperation is in place between examination authorities with respect to more than 1,900 varieties, and such efforts are further growing. Also, if we are to focus only on here, the Asian region, various cooperative activities and technical assistance programs are conducted under the East-Asia PVP Forum with the participation of 10 members of ASEAN and 3 countries, China, Republic of Korea and Japan for a harmonized PVP system in the region as a whole.

In the face of rapid growth of global population, environmental changes and diversification of markets, it would be of a greater emergence to promote the breeding of elite varieties with specific characteristics regarding yield potential, resistance to biotic and abiotic stresses and marketability, and to enhance the PVP system as its prerequisite.

In addition, efforts should be accelerated also for the development of internationally-harmonized test guidelines. In light of diversification of cultivated plants, developments in breeding techniques and globalization of seed industry, internationally-harmonized TGs should cover a wider range of plant species.

With all those in mind, I recognize the work of the experts here for the development of internationally-harmonized TGs as truly important as the basis for tackling contemporary global issues. Our Ministry would be willing to reinforce our support to those important efforts of UPOV TWPs.

So, I would like to take this opportunity to present briefly on our latest efforts on PVP. Japan joined the Union in 1982 as its 16th member State, and acceded to 1991 Act in 1998. During the 30 years since the first accession to UPOV, the annual number of applications has increased consistently, and recently exceeds 1,000 every year with its peak of more than 1,400 in 2007. At the same time, we have made efforts for shortening the examination period through reinforcement of capacity for examination and enhancement of efficiency of the conduct of examination.

As some of our national TGs were developed in the beginning of our PVP system they are not well harmonized to UPOV TGs. In order to promote international harmonization in examination and to provide the basis for cooperation with other members of the Union, our PVP Office is conducting the review and revision of our national test guidelines in accordance with UPOV Test Guidelines. We revised 36 TGs in 2012.

Well, during this session, you are invited to a reception party hosted by our Ministry tomorrow evening, although I unfortunately will not be able to attend. And in the Wednesday afternoon, we will be having a technical visit to the UNZEN Station of NCSS, to present to you on-site the DUS tests in Japan. Apart from the technical discussion, these will be a nice opportunity for you to experience Japanese vegetables, culture and foods, and I hope you enjoy them.

Finally, I would like to finish my opening remark, hoping the 47th Session of the TWV will be a success and be fruitful in further promoting international harmonization in PVP examination.

Thank you for your attention.

[Annex III follows]

The Plant Variety Protection System in Japan

UPOV - Technical Working Party for Vegetables (TWV/47)
May 20 to May 25, 2013 (*Nagasaki, Japan*)

PVP Office, New business & Intellectual Property Division Food Industry Affairs Bureau
Ministry of Agriculture, Forestry and Fisheries

Contents

History of PVP System in Japan

UPOV Convention

1961 Adopted
(Entry into force in 1968)

1972 Amendment

1978 Amendment
(Entry into force in 1981)

1991 Amendment
(Entry into force in 1998)

1978 "Plant Variety Protection and Seed Act"

1982 Accession to the UPOV Convention (Act of 1978)

1998 Full-Amendment on "Plant Variety Protection and Seed Act" ("The Act")
Accession to Act of 1991

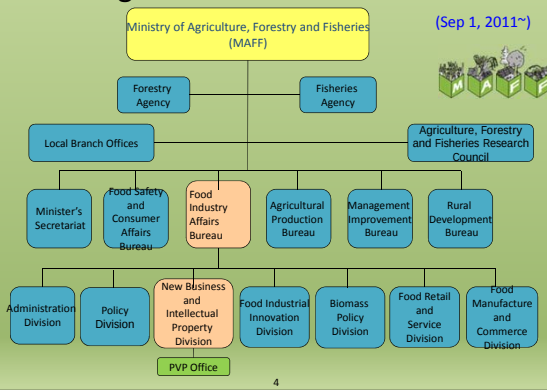
2003 Amendment on "The Act"
-Expanded coverage of penal provisions to harvested material

2005 Amendment on "The Act"
-Expanded scope of PBR products made directly from harvested material

2007 Amendment on "The Act"
-Strengthened penal provisions etc.

Organizational Chart of MAFF

(Sep 1, 2011~)



Organization for PVP

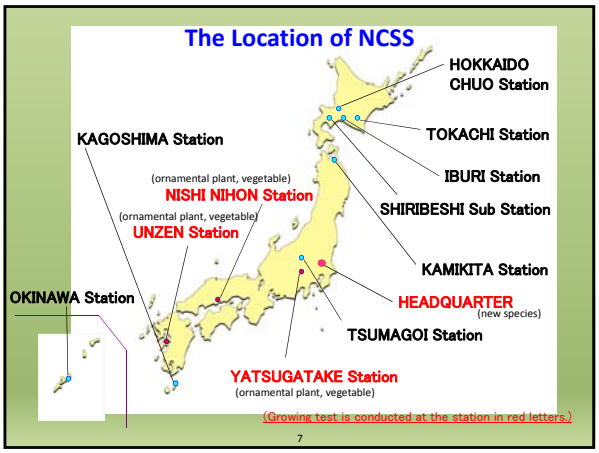
MAFF
PVP Office
- ✓Filing and granting
- ✓Establishment of
- ✓Test Guidelines
- ✓Examination etc.

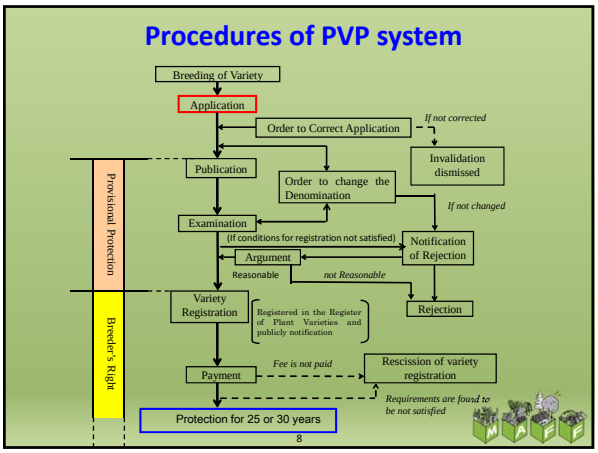
National Center for Seeds and Seedlings (NCSS) : Incorporated Administrative Agency

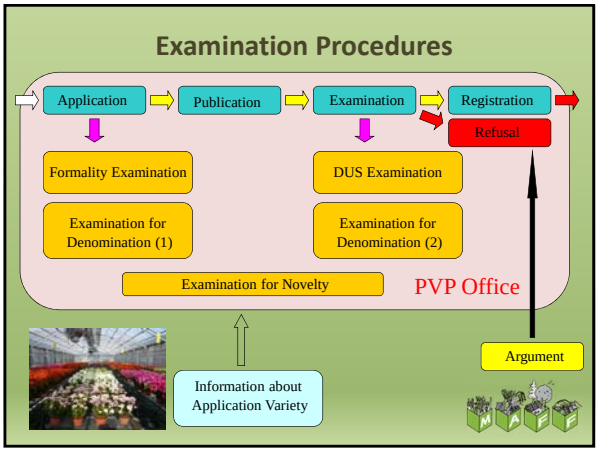
HQs, 11 stations, 1 sub-station
- ✓ DUS Test
- ✓ Production of Foundation seeds
- ✓ Seed Inspection
- ✓ PVP G-men
- ✓ Gene bank

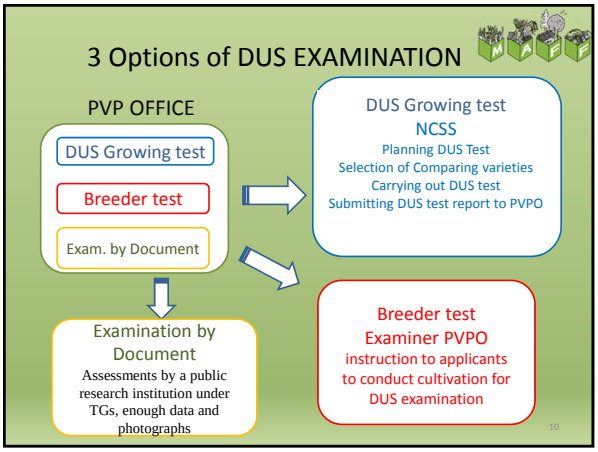
Structure of PVP Office

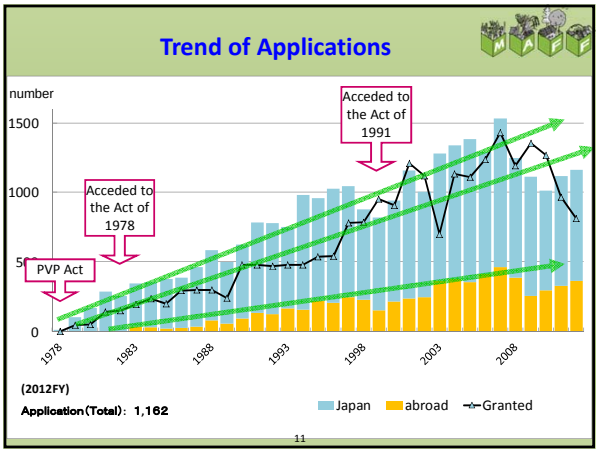
Director
- Deputy Director (1) section chief(2)
- Chief Examiner(1)
- Examiner(25)
- Assistant Examiner(7)
  - ◆ Management of Examination
  - ◆ Establishment of TGs
  - ◆ Filing, Formality Examination, Registration, Publication
  - ◆ Examination Group
    - ● Ornamental Trees, Mushroom, Trees, Sea weed, Variety Denomination
    - ● Perennial Ornamental Plants
    - ● Annual Ornamental Plants, Chrysanthemum, Orchid
    - ● Agriculture Crops, Fodder Crops, Industrial Crops
    - ● Vegetables, Bulbous , Mulberry, Fruit trees
    - ● International Affairs(UPOV, EAPVP, etc)

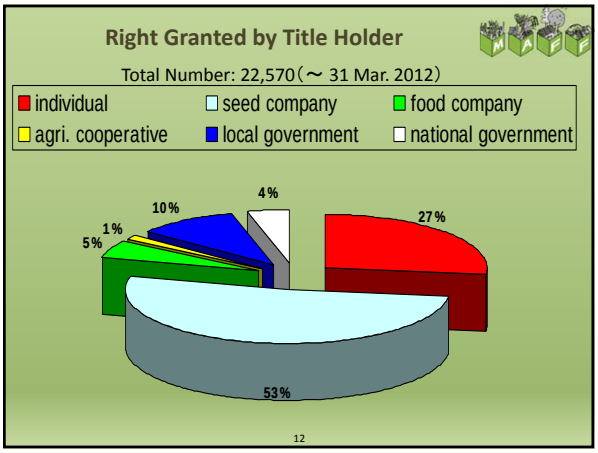

The Location of NCSS
HOKKAIDO CHUO Station
TOKACHI Station
IBURI Station
SHIRIBESHI Sub Station
KAMIKITA Station
HEADQUARTER
(new species)
TSUMAGOI Station
KAGOSHIMA Station
(ornamental plant, vegetable)
NISHI NIHON Station
(ornamental plant, vegetable)
UNZEN Station
OKINAWA Station
YATSUGATAKE Station
(ornamental plant, vegetable)
(Growing test is conducted at the station in red letters.)
7


Procedures of PVP system
Breeding of Variety
Application
Order to Correct Application
If not corrected
Invalidation dismissed
Publication
Order to change the Denomination
If not changed
Examination
(If conditions for registration not satisfied)
Notification of Rejection
Argument
Reasonable
not Reasonable
Rejection
Variety Registration
Registered in the Register of Plant Varieties and publicly notification
Provisional Protection
Breeder's Right
Fee is not paid
Payment
Rescission of variety registration
Requirements are found to be not satisfied
Protection for 25 or 30 years
8


Examination Procedures
Application
Publication
Examination
Registration
Refusal
Formality Examination
DUS Examination
Examination for Denomination (1)
Examination for Denomination (2)
Examination for Novelty
PVP Office
Argument
Information about Application Variety

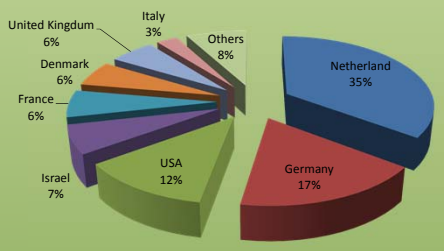

3 Options of DUS EXAMINATION
PVP OFFICE
DUS Growing test
Breeder test
Exam. by Document
DUS Growing test
NCSS
Planning DUS Test
Selection of Comparing varieties
Carrying out DUS test
Submitting DUS test report to PVPO
Examination by Document
Assessments by a public research institution under TGs, enough data and photographs
Breeder test
Examiner PVPO
instruction to applicants to conduct cultivation for DUS examination
10


Trend of Applications
number
1500
1000
500
0
Acceded to the Act of 1991
Acceded to the Act of 1978
PVP Act
1978
1983
1988
1993
1998
2003
2008
(2012FY)
Application(Total): 1,162
Japan
abroad
Granted
11


Right Granted by Title Holder
Total Number: 22,570(～ 31 Mar. 2012)
individual
seed company
food company
agri. cooperative
local government
national government
4%
10%
1%
5%
27%
53%
12

Granted varieties bred in foreign country

Total Number: 6,781（～ 31 Mar. 2013）



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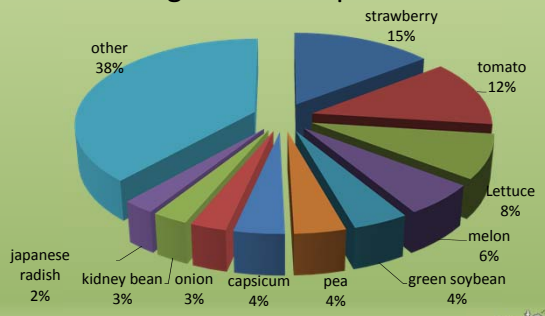
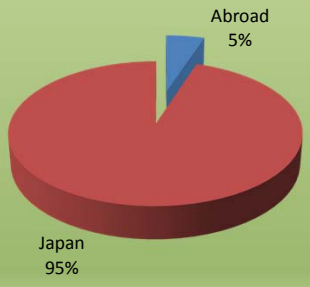
Top 10 vegetable of the number of PVP granted in Japan



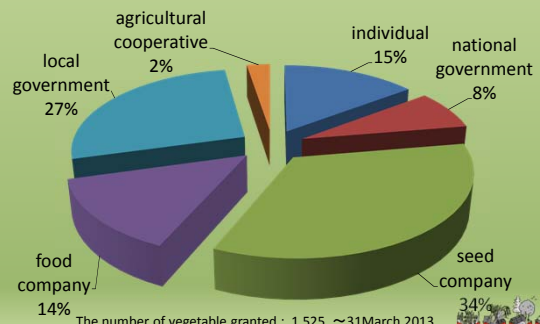
The number of vegetable granted： 1,525 ～31March,2013

Breeding country of vegetable varieties granted in Japan



The number of vegetable granted： 1,525 ～31March,2013

Share of PVP granted by title holder of vegetable

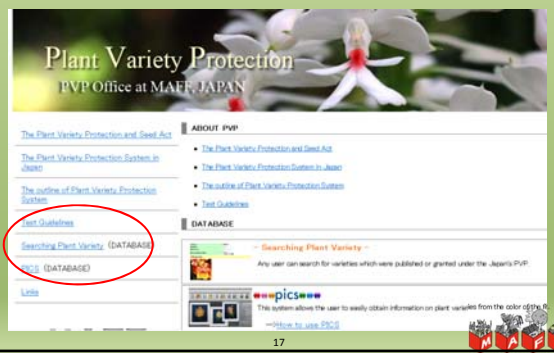


The number of vegetable granted： 1,525 ～31March,2013

Japanese PVP Office web-site

Top page in English

http://www.hinsyu.maff.go.jp/en/en_top.html

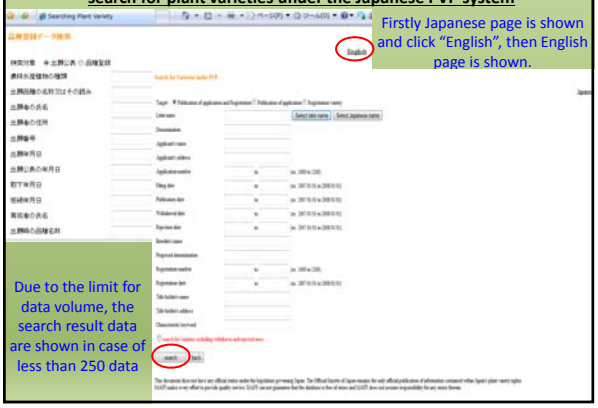


17

Japanese PVP Office web-site

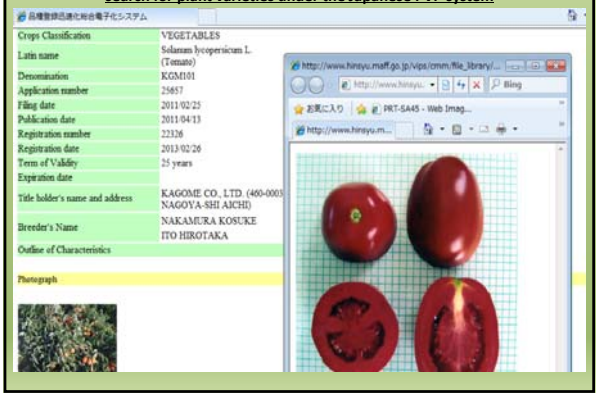
search for plant varieties under the Japanese PVP system

Firstly Japanese page is shown and click “English”, then English page is shown.



Due to the limit for data volume, the search result data are shown in case of less than 250 data

Japanese PVP Office web-site
search for plant varieties under the Japanese PVP system



Japanese PVP Office web-site
Test guidelines
There are about 600 National TGs. Many TGs have English pages.

Thank you for your attention

[Annex IV follows]

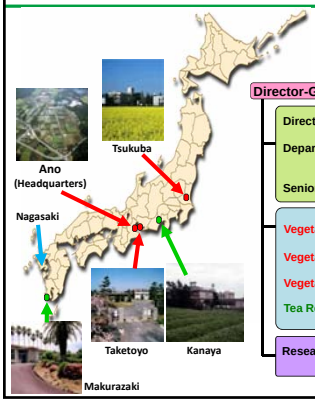
UPOV TWV Nagasaki, Japan, May 20, 2013

Varieties developed by NARO Institute of Vegetable and Tea Science (NIVTS)

Senior Researcher Yoichi KAWAZU, Ph.D.

* NARO: National Agriculture and Food Research Organization

Organization of NIVTS



- **Director-General** (Ano)
  - Director of Tea Research (Kanaya)
  - Department of Planning and General Administration (Ano, Tsukuba, Taketoyo, Kanaya, Makurazaki)
  - Senior Coordinator of Vegetable Research (Taketoyo)
  - Vegetable Breeding and Genome Division (Ano)
  - Vegetable Pest Management and Postharvest Division (Ano)
  - Vegetable Production Technology Division (Tsukuba, Taketoyo)
  - Tea Research Division (Kanaya, Makurazaki)
  - Research Support Center (Ano, Taketoyo, Kanaya, Makurazaki)

Research divisions of NIVTS

- Vegetable Breeding and Genome Division
  - Vegetable breeding
  - Development of molecular technologies for vegetable breeding
- Vegetable Pest Management and Postharvest Division
  - Development of IPM systems
  - Development of vegetable quality control technologies
- Vegetable Production Technology Division
  - Development of greenhouse production systems
  - Development of open-field production systems
- Tea Research Division
  - Tea breeding
  - Development of tea production systems

Varieties recently developed by NIVTS

Development of a melon cultivar with resistance to diseases and aphids

Background

- Powdery mildew, Fusarium wilt and aphids are serious problems in melon production.
- There was no cultivar not only with high quality of fruits but also with resistance to all of these diseases and aphids.


Powdery mildew


Fusarium wilt


Aphids

Breeding

HGMP-2 (high fruits quality)

F1 'Arsis'

AnMP-5 (resistance to powdery mildew, fusarium, cotton-melon aphid)

Melon F_1 hybrid 'Arsis'

A new cultivar

- An Earl's-type (high grade type) melon.
- The taste is equal or superior to common Earl's-type cultivars.
- Resistance to powdery mildew (race1, pxA), Fusarium wilt (race0, 2) and cotton-melon aphid.
- The shelf life is 7 days or more after harvest.
- Suitable for summer-autumn cultivation under greenhouse conditions.

Development of a melon cultivar with suppressed-branching and monoecious traits

Background

・Pruning of lateral shoots in horizontally trained cultivation is very hard work.
・Bisexual flowers (andromonoecious plants) tend to set extra fruits which cause extra labor time for removing the fruits.
・Melon growers in Japan want labor-saving cultivars.

Pruning of lateral shoots

extra fruits

Bisexual flower　female flower　Male flower

andromonoecious　monoecious

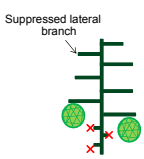
Breeding

AnSB-4 (monoecious, suppressed-branching)
F1 'Feria'
AnMP-1 (resistance to powdery mildew, fusarium)

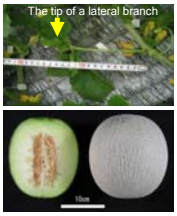
Melon F_1 hybrid 'Feria'

A new cultivar

・Suppressed-branching → less need for the labor to remove lateral branch
・Monoecious (no bisexual flower) → less need for the labor to remove extra fruits
・Resistance to powdery mildew (race1, pxA) and fusarium wilt (race0, 2)
・Suitable for forcing and semi-forcing cultivation.



'Feria'　Conventional cultivars



Development of a cucumber parental line with spineless and bloomless fruits

Background

• Glossy fruits without bloom (white powder) are priced higher in the markets in Japan.
• We have to use specific bloomless rootstock cultivars to produce bloomless fruits. But this type of rootstock has several problems such as less resistance to some diseases.
•There is no commercial cultivar of this type in the world.
• A glabrous mutant 'NCG90' produces bloomless fruits without grafting, and with any rootstock cultivars.

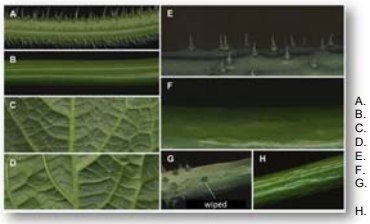
Breeding history (Backcrossing : repeated crossing to a Japanese cultivar)

(A glabrous mutant)
'NCG90'
'Suisei Fushinari' F1
'Suisei Fushinari' F1
'Suisei Fushinari' F1
'Suisei Fushinari' F1
F7

'Kyuuri Chuukanbohon Nou 6'

Cucumber parental line 'Kyuuri Chuukanbohon Nou 6'

Morphological character of new type cucumber, 'Kyuuri Chuukanbohon Nou 6'



A. General stem
B. Trichomeless stem of the mutant
C. General leaf (abaxial side)
D. Trichomeless leaf (abaxial side)
E. General fruit surface
F. Fruit surface of the mutant
G. development of bloom (general cucumber)
H. Bloomless fruit of the mutant

This line bears spineless and glossy (bloomless) fruits, and has glabrous stem and leaf. These traits seem to be due to pleiotropy, and to be controlled by a single recessive gene.

Cucumber parental line 'Kyuuri Chuukanbohon Nou 6'

Advantages of 'Kyuuri Chuukanbohon Nou 6'

Feature	Advantages in cultivation, transportation, processing and consumption
Trichomless (spineless) stem and leaf	• Experience no pain during farm operation
Fruits without spines and warts	• Experience no pain during farm operation • hard to scar during harvest and transportation (less skin injury) • Reduction of the number of bacteria on fruit surface • Comparatively long shelf life (hard to shrivel) • Easy to wash
Bloomless fruit	• Glossy fruits • Possible to produce bloomless fruits without grafting

This variety is a useful breeding material for new type cucumber cultivars.

Development of a rootstock variety for sweet peppers

Background

・ Phytophthora blight (caused by a fungus), bacterial wilt and pepper mild mottle virus (PMMoV) are the most devastating soil-borne diseases of sweet peppers in Japan.

・ It is defficult to prevent these diseases by chemical, physical, and cultural control, and no cultivars have strong resistance to them.

Wilted plants caused by phytophthora blight (left), and bacterial wilt (right)

Development of a rootstock variety for sweet peppers

農研機構 NARO

The pedigree of 'Dai-Power'

Mie-Midori
(resistance to bacterial wilt)

SCM 334
(resistance to phytophthora blight)

Bellmasari
(L^3 gene, resistance to PMMoV)

F_4

F_8

'Dai-Power'
resistance to phytophthora blight, Bacterial wilt, PMMoV ($P_{1,2}$)

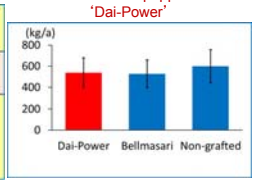
Disease resistance of 'Dai-Power' and The yield of sweet pepper on 'Dai-Power'

農研機構 NARO

Resistance to soil-borne diseases

	Percentage of diseased plants		Genotype of resistance to tobamovirus
	Bacterial wilt	Phytophthora blight	
Dai-Power	0	4	L^3
Bellmasari	100	45	L^3
Ace	100	100	L^1

Yield of sweet pepper on 'Dai-Power'



Bellmasari Dai-Power

Grafted plants in a field infested with phytophthora blight (←) and bacterial wilt (→)

*Grafted onto 'Dai-Power' or 'Bellmasari'

Dai-Power Bellmasari

Breeding of a tomato line with a short-internode trait

農研機構 NARO

Background

・ In tomato cultivation, pruning and training accounts for 9-15% of total work time in Japan.
・ It is a big burden for growers because they need to perform pruning, training and harvesting at the same time.
・ We developed a tomato line with a short internode (a portion of a stem between nodes) trait to reduce the time of training tomato plants.

Parental Line 'Tomato Chuukanbohon Nou 11'

農研機構 NARO

The pedigree of 'Tomato Chuukanbohon Nou 11' (TPL11)

Morioka 7
(A processing tomato line with a short-internode trait)

Momotaro 8
(A Japanese common cultivar)

Momotaro 8

F_4

F_9

'Tomato Chuukanbohon Nou 11'
(A tomato parental line with a short -internode trait)

Fruits of TPL11

Parental Line 'Tomato Chuukanbohon Nou 11'

農研機構 NARO

The characteristics of 'Tomato Chuukanbohon Nou 11' (TPL11)

・ TPL11 has a short-internode trait. The length between the sixth fruit truss and the cotyledon of TPL11 is about 70% of that of 'Momotaro 8'. It reduces the time of training (lowering) tomato plants.

・ TPL11 is resistant to fusarium wilt race-1.

・ The fruit of TPL11 is slightly flattened round, pink in outer color and the weight is 170g on average. The fruit has lower sugar content and is prone to be malformed compared with 'Momotaro 8'.

TPL11 'Momotaro 8' 'Zuiei'

This variety is a useful breeding material for tomato cultivars with a short internode trait.

'Anominori', a parthenocarpic eggplant cultivar

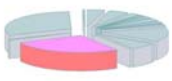
農研機構 NARO

Background

Fruit development is difficult in winter condition because of the lack of fertile pollen.

Phytohormone treatment is mainly performed to promote fruit setting and development.

However, the treatment requires 30% of total working hours.



*parthenocarpic: the plant produces fruits without fertilization.

Breeding

'Talina', a breeding material

'Anominori'

Normal fruit growth without pollinator insects or phytohormones

'Daizaburou', a rootstock variety of eggplant with resistance to bacterial wilt and fusarium wilt

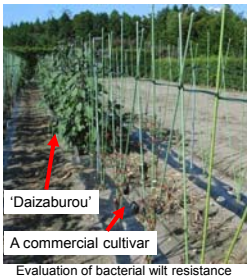
農研機構 NARO

Breeding

'NANTOHNASU' × 'LS1934' — F1 ····· F9 'Daizaburou'

The characteristics of 'Daizaburou'

- Highly resistant to bacterial wilt and fusarium wilt
- The growth of scions are vigorous, and the yield of fruits is high enough for commercial use
- Lower cost for seed production because it is an inbred line, not an interspecific hybrid

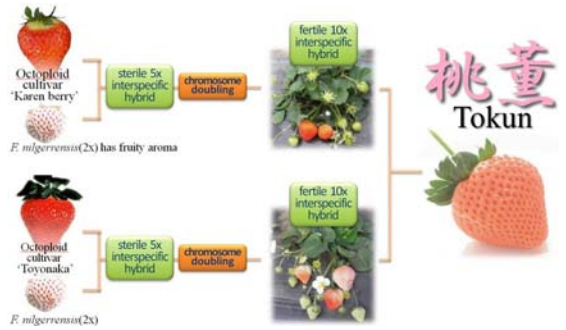


Evaluation of bacterial wilt resistance in an infested field

'Tokun', a new aromatic decaploid interspecific hybrid strawberry

農研機構 NARO

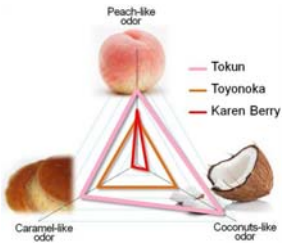
Introduction of distinctive aroma from diploid wild strawberry : *Fragaria nilgerrensis*



'Tokun', a new aromatic decaploid interspecific hybrid strawberry

農研機構 NARO

'Tokun' has aroma components of caramel, coconuts and peach



Content (ppb) of character impact odorants of 'Tokun' fruits

Sensory description	compound	Tokun	Toyonoka	Karen Berry
Peach-like	γ-decalactone	76	81	69
	δ-decalactone	131	19	4
	γ-dodecalactone	114	187	269
	δ-dodecalactone	154	6	6
	Total	475	294	347
Coconuts-like	γ-hexalactone	86	51	15
	δ-hexalactone	53	22	7
	γ-octalactone	32	19	2
	δ-octalactone	57	16	5
	Total	229	107	28
Caramel-like	DMF	1193	15	328
	DHF	6713	5612	368
	Total	7906	5628	696

DMF:2,5-dimethyl-4-methoxy-2*H*-furan-3-one
DHF:2,5-dimethyl-4-hydroxy-2*H*-furan-3-one

'Tokun', a new aromatic decaploid interspecific hybrid strawberry

農研機構 NARO

Unique pale yellowish-orange fruit color

The pale yellowish-orange fruit of 'Tokun' is a short cone with excellent skin gloss and a superior overall appearance.

'Tokun' has been sold as high quality fruits. 'Tokun' has acquired a good reputation.

Development of a Chinese cabbage cultivar with resistance to clubroot

農研機構 NARO

Background

- Clubroot is one of the most serious diseases in Chinese cabbage production in Japan.
- Clubroot resistant cultivars of Chinese cabbage have been bred using the European fodder turnips as resistant sources.
- Breakdown of the resistance has become a problem.

Objective

- Identification of resistant loci originated from turnips
- Development of the clubroot resistant F_1 hybrid cultivar of Chinese cabbage using marker-assisted selection (MAS)

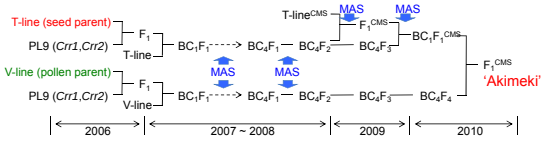
the resistant turnip 'Siloga'

Development of a Chinese cabbage cultivar with resistance to clubroot

農研機構 NARO

- Two clubroot resistant loci, *Crr1* and *Crr2*, which are originated from the resistant turnip 'Siloga', were identified.
- *Crr1* and *Crr2* were introduced to parental lines of a commercial F_1 cultivar of Chinese cabbage using marker-assisted selection (MAS).
  - New F_1 hybrid cultivar 'Akimeki' was developed in 5 years.

DNA markers linked to resistant loci



*MAS: marker-assisted selection

F_1 hybrid cultivar 'Akimeki'

- Highly resistant to clubroot pathogens
  - 'Akimeki' shows resistance to all 4 pathotypes identified in NIVTS.

Cultivars	Pathotype 1	2	3	4
Akimeki	R	R	R	R
SCR Hiroki	S	R	S	R
CR Ryutoku	S	S	R	R
Muso	S	S	S	S

R: resistant, S: susceptible

'Akimeki' Susceptible cultivar

- Head quality of 'Akimeki'
  - High quality head of ~33cm tall and ~19cm width, ~3,300g in weight
  - Green outer leaves and yellow inner leaves
  - Plants can be harvested in ~75 days after sowing.

Breeding of a new Japanese radish variety without 4MTB-GSL

Background

- Radish roots contain a compound 4MTB-GSL, and it is hydrolyzed quickly and converted into 4MTB-ITC. The breakdown of 4MTB-ITC by reaction with water produces a yellow pigment and a flavor component which are responsible for the color and the flavor of traditional Japanese pickles known as "Takuan".
- However, young consumers do not like the color and the smell of Takuan in japan.
- The yellow pigment and the smell will not be produced after processing Japanese radishes if we develop a new cultivar without 4MTB-GSL.
- We found a mutant without 4MTB-GSL from about 650 genetic resources by HPLC analysis.

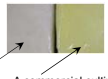
Breeding method (pure line selection from local cv. 'Riso')

Riso Mutant

Self-pollination & Selection

'Daikon Chuukanbohon Nou 5'

Grated radish preserved in a freezer for 12 months



A commercial cultivar

This Variety is a useful breeding material for new type radish cultivars.

Breeding of bunching onion

Background

- Bunching onions need a long growing time; over 8 months from sowing to harvest. The earthing up for producing long pseudostems is laborious.
- The yield and quality can be reduced by bolting, diseases, and pest damage during spring and summer.
- The characteristics of commercial varieties are also not sufficiently diverse to meet the needs of consumers.

Breeding of bunching onion

Development of a new-type bunching onion variety by combining desirable traits of different landraces

Kujo
★Tillers from stems
★Low pungency

Intercrossing

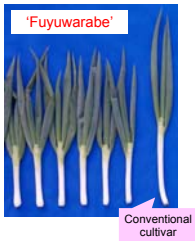
Shimonita
★Short leaf
★High pungency
★Soft texture

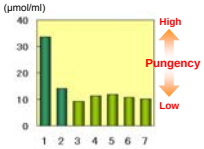
Senju
★Most widely used in Japan
★Long blanched pseudostems
★Vigorous growth
★ Leaf blades are too tough for eating

New varieties with short-leaf, low pungency and soft-texture

Development of bunching onion cultivar with short leaf

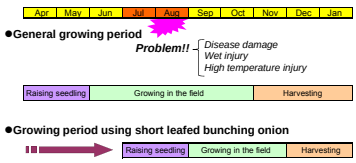
- Two months shorter growing period
- Labor-saving of earthing up for pseudostem blanching (6 times → 3 times)
- Easiness to use in small family
- Low pungency and soft-texture





Enzymatically formed pyruvic acid

1:'Shimonita', 2: 'Kujofuto, 3-7: selected lines



Development and seasonal adaptability of new hybrid cultivar with short leaf

'Yumewarabe', a new hybrid cultivar with short leaf shows a high productivity in various crop seasons.

Harvest season	Cultivar	Weight (g)	Yield (kg/10a)	Enzymatically formed pyruvic acid (μmol/ml)
Autumn	Yumewarabe	119	4,512	14.1
Oct.–Nov.	Fuyuwarabe	101	3,472	16.6
Early summer	Yumewarabe	111	4,424	13.5
May – June	Fuyuwarabe	97	2,838	13.7
Summer	Yumewarabe	117	5,129	14.9
July	Fuyuwarabe	95	3,363	16.1

in June

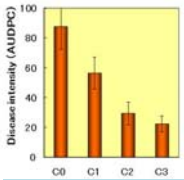
Yumewarabe

Fuyuwarabe

Improvement of rust resistance by recurrent selection in bunching onion

農研機構 NARO

Rust is one of major onion diseases, and lack of breeding material has prevented the development of a resistant variety. We have conducted recurrent selection (repeated cycles of self-pollination, selection and crossing within selected population) for rust resistance, and developed a breeding line that is less affected by rust disease.



Comparison of disease intensity among improved populations by recurrent selection

Commercial variety (left) and a parental line 'Negi Chuukanbohon Nou 1' (right) after inoculation of rust (*Puccinia allii*)

This Variety is a useful material for breeding bunching onion cultivars with rust resistance.

農研機構 NARO

[Annex V follows]

Outline of National Center for Seeds and Seedlings (NCSS)

History of NCSS

1947 : Seven Potato Foundation Stock Seed Farms were established in Japan.

1949 : Seed Testing Laboratories were established in Japan.

1986 : NCSS was established within MAFF by integration of

- 13 Foundation Seed Farms（potato, sugarcane, tea)
- 3 Seed Testing Laboratories(Branch offices of PVPSD)

2001 : NCSS was separated from MAFF and reorganized into an Incorporated Administrative Agency.
The first Medium-Term Plan (2001-2005) started.

2006 : The second Medium-Term Plan (2006-2010) started.

2011 : The third Medium-Term Plan (2011-2015) started.

PVPSD: Plant Variety Protection and Seeds Division
MAFF: Ministry of Agriculture, Forestry and Fisheries

Main Duties of NCSS

-- The only organization in Japan that performs comprehensive activities on seeds and seedlings --

1.DUS growing test for variety registration

Under the UPOV Convention and the Plant Variety Protection and Seed Act, NCSS cultivates candidate varieties with similar existing varieties and evaluates the characteristics. The result of the testing shall be reported to the Minister of MAFF.

2.Facilitation of Plant Variety Protection

Consultation service on Plant variety Protection (PVP G-Men activities)
- Counseling and advice on infringement of PVR
- Similarity test for variety identification: DNA analysis etc.
- Infringement records
- Deposition of evidence

3.Seed Inspection

- Under the instruction of MAFF Minister, NCSS implements commercial seeds inspection on labeling and quality.
- NCSS issues seed quality certificates as an accredited laboratory of ISTA based on the request of seed dealers.

4.Production of foundation seeds

NCSS produces and distributes disease-free and high quality foundation seeds of potato and sugarcane. Seed potato is the only desionated plant for domestic guarantine

5.Conservation of plant genetic resources

NCSS conserves vegetative crops (e.g. potatoes, fruit trees) as a sub-bank of "Gene Bank Project" in close cooperation with other NCSS activities.

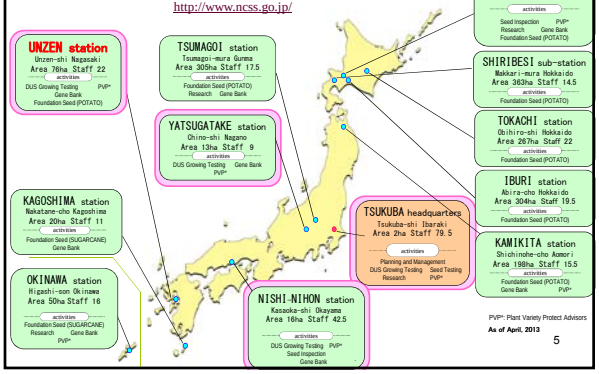
6.Research and development

Research and development of new technologies to apply them to NCSS activities in cooperation with various research institutes.

National Center for Seeds and Seedlings

Incorporated Administrative Agency

http://www.ncss.go.jp/



PVP*: Plant Variety Protect Advisors
As of April, 2013

DUS growing test for variety registration

DUS growing test and related activities of NCSS

NCSS activities

Development of individual Draft Test Guidelines (TGs)

- On-site inspection
- Growing test
- Consideration of the Draft TGs by theTechnical Working Parties
- Making Draft TGs

entrust

submit

notice

New Business and Intellectual Property Division, PVP Office, (MAFF)

DUS growing test procedures

1. Select Similar Varieties
2. Make Implementation Plan for DUS growing test (location of the test, time limit for submitting the plant materials of candidate varieties, similar varieties, etc)
3. Make Work Plan for DUS growing test
4. Conduct DUS growing test
5. Make DUS growing test Report

submit

Application for PBR

Applicant (Breeder)

submit

Conservation of Registered Varieties

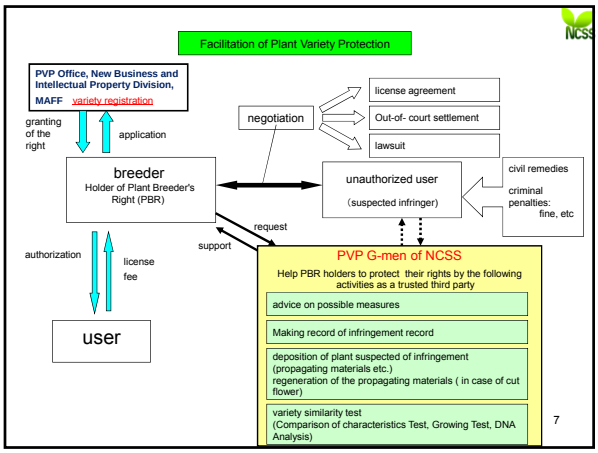
Plant materials and Spawn of mushrooms of candidate varieties

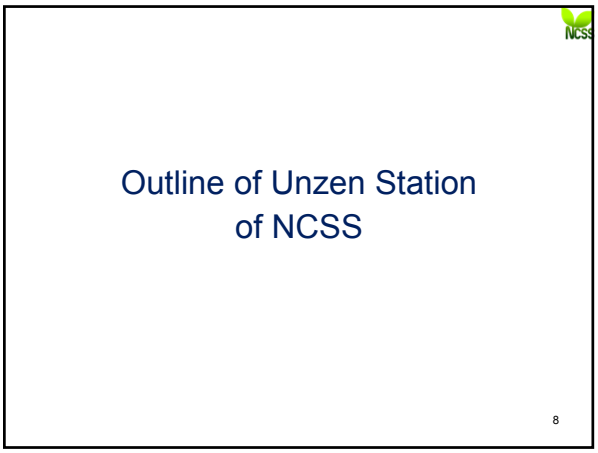
Reference Collection

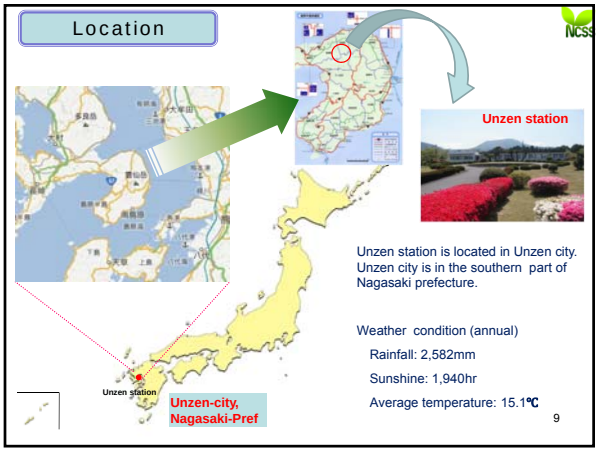
- Preservation of seeds and vegetatively propagated Plants :
  - Similar varieties
  - Example varieties
  - Standard varieties
- Constructing and maintaining the Database

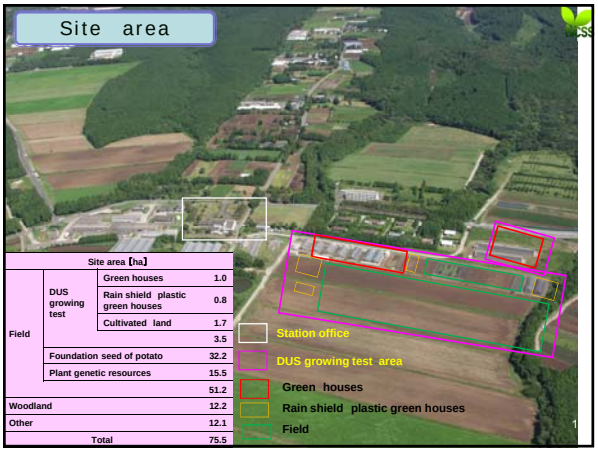
Manual for DUS growing tests

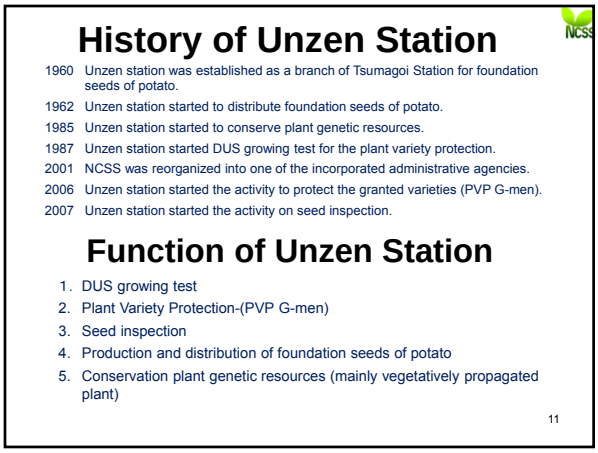
- Manual on cultivation techniques and how to evaluate relevant characteristics
- Manual on special characteristics: Ingredient test, Disease resistance test

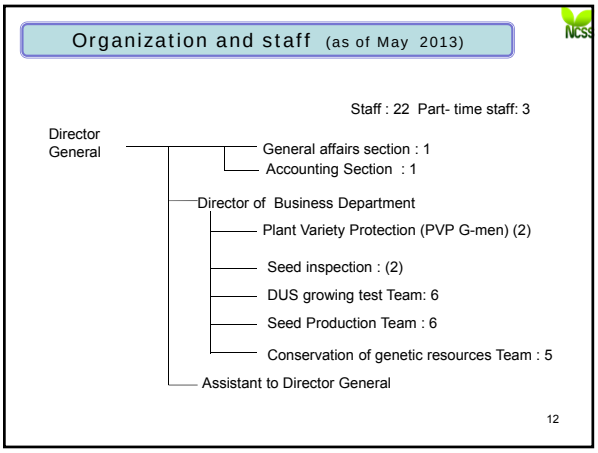

Facilitation of Plant Variety Protection
PVP Office, New Business and Intellectual Property Division, MAFF
variety registration
granting of the right
application
negotiation
license agreement
Out-of- court settlement
lawsuit
breeder
Holder of Plant Breeder's Right (PBR)
unauthorized user
(suspected infringer)
civil remedies
criminal penalties: fine, etc
request
support
authorization
license fee
user
PVP G-men of NCSS
Help PBR holders to protect their rights by the following activities as a trusted third party
advice on possible measures
Making record of infringement record
deposition of plant suspected of infringement (propagating materials etc.)
regeneration of the propagating materials (in case of cut flower)
variety similarity test
(Comparison of characteristics Test, Growing Test, DNA Analysis)
7


Outline of Unzen Station of NCSS
8


Location
Unzen station
Unzen station is located in Unzen city. Unzen city is in the southern part of Nagasaki prefecture.
Weather condition (annual)
Rainfall: 2,582mm
Sunshine: 1,940hr
Average temperature: 15.1℃
Unzen station
Unzen-city, Nagasaki-Pref
9


Site area
Site area【ha】
Field
DUS growing test
Green houses 1.0
Rain shield plastic green houses 0.8
Cultivated land 1.7
3.5
Foundation seed of potato 32.2
Plant genetic resources 15.5
51.2
Woodland 12.2
Other 12.1
Total 75.5
Station office
DUS growing test area
Green houses
Rain shield plastic green houses
Field


History of Unzen Station
1960 Unzen station was established as a branch of Tsumagoi Station for foundation seeds of potato.
1962 Unzen station started to distribute foundation seeds of potato.
1985 Unzen station started to conserve plant genetic resources.
1987 Unzen station started DUS growing test for the plant variety protection.
2001 NCSS was reorganized into one of the incorporated administrative agencies.
2006 Unzen station started the activity to protect the granted varieties (PVP G-men).
2007 Unzen station started the activity on seed inspection.
Function of Unzen Station
1. DUS growing test
2. Plant Variety Protection-(PVP G-men)
3. Seed inspection
4. Production and distribution of foundation seeds of potato
5. Conservation plant genetic resources (mainly vegetatively propagated plant)
11


Organization and staff (as of May 2013)
Staff : 22 Part- time staff: 3
Director General
General affairs section : 1
Accounting Section : 1
Director of Business Department
Plant Variety Protection (PVP G-men) (2)
Seed inspection : (2)
DUS growing test Team: 6
Seed Production Team : 6
Conservation of genetic resources Team : 5
Assistant to Director General
12

Contents of Works in Unzen station

1. DUS growing test based on the Plant Variety Protection and Seed Act.
2. Facilitation of PVP – PVP G-men
3. Inspection of seeds and seedlings based on the Plant Variety Protection and Seed Act.
4. Production and distribution of foundation seed potato
5. Conservation of plant genetic resources

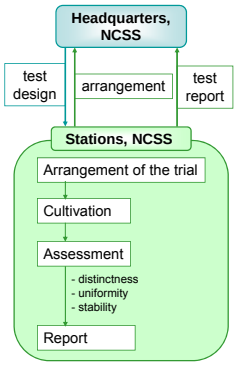
DUS growing test for Osteosperumum

Measurement of relevant characteristics

13

1. DUS growing test

(1) Test design and test arrangement



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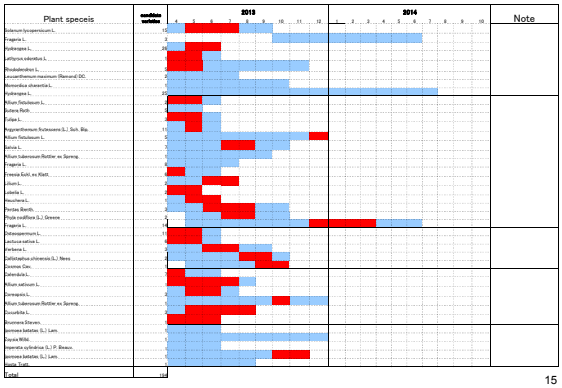
(2) Schedule of DUS growing test



15

(3) Assessment in the field

- Assessment by 2 or more staffs
- Assessment of DUS
- Observation and measurement of each characteristic
- Taking photo of test plots and whole plants

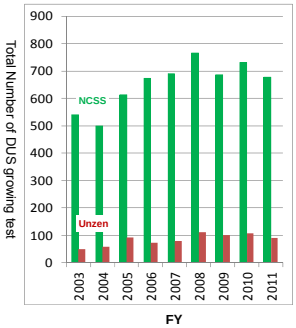
16

(4) Assessment in the laboratory

- Detailed observation and measurement of characteristics
- Photography of plant parts

17

(5) Total number of DUS growing test



FY	Number of Crops for DUS growing test	
	NCSS	Unzen
2003	47	6
2004	53	10
2005	50	8
2006	75	11
2007	74	19
2008	83	17
2009	103	18
2010	122	29
2011	128	25

Main DUS Growing Test Plants

Cabbage	Sweet potato	Hydrangea
Daikon	Tomato	Lobelia
Garlic	Welsh onion	Marguerite
Lettuce	Melon	Osteospermum
Pumpkin	Strawberry	Verbena

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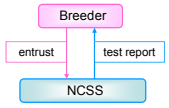
2. Facilitation of PVP – PVP G-men

(1) The characteristics of similar varieties are compared with registered varieties by growing test or DNA analysis.

(2) Information about plant breeder's right are collected and announced.



Unzen station
-1 Examination of similarity of characteristics.
-2 Counseling for breeders

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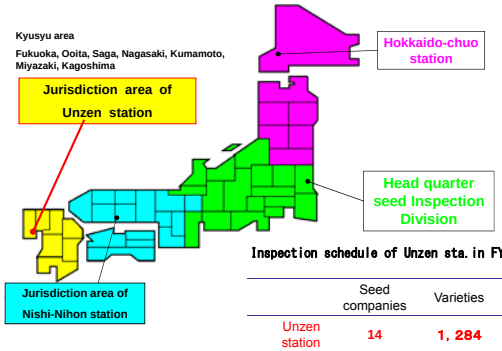
3. Inspection of seeds and seedlings



Inspection schedule of Unzen sta. in FY '13

	Seed companies	Varieties	Samples
Unzen station	14	1, 284	252

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4. Production and Distribution of Foundation Seeds of Potato

Production and distribution varieties at Unzen station
Norin No.1, Dejima, Setoyutaka, Nishiyutaka, Andes red, Aino-aka, Fugen-maru, Aiyutaka etc.


Planting


Cultivation covered with tunnel of insect proof net


Visual inspection by rouging


Harvesting


Potato virus inspection by ELISA test


Yellow water trapping for aphids

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5. Conservation of plant genetic resources

Conservation of genetic resources of vegetatively propagated plant from FY1985

Kind of Plants	No. of varieties
Flowers and Ornamental plants	
Carnation	246
Dianthus L.	136
Azalea	20
Fruits tree	
Citrus	130
Mume	99
Chesnut	80
Persimonn	70
Apricot	63
Others	12
Crops for special purpose	
Tea tree	849
Juncos L.	353
Others	208
Total	2,266


carnation


mume


chestnut


tea tree


devil's tongue (konjac)

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Information

Incorporated Administrative Agency

National Center for Seeds and Seedlings, Unzen Station

859-1211
1494-35, Saigo-bo, Mizuho-cho, Unzen-city, Nagasaki Pref.

Phone : +81-957-77-2100
Fax : +81-957-77-2154
E-mail : toiawase@ncss.go.jp (Headquaters)
URL: http://www.ncss.go.jp/

2013.5

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UPOV-TWV

Welcome to Unzen st.

Thank you very much

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[Annex VI follows]

ANNEX VI

LIST OF LEADING EXPERTS

DRAFT TEST GUIDELINES TO BE SUBMITTED TO THE TECHNICAL COMMITTEE IN 2014

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

before July 5, 2013

Species	Basic Document	Leading expert(s)
Chives (*Allium schoenoprasum* L.) (Revision)	TG/198/2(proj.2)	Mrs. Marian van Leeuwen(NL)
Cucumber (*Cucumis sativus* L.) (Partial revision: disease resistance)	TG/61/7, TWV/47/29	Mr. Raoul Haegens (NL), Mrs. Chrystelle Jouy (FR)
Melon (*Cucumis melo* L.) (Partial revision: disease resistance)	TG/104/5, TWV/47/30	Mr. Raoul Haegens (NL), Mrs. Chrystelle Jouy (FR)
Sweet Pepper, Hot Pepper, Paprika, Chili (*Capsicum annuum* L.) (Partial revision: disease resistance)	TG/76/8, TWV/47/31	Mr. Raoul Haegens (NL), Mrs. Chrystelle Jouy (FR)
*Pea (*Pisum sativum* L.) (Partial revision: grouping characteristics)[2]	TG/7/10, TWV/47/25, TWV/47/25 Add.	Mr. François Boulineau (FR)
*Opium/Seed Poppy (*Papaver somniferum* L.) (Revision)	TG/166/4(proj.4), TWV/47/32	Mrs. Marianna Feher (HU)

[2] Subject to approval by the TWA at its forty-second session.

DRAFT TEST GUIDELINES TO BE DISCUSSED AT TWV/48
(* indicates possible final draft Test Guidelines)

New draft to be submitted to the Office of the Union
by May 9, 2014

(Guideline date for Subgroup draft to be circulated by Leading Expert: March 14, 2014
Guideline date for comments to Leading Expert by Subgroup: April 11, 2014

Species	Basic Document	Leading expert(s)	Interested experts (State / Organization)
Basil (*Ocimum basilicum* L.) (Revision)	TG/200/1	Mrs. Swenja Tams (DE)	ES, FR, HU, IT, JP, NL, QZ, ZA, ESA, ISF, Office
Bottle Gourd, Calabash (*Lagenaria siceraria* (Molina) Standl.)	TG/LAGEN(proj.2)	Mrs. Chrystelle Jouy (FR)	JP, KR, NL, QZ, UA, ESA, ISF, Office
*Brassica (Partial revision: male sterility) = • Cauliflower (*Brassica oleracea* L. convar *botrytis* (L.) Alef. var. *botryris* L.), • Cabbage (*Brassica oleracea* L.), • Brussels Sprout (*Brassica oleracea* L. var.*gemmifera* DC.), • Kohlrabi (*Brassica oleracea* L. convar. *acephala* (DC.) Alef. var. *gongylodes* L.; *Brassica oleracea* L. *Gongylodes* Group), • Swede-Rutabaga (*Brassica napus* L. var. *napobrassica* (L.) Rchb.), • Curly Kale (*Brassica oleracea* L. var. *sabellica* L.), • Chinese Cabbage (*Brassica rapa* L. var. *pekinensis* (Lour.) Kitam.), • Calabrese- Sprouting Broccoli (*Brassica oleracea* L. convar. *botrytis* (L.) Alef. var. *cymosa* Duch. (including *Brassica oleracea* L. convar. *botrytis* (L.) Alef. var. *italica*))	TG/45/7, TG/48/7, TG/54/7, TG/65/4, TG/89/6 Rev., TG/90/6, TG/105/4, TG/151	Mr. Raoul Haegens (NL)	CZ, DE, ES, FR, GB, JP, KR, QZ, ZA, ESA, ISF, Office
Brown Mustard (*Brassica juncea* (L.) Czern.)	TG/BRASS_JUN (proj.1)	Mr. Yoshiyuki Ohno (JP)	CZ, DE, KR, NL, PL, QZ, ZA, ESA, ISF, Office
*Cassava (*Manihot esculenta* Crantz.)	TG/CASSAV(proj.4)	Mr. Simeon Kibet (KE) / Mr. Fabricio Santana Santos (BR)	TWA, CO, JP, ISF, Office
*Cucumber (Partial revision: Cucurbit yellow stunting disorder virus (CYSDV))	TG/61/7, TWV/47/29	Mr. David Calvache (ES)	CN, CZ, DE, ES, FR, HU, IT, JP, KR, NL, QZ, UA, ZA, ESA, ISF, Office
Cucurbita maxima x *Cucurbita moschata*	TG/CUCUR_MMO (proj.1)	Mrs. Chrystelle Jouy (FR)	ES, HU, IT, JP, KR, NL, QZ, UA, ZA, ESA, ISF, Office
*French Bean (*Phaseolus vulgaris* L.) (Partial Revision: format of disease resistance explanations)	TG/12/9 Rev.	Mr. Raoul Haegens (NL)	BR, CN, CZ, DE, ES, FR, JP, KE, QZ, ZA, ESA, ISF, Office
*Leaf Chicory (*Cichorium intybus* L. var. *foliosum* Hegi) (Revision)	TG/154/4(proj.2)	Mr. Pascal Coquin (FR)	IT, NL, QZ, ESA, ISF, Office
*Lentil (*Lens culinaris* Medik.) (Revision)	TG/210/2(proj.1)	Mr. Pascal Coquin (FR)	ES, HU, IT, PL, UA, ISF, Office

Species	Basic Document	Leading expert(s)	Interested experts (State / Organization)
Lettuce (*Lactuca sativa* L.) (Revision)	TG/13/10 Rev.	Mrs. Marian van Leeuwen (NL)	BR, CZ, DE, ES, FR, IT, JP, KR, MA, NL, QZ, ZA, ESA, ISF, Office
*Shiitake (*Lentinula edodes* (Berk.) Pegler) (Partial revision: plant material required)	TG/282/1	Mr. Yoshiuki Ohno (JP)	CN, KR, ISF, Office
Turnip (*Brassica rapa* L. var. *rapa* L. (Revision)	TG/37/10	Mr. Pascal Coquin (FR)	CZ, DE, GB, IT, JP, KR, NL, QZ, ZA, ESA, ISF, Office
Witloof Chicory (*Cichorium intybus* L. partim) (Revision)	TG/173/4(proj.1)	Mr. Pascal Coquin (FR)	IT, NL, QZ, ESA, ISF, Office

[End of Annex VI and of document]