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UPOV

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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

TECHNICAL WORKING PARTY FOR VEGETABLES

Twenty-second Session

Tsukuba, Japan, July 3 to 7, 1989

REPORT

adopted by the Technical Working Party for Vegetables

Opening of the Session

1. The twenty-second session of the Technical Working Party for Vegetables (hereinafter referred to as "the Working Party") was held in Tsukuba, Japan, from July 3 to 7, 1989, and was followed by visits to horticultural research institutes and breeding companies on July 10 and 11. The list of participants is reproduced in the Annex to this report.

2. Mr. N. Hirano, Chief Examiner of the Seeds and Seedlings Division of the Agricultural Production Bureau of the Ministry of Agriculture, Forestry and Fisheries, welcomed the participants to Japan. The session was opened by Mr. R. Brand (France), Chairman of the Working Party. The Chairman extended a special welcome to the numerous experts from Japan who were attending a UPOV Working Party session for the first time. Mr. B. Greengrass, Vice Secretary-General of UPOV, highlighted the importance of the Technical Working Party's meeting for the first time in Japan and the Asian part of the world, at a time when UPOV was gaining the interest of several non-member States and was also discussing the revision of its Convention.

Adoption of the Agenda

3. The Working Party adopted the agenda of its twenty-second session, which appears in document TWV/XXII/1, after having agreed to delete the following items: 6 (List of reference books and documents), 14 (States of expression in Test Guidelines), 16(xi) (Lettuce (Revision)), 16(xii) (Watermelon), 16(xiii) (Chick Pea), 16(xv) (Shallot), 16(xvi) (Garlic), 16(xviii) (French Bean), 16(xix) (Witlof).

Short Report on Special Problems or Difficulties Encountered

4. The Working Party noted document TWV/XXII/17, containing a short report on special problems/difficulties encountered in the United Kingdom. It noted that, with respect to the presentation of non-linear characteristics, the United Kingdom was working towards better computerization. It agreed to the interpretation according to which, for the use of the hilum color of Broad Beans to determine distinctness, the comparison varieties would only be those varieties which showed homogeneity in that characteristic. Savoy cabbage and white cabbage would in future have to be combined in one group, as the number of hybrids between the two groups had become too large. It noted that earliness in cauliflower varieties posed some problems in that the order of the example varieties was liable to change from one country to another. This fact was however already known in connection with a number of other physiological characteristics of other species.

Report on the Twenty-Fourth Session of the Technical Committee and Recommendations of the Technical Committee

5. Dr. M.-H. Thiele-Wittig reported on the main subjects of interest to the Working Party that had been raised during the last session of the Technical Committee, referring for further information to the full report on that session, which is to be found in document TC/XXIV/6.

6. The Working Party agreed to discuss the individual items resulting from the last session of the Technical Committee under the corresponding items of its own agenda.

Items for the Technical Working Party on Automation and Computer Programs

7. The Working Party noted documents TWC/VII/11 on the application of COY analysis to leek in The Netherlands, TWC/VII/13 on the application of COY analysis to spring onion data, and TWC/VII/19 on Between-Center Standardization of Variety Descriptive Scores Based on Continuous Measurements. The Working Party further noted a summary report given by Dr. Thiele-Wittig on the previous session of the Technical Working Party on Automation and Computer Programs.

8. The Working Party agreed that for vegetable species also the two-out-of-three method for measured characteristics should be replaced by COY analysis. It would still have to study whether the 1% significance level proposed by the Technical Working Party for Agricultural Crops for grasses could also be the right level for vegetables. That would take some more time yet.

Minimum Distances Between Varieties

9. The Working Party noted document TWV/XXII/9, containing a summary of the results of the collation of different documents prepared by the Technical Working Parties on certain species and handed over to Mr. John Law, United Kingdom, document TC/XXIII/6, containing the report on the joint TC/CAJ session, and document TC/XXIV/6, paragraphs 18 and 19, on the Workshop on Lettuce.

10. With reference to document TWV/XXII/9, it agreed that the minimum distance should not be lower than the significance level.

11. It finally agreed that minimum distances had to be fixed species by species and characteristic by characteristic. In general, minimum distances were not only based on statistical needs for significance: they also took into account matters of policy, and had to be worked out in discussions with breeders at the national level and in agreement with them as a whole.

Testing of Bremia Lactucae in Lettuce

12. The Working Party noted Annex IV of document TWV/XXI/23, and also the updated version of the report on the subgroup meeting on Bremia lactucae held in 1987, which had been distributed during the session. It made a few changes to that document, among other things deleting the second subparagraph of paragraph 1 and the whole of paragraph 7, and adding some clarification in paragraph 2 concerning Dm-genes 16 and 18 and in the table concerning Dm-gene 16. Subject to those changes, the Working Party approved the document. Mr. Brand (FR), in cooperation with Mr. Evans (GB), will prepare a document on the basis of that paper, which should be transmitted to the professional organizations for comments. They will have to await, however, some scientific observations from an expert from the United States of America.

Disease Resistance Characteristics

13. The Working Party could not discuss this item owing to lack of time.

New Methods, Techniques and Equipment in the Examination of Varieties

14. The discussions took place in the presence of several additional experts from Japanese breeding firms.

15. The Working Party noted documents TC/XXV/4, TWV/XXII/4, TWV/XXII/7 and TWV/XXII/10.

16. Dr. Habben (DE) introduced document TWV/XXII/10, containing an inventory of the methods studied so far by the member States, referring for completeness' sake to the information on Japan, contained in document TC/XXV/4.

17. The introduction was followed by a lecture given by Dr. M. Hirai from the Department of Vegetable Breeding of the National Research Institute of Vegetables, Ornamental Plants and Tea (NIVOT) of Japan on "Identification and Classification of Vegetables by the Analysis of Metabolites, Proteins and DNA." Dr. Hirai explained the above three possibilities in his lecture and concluded as follows:

(i) Analysis of metabolites. Analyses of secondary metabolites are often used for the classification of plant species. The variation of these metabolites within a species is quantitative rather than compositional. Therefore the use of metabolite analysis for the identification of cultivars is limited. Immunological techniques are now available for the analysis of these low-molecular-weight metabolites.

(ii) Analysis of enzyme protein. Isozyme and protein analyses are extensively used for the classification and identification of species and cultivars. The classification of the taro cultivar (Colocasia esculenta) was shown as an example. The practicability and limitations of these techniques were also discussed.

(iii) DNA analysis. The use of restriction enzyme, southern transfer and DNA-DNA hybridization make DNA analysis very easy. These methods are ideal for the identification of cultivars and have still further possibilities. Very simple procedures for the extraction of DNA from plant tissue and non-radioactive detection of restriction fragment polymorphism (RFLP) were shown.

18. The lecture was followed by a discussion on the usefulness of, the need for, and possible consequences of the introduction of electrophoresis characteristics as distinctness characteristics for vegetable varieties. At present, the method was only under study and not used for distinctness. As, however, a proposal for its use for distinctness in agricultural crops had been made by the Technical Working Party for Agricultural Crops, the Working Party might also have to study it in order to have a sound basis on which to decide for or against it. Many experts were afraid of the possible consequences of allowing too small a difference (a difference in one band) as a sufficient difference for an amended variety to undermine the protection of an existing variety. Moreover, some experts saw no need for the time being to rush into the new methods, as the establishing of distinctness in vegetables where sufficient traditional characteristics were present had not presented problems so far. It was also stressed that there was no correlation between a certain electrophoretic band and some morphological change or improvement in the variety. Applicants should really be asked to specifiy what advantage their candidates offered in relation to another variety already existing that differed only slightly from them.

19. Following the discussions, the breeders were still unable to state whether or not they would be in favor of the introduction of electrophoresis to determine distinctness in vegetable varieties, as they did not yet use the new methods themselves.

20. The Working Party finally agreed to some detailed studies in order to gain more knowledge of the possible use of electrophoresis. It chose asparagus, peas and watermelon as the species to be studied. Dr. Habben (DE) would preside over the study on asparagus, Mr. Brand (FR) over that on peas and Mr. Tabata (JP) (or another expert from Japan) over that on watermelon. The Office of UPOV would prepare a circular inviting all member States to join in the studies and to give more details on each of the species. The objective is to introduce a standard method for the use of electrophoresis in the examination of these species.

21. Mr. Evans (GB) introduced document TWV/XXII/7, the first part of which gave the results of the application of image analysis to certain onion varieties. He stressed that for the time being the method would only be used to observe characteristics already included in the Test Guidelines. He might, however, also suggest some new characteristics in the future. He would report to the next session of the Working Party on any further results.

22. The Working Party asked all member States to inform it before its next session on any further developments in the study of new technology. Reports on negative results would also be very important. In this connection, Mr. Van Marrewijk (NL) will inform the group of the work done at RIVRO (NL) on shallot.

Revision of the UPOV Model for a Report on Technical Examination

23. The Working Party noted document TC/XXV/6, containing proposals for amendments. Under the guidance of Mr. Van Marrewijk (NL) as moderator, it finally agreed on the following:

(i) General comments: It agreed with comments (v), (vi) and (vii) and disagreed with comments (ii) and (viii).

(ii) Report on Technical Examination: It agreed with the following comments: 1; order 3, 2, 4, 1; 5(i); 8(i); 9 + 10(i); 9 + 10(iv). It disagreed with comments 6 and 7. It also asked for the application number on page 3 of Annex I to be replaced with the reference of the requesting authority.

(iii) Interim Report on the Examination of a Variety: It agreed with the following comments: 1, 2, 3 + 4(ii), 5(ii), 6(ii), 8(i), 9(ii). It disagreed with comment 7.

(iv) Request for Examination Results: It agreed with the following comments: 1(i), 1(ii), 2, 6 + 7(ii), 9(ii), 9(iii), 10, last line of 11. It disagreed with the comments 3, 4, 8 and 9(i).

Cooperation With Breeders in the Testing of Varieties

24. The Working Party noted document TC/XXV/5 and completed the table indicated on page 1 of the Annex. It left the decision on whether or not to involve the applicant in the growing tests to each member State. Some experts, however, expressed their preference for a broadening or intensification of international cooperation between national testing authorities vis-à-vis the possibility of having the applicant do the growing tests, except where one country and few varieties are concerned. When the growing tests are left to the applicant to do, member States should ensure the homogeneity of the variety.

Final Discussion of Draft Test Guidelines for Peas

25. The Working Party noted documents TG/7/5(proj.), TWV/XXII/4, TWV/XXII/5, TWV/XXII/8 and the results of the discussions held in the Technical Working Party for Agricultural Crops, as distributed during the session and contained in paragraph 18 of document TWA/XVIII/9 Prov. The Working Party finally agreed, under the guidance of Mr. Evans (GB) as moderator, with the comments made by the Technical Working Party for Agricultural Crops, subject to the following exceptions.

26. The Working Party was unable to agree with the decision on characteristics 1, 31, 32 and 35. It also could not agree to the inclusion of characteristic 4 on page 1 of document TWV/XXII/4 ("Stem: habit," with the states "dwarf, tall") and could only agree to the inclusion of characteristic 1 on the same page ("Dry seed: color of testa" with the states "reddish brown, brown, brownish green") if the characteristic were limited to varieties with anthocyanin.

27. Unlike the Technical Working Party for Agricultural Crops, which proposed its exclusion, the Working Party proposed including the text on the characteristics with partial expression (Part II of document TWV/XXII/4) as an annex to the Test Guidelines for Peas, after having brought the substantive information from the tables of characteristics into the explanations. The expert from the United Kingdom will prepare a revised text for the purpose.

28. Unlike the Technical Working Party for Agricultural Crops, which proposed exclusion of the majority of the text, the Working Party proposed keeping the full text of the Explanation as an integral part of the Test Guidelines. It stressed, for the benefit of the Technical Committee, that it believed the draft Test Guidelines for Peas to be among the best Test Guidelines it had prepared.

29. Unlike the Technical Working Party for Agricultural Crops, which had not heeded them, the Working Party proposed adoption of the following proposals from document TWV/XXII/8:

Characteristics:

11 to be used as a grouping characteristic (one country opposed this decision)

31 to have the words "If assessed before flowering" deleted in the explanations

34 to have the characteristic placed at the end of the Table

34a to include a new characteristic reading: "Flower: width of sepals" with the states "narrow (Abador, Caprice), medium (Conservor), broad (Amino)"

38 to have an additional state "greenish cream (4)" added.

30. The Working Party asked for the Technical Committee to be informed of the differences of opinion between the two Working Parties. The Chairman will in the meantime try to settle some of these differences by correspondence.

Discussion of Working Papers on Test Guidelines

Test Guidelines for Parsley

31. The Working Party noted document TWV/XXI/4. It also noted the wish of the experts from Denmark, who had been unable to attend the present session, to have the discussions on that document postponed. The Working Party considered it necessary to make progress with the discussions, however, and decided to continue its consideration of the working paper in spite of the above wish. The amendments agreed upon would be transmitted to the Danish experts. If they could agree to them in principle, the document should be sent to the professional organizations for comments. The Working Party, under the guidance of Mr. Evans (GB) as moderator, finally made the following main changes to document TWV/XXI/4:

(i) Conduct of Test: The test should include 200 plants.

(ii) Methods and Observations: The number of plants should be changed from 20 to 40. After paragraph 2, an additional paragraph should be added reading: "All observations on the leaf should be made on the largest leaf."

(iii) Table of Characteristics:

Characteristics

1 to have the example variety "Mooskrause" deleted and to receive the additional example varieties "Curlina (3), Spartacus (5)"

3 to be given the additional states "very loose, very dense," the example variety "Clivi" for state 9 and the additional example varieties "Vernusson (5), Curlina (7)"

4 to read: "Curled varieties only: Plant: appearance of surface of canopy" with the states "open, clustered, closed," with example varieties and drawings to be prepared by the experts from the United Kingdom

5 to have the word "total" deleted and to have the example varieties "Bravour, Grüne Perle (3), Consort (7)"

6 to be deleted

7 to 13 to apply to the leaf blade

7 to receive an asterisk (*), to have the word "green" added before "color" and to have the additional example varieties "Consort (3), Vernusson (7)"; after this characteristic a new characteristic to be inserted, reading: "Leaf: glossiness" with the states "weak, medium (US Paramount), strong"

8 to be placed after characteristic 5, the experts from Denmark to indicate example varieties; after this characteristic a new characteristic to be inserted reading: "Leaf: weight" with the states "low (Ground), medium (Summer Green), high (US Paramount)"

9 to be deleted

10 to have the example varieties checked by the experts from Denmark for suitability following the restriction to the blade

13 to receive an asterisk (*) and the additional example varieties "Consort, Spartacus (3), Paramount, Frisé, Claudia (5)"

14 to have the asterisk (*) deleted, to be placed after characteristic 8, to apply to curled varieties only and to have the additional example varieties "Emperor (3), Spartacus (5), Curlina (7)"

15 to receive an asterisk (*)

16 to have between the states the additional state "triangular (5)", the experts from Denmark to check the example varieties

17 to have the state "truncate" placed at the end, the experts from the Netherlands to prepare drawings for explanation and the experts from Denmark to indicate example varieties; after this characteristic a new characteristic to be included, reading: "Leaflet: number of sinuses" with the states "few (Extra Curled Dwarf), medium (Seto Paramount), many"

18 to have the additional example varieties "Consort, Spartacus (3), Petrona (7)"

19 to have the additional example varieties "Curlina, Delikat (3)"

20 to have the additional example varieties "Delikat (3), Petrona (7)

21 to have the asterisk (*) deleted

22 to be deleted

23 to have the additional example varieties "Mooskrause (1), Halblange (9)"

27 to have example varieties indicated by the experts from the Netherlands

28 to be deleted

29 to have example varieties indicated by the experts from the United Kingdom

(iv) Literature: No specific literature to be included.

(v) Technical Questionnaire: To have the bracketed phrase in paragraph 4 deleted and to have characteristics 1, 7, 12, 23 and 24 indicated under paragraph 5.

(vi) The Working Party asked for several of the open questions, especially on example varieties, to be studied during the comparative trials in Denmark for EEC purposes.

(vii) The Working Party asked for the Technical Committee to consider including a paragraph in all Technical Questionnaires, requesting the applicant to indicate whether the variety possessed any special characteristics. The Working Party considered this subject to be not covered by paragraph 6 on the differences in relation to similar varieties.

Test Guidelines for Tomato (Revision)

32. The Working Party noted documents TG/44/3, TWV/XIX/16 and TWV/XXI/5. It finally made the following main changes to document TWV/XXI/5:

(i) Subject of these Test Guidelines: The Latin name to be corrected to Lycopersicon lycopersicum (L.) Karst. ex Farw.

(ii) Conduct of Tests: The tests to be conducted in the glasshouse or in the open.

(iii) Methods and Observations: Pparagraphs 2, 3 and 5 to be deleted.

(iv) Grouping of Varieties: The following characteristics to be used for grouping: 1, 2, 10, 18, 19, 22, 32, 35.

(v) Table of Characteristics:

Characteristics

2a to read: "Determinate varieties only: Plant: number of nodes on main stem (side shoots to be removed)" with the states "few, medium, many"

3, 4, 5, 19a, 25, 27, 36 to be deleted

6 to have the bracketed part completed with the following: "for indeterminate varieties, between the first and final inflorescence for determinate varieties"

7 to read: "Foliage: attitude"

11 to have the example variety "Marmande" added for Note 1

12, 34 to have the word "green" transferred from the states to the characteristic itself

13 to be placed after characteristic 6 and to read: "Stem: anthocyanin coloration of upper third"

14 to have new example varieties added by the expert from France

16 to have the asterisk (*) deleted

17 to receive an asterisk (*) and the additional state "white"

19 to have "in longitudinal section" added, and the word "solid" deleted from state 5, the expert from France to prepare a new drawing for state 8

20a to receive an asterisk (*) and to have the word "calyx" replaced with "stem"

21 to read: "Fruit: cross section" with the states "round (1), not round (2)"

22 to be placed after characteristic 17, to receive an asterisk (*) and to read: "Peduncle: abscission layer"

23 to be placed before characteristic 17 and to read: "Pedicel: length (from abscission layer to calyx)"

24 to read: "Fruit: stem area"

26 to have the word "pedicel" replaced with "stem"

27a to have the word "pistil" replaced with "blossom end"

31 to have the states from "very few" to "very many," the Technical Committee to be asked whether in addition the indication of figures could be requested in the Table of Characteristics

32, 33 to have the word "greenback" replaced with "green shoulder"

32a to have the words "size of greenback" replaced with "extent of green shoulder"

33 to have the states "light, medium, dark"

35 to receive an asterisk (*) and to have the states "yellow, orange, pink, red"

37 to have the asterisk (*) deleted and to have the same states as characteristic 35

38.1, 38.2 to be combined in one characteristic and to receive an asterisk (*)

39 to have the asterisk (*) deleted

41 to 50e to have the methods indicated by the expert from France

44 to have an additional characteristic on F. O. L. sp. radicis lycopersici added after it

45 to 47 to be combined in one characteristic with the specification "specify race(s)"

48 to 50 to have the word "virus" added after "mosaic"

50a to have the word "infestuous" added

50b to read: "Silvering"

50e to have the resistance characteristics on "Pseudomonas solanacearum" and on "Yellow top" added, the method for the first characteristic to be indicated by the expert from Japan, and for the second by the expert from Israel

(vi) Literature: To be copied from the list of documents and to be completed by the experts from France.

(vii) Technical Questionnaire: Paragraph 4 to ask whether open pollinated variety or hybrid variety; paragraph 5 to indicate the following characteristics: 1, 2, 10, 18, 19, 20, 22, 31 (with the request that the actual number be given), 32, 35, 38; paragraph 7.1 to ask, for each resistance, whether "absent", "present" or "not tested"; paragraph 7.2 to ask for the growing method (glasshouse, open) and the manner of utilization (fresh, processed with indication of type of processing).

Test Guidelines for Asparagus

33. The Working Party noted documents TWV/XXI/20, TWV/XXII/2 and TWV/XXII/18. Under the guidance of Mr. Van Marrewijk (NL) as moderator, it finally made the following main changes to document TWV/XXII/2:

(i) Material Required: As a minimum, for each year of testing, the following quantity of plant material or seed is recommended:

(a) Sexually propagated varieties: 100g of seed;
(b) Vegetatively propagated varieties: 100 plants.

(ii) Conduct of Tests: The last part of paragraph 1 to read: "..., in the second and the third year" and the "40" in paragraph 3 to be replaced with "60."

(iii) Methods and Observations: The "30" in paragraph 1 to be replaced with "40," and paragraph 3 to be deleted.

(iv) Grouping of Varieties: The new characteristic on ploidy and characteristics 3, 6 and 21 to be indicated as grouping characteristics.

(v) Table of Characteristics:

Characteristics

1, 3, 4, 5, 9, 10, 12, 18 to receive an asterisk (*)

2 to have the asterisk (*) deleted

14, 15, 16, 20, 22 to 25 to be deleted

1 to read: "Stem: length up to first ramification" with the states "short, medium, long"; before this characteristic a new characteristic with asterisk (*) to be included, reading: "Ploidy" with the states "diploid, triploid (Hiroshima Green), tetraploid (Seto Green)"

3 to be placed before characteristic 1 and to read: "Plant: height (tallest stem at full development)"

5 to read: "Plant: diameter of largest stem at ground level" with the states "small, medium, large"

6 to read: "Spear: anthocyanin coloration of apex at emergence"

7 to read: "Spear: intensity of anthocyanin coloration of apex at emergence"

8 to read: "Spear: chlorophyll coloration of apex after emergence (about 5 to 10 cm above soil surface)"

9 to read: "Spear: shape of apex" with the states "narrow triangular (3), triangular (5), broad triangular (7)"

10 to read: "Spear: diameter of base of apex compared with remaining stem" with the states "smaller, equal, larger"

11 to read: "Spear: habit of apex"

12 to read: "Spear: length of first bracts at base of apex (at harvest time)"

13 to read: "Spear: width of first bracts at base of apex"

17 to read: "Plant: density of phylloclades"; the experts from the Netherlands to prepare explanations

18 to read: "Plant: color of foliage" with the Notes "3, 5, 7"; characteristics 17 and 18 to be placed before characteristic 6

19 to have the bracketed phrase read: "30% of plants with at least one flower open"; before this characteristic a new characteristic to be inserted, reading: "Time of beginning of emergence of spears (30% of plants with at least one spear having emerged)" with the states "early, medium, late"

21 to have the states: "only female plants (1), female plants and male plants (2), plants with male flowers and plants with male flowers with styles (3), only plants with male flowers without style rudiments"

(vi) Example Varieties: The example varieties to be agreed upon by correspondence between the experts from France, the Netherlands, the Federal Republic of Germany and Japan.

(vii) Explanations on the Table of Characteristics: All explanations to be deleted except those for characteristic 21.

(viii) Technical Questionnaire: The applicant to be asked the following in paragraph 1:

"(i) Propagation of the variety
(a) Vegetative propagation
(b) Sexual propagation
- population
- hybrid (indicate type of hybrid)
(ii) Other information"

and paragraph 5 to indicate characteristics 3, 6, 21 and the new characteristics on ploidy and on the beginning of spear emergence.

Test Guidelines for Carrot (Revision)

34. The Working Party noted documents TG/49/3, TWV/XX/11, TWV/XXII/7 and TWV/XXI/6, prepared by the Subgroup meeting on Carrot held in Angers (France) in November 1988. It finally made the following main changes to document TWV/XXII/6:

(i) Methods and Observations: The words "at least" in paragraph 1 to be deleted.

(ii) Grouping of Varieties: Characteristics 21 and 23 as grouping characteristics to be deleted.

(iii) Table of Characteristics:

Characteristics

4, 18, 25, 27 to receive an asterisk (*)

4 to have the words "intensity of" added before "green"

6 to be placed at the beginning of the table and to read: "Crown: width"

8 to have the word "maximum" deleted

9 to have the additional example variety "Nantaise améliorée (4)"

10 to have the asterisk (*) deleted, to be placed before characteristic 9 and to read: "Carrot: ratio width/length"

11 to have the word "top" replaced with "shoulder"

12 to have the word "foliage" replaced with "crown"

13 to have the additional example variety "Imperator (7)"

14, 21, 23 to have the additional state "red" with the example variety "Kintoki"

16 to have example varieties for state 1 indicated by experts from France

17 and 18 to be combined, with the first state reading "absent or very weak (Karaton, Carenton, Rubica (1))" and the last state "very large (Lange Stompe Winter (9))"

19 to have the example variety "D'Amsterdam" deleted and the example variety "Kintoki (9)" added

26 to be deleted

27 to have the example varieties "Major (1), De Meaux (3), Muscade (9)" added and the example variety "Touchon" transferred to Note 7

28 to have the words "of top" replaced with "above soil"

29 to have the word "Root" replaced with "Carrot" and to have the additional example varieties "Little Finger (3), Nantaise améliorée (5), Gigante (7)"

30 to have the first two states reversed and to be given a new explanation of the method by the experts from France

32 to have the words "of core" deleted

33 to have the asterisk (*) deleted, as the experts from the United Kingdom opposed its mandatory use for financial reasons; in the eyes of the experts from the United Kingdom, a test that would require sequential harvesting to determine the exact maturity date was considered financially unjustifiable; the Working Party did however stress the importance of the characteristic for grouping purposes, and asked for the Technical Committee to express its opinion

34, 35, 36 to receive methods to be prepared by experts from the Federal Republic of Germany; after characteristic 35 on the "total sugar content" an additional characteristic to be added, reading: "Proportion of monosaccharides in total sugar content" with the states "low (Rubica (3)), medium (Berlicum (5)), high (Nantaise améliorée (7))"

36 to have the bracketed phrase and the example variety "Karotan" deleted

37 to read: "Tendency to bolting"

38 to have example varieties indicated by the experts from France

39 to read: "Flower: percentage of sterile male plants" with the states from "absent or very low" to "very high"

The experts from the Federal Republic of Germany would check the spelling of all example varieties. The example variety "Nantaise" would always read "Nantaise améliorée," and the example variety "De Colmar" always "De Colmar à coeur rouge."

(v) Technical Questionnaire: Characteristics 11, 39 and 40 to be added in paragraph 5, and paragraphs 4, 7.2(i) and (ii)---with regard to sowing only---to be copied from document TWV/XXI/7.

(vi) Literature: The relevant literature to be copied from document TC/XXII/4, Annex III, page 10. The experts from France and the United Kingdom will indicate further literature.

Test Guidelines for Brussels Sprouts (Revision)

35. The Working Party noted documents TG/55/3, TWV/XXI/8 and TWV/XXII/15 and, under the guidance of Mr. Evans (GB) as moderator, made the following main changes to document TWV/XXII/15:

(i) Methods and Observations: The number of plants or parts of plants to be 20.

(ii) Table of Characteristics: The expert from France to indicate example varieties for characteristics 15 and 17 and the states of characteristic 14 to read: "narrow obovate, broad obovate, circular"

(iii) Technical Questionnaire: Paragraph 4 to request information as to whether the variety is an open-pollinated variety or a hybrid.

Status of Test Guidelines

36. The Working Party agreed that the draft Test Guidelines for Peas (Revision) should be sent to the Technical Committee for final adoption, together with the remarks on the points of disagreement between the Working Party and the Technical Working Party for Agricultural Crops.

37. The Working Party agreed that the draft Test Guidelines for Asparagus, Brussels Sprouts (Revision), Carrot (Revision), Parsley, and Tomato (Revision) should be sent to the professional organizations for comments if the outstanding information and agreement (from Denmark on Parsley) could be obtained early enough for the professional organizations to have time to study them.

38. Lack of time prevented the Working Party from discussing the remaining agenda items on Test Guidelines.

Future Program, Date and Place of Next Session

39. At the invitation of the expert from France, the Working Party agreed to hold its twenty-third session in Avignon from July 2 to 6, 1990, with visits to breeders' stations set for Monday, July 2, 1990. The session would close on July 6 at 6 p.m. The following items are scheduled for discussion during the session:

(i) Short reports on special problems or difficulties encountered

(ii) Report on the twenty-fifth session of the Technical Committee

(iii) Recommendations of the Technical Committee

(iv) Items for the Technical Working Party on Automation and Computer Programs

(v) Minimum distances between varieties

(vi) Testing of Bremia lactucae in lettuce

(vii) Disease resistance characteristics

(viii) New methods, techniques and equipment in the examination of varieties

(ix) Final discussion on draft Test Guidelines for:

Parsley
Tomato (revision)
Asparagus
Carrot (revision)
Brussels Sprouts (revision)

(x) Discussion on Working Papers on Test Guidelines for:

Cauliflower (revision) (TG/45/3, TWV/XXI/10)
Cabbage (revision) (TG/48/3, TG/48/3 Corr., TWV/XXI/9)
Spinach (revision) (TG/55/3, TWV/XXI/11)
Cucumber, Gherkin (revision) (TG/61/3, TWV/XXI/12)
Broccoli (TWV/XXII/3)
Lettuce (revision) (TG/13/4, NL to prepare a working paper)
Watermelon (JP to prepare a working paper)
Chick Pea (FR to prepare a working paper)
Onion (revision) (TG/46/3, GB to prepare a working paper)
Shallot (NL to prepare a working paper)
Garlic (FR to prepare a working paper)
Cucurbita maxima (GB to prepare a working paper)
Cucurbita moschata (GB to prepare a working paper)
French Bean (revision) (TG/12/4, DE to prepare a working paper)
Witlof (NL to prepare a working paper)

Visits, Films, Lectures

40. On the morning of July 3, the Working Party saw a film on agriculture in Japan and another on vegetable production in Japan.

41. On the afternoon of July 4, the Working Party visited Tsukuba Science City and the National Agriculture Research Center, the National Institute of Agrobiological Resources and the National Center for Seeds and Seedlings.

42. On July 5, the Working Party heard a lecture by Dr. M. Hirai on the "Identification and Classification of Vegetables by the Analysis of Metabolites, Proteins and DNA."

43. On July 6, the Working Party visited the Sakata Seed Co. Ltd in Kimitsu, the Mikado Seed Growers Co. Ltd in Otaki and the Breeding Station of the Chiba Prefecture near Mobara.

44. On July 10, the Working Party visited the Yamato-Noen Co. Ltd at Tenri-shi and the Research Institute of Agriculture and Forestry of Osaka. It also paid a visit to the site of the International Garden and Greenery Exhibition. On July 11, the Working Party visited the areas of traditional vegetable growing in Tanabe-cho, the Yamashiro Horticultural Institute of Kyoto Prefecture at Tanabe-cho and the Plant (Vegetables) Breeding and Experimental Station of the Takii Co., Ltd at Kosei-cho.

45. This report has been adopted by correspondence.

[Annex follows]

ANNEX

LIST OF PARTICIPANTS AT THE TWENTY-SECOND SESSION OF THE TECHNICAL WORKING PARTY FOR VEGETABLES, TSUKUBA, JAPAN, JULY 3 TO 7, 1989

I. MEMBER STATES

FRANCE

Mr. R. BRAND, INRA/GEVES, B.P. 1, Les Vignères, 84300 Cavaillon (tel. 90.71.26.85)

GERMANY (FEDERAL REPUBLIC OF)

Dr. J. HABBEN, Bundessortenamt, Osterfelddamm 80, 3000 Hannover 61 (tel. 0511 57041)

JAPAN

Mr. T. OKADA, Director of Seeds and Seedlings Division, Agricultural Production Bureau, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-Ku, Tokyo (tel. 03-591-0524)

Mr. N. HIRANO, Chief Examiner, Seeds and Seedlings Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-Ku, Tokyo (tel. 03-591-0524, fax 03-503-3957)

Mr. M. AOKI, Examiner, Seeds and Seedlings Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-Ku, Tokyo (tel. 03-591-0524, fax 03-503-3957)

Mr. H. FURUKAWA, Inspector, National Center for Seeds and Seedlings, 2-2 Fujimoto, Tsukuba-Shi, Ibaraki-ken (tel. 0298-38-6585)

Dr. M. HIRAI, Department of Vegetable Breeding, National Research Institute of Vegetables, Ornamental Plants and Tea (NIVOT)

Mrs. K. ISHIKAWA, Chief, Seeds and Seedlings Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-Ku, Tokyo (tel. 03-591-0524, fax 03-503-3957)

Mr. T. MIZUNO, Inspector, National Center for Seeds and Seedlings, 2-2 Fujimoto, Tsukuba-Shi, Ibaraki-ken (tel. 0298-38-6585)

Mr. Y. NIWA, Chief, DUS Testing Division, National Center for Seeds and Seedlings, 2-2 Fujimoto, Tsukuba-Shi, Ibaraki-ken (tel. 0298-38-6584)

Mr. T. OTA, Assistant-Director, Seeds and Seedlings Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-Ku, Tokyo (tel. 03-591-0524, fax 03-503-3957)

Mr. T. SHIBA, Examiner, Seeds and Seedlings Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-Ku, Tokyo (tel. 03-591-0524, fax 03-503-3957)

Mr. M. TABATA, Assistant Director, Seeds and Seedlings Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-Ku, Tokyo (tel. 03-591-0524, fax 03-503-3957)

Mr. K. TAKAGISHI, Director, DUS Testing Division, National Center for Seeds and Seedlings, 2-2 Fujimoto, Tsukuba-Shi, Ibaraki-ken (tel. 0298-38-6584, fax 0298-38-6583)

Mrs. A. UTADA, Director, Seed Test Division, National Center for Seeds and Seedlings, 2-2 Fujimoto, Tsukuba-Shi, Ibaraki-ken (tel. 0298-38-6585)

Mr. S. YAMAMOTO, Chief, DUS Testing Division, National Center for Seeds and Seedlings, 2-2 Fujimoto, Tsukuba-Shi, Ibaraki-ken (tel. 0298-38-6584)

Mr. M. YUASA, Examiner, National Center for Seeds and Seedlings, 2-2 Fujimoto, Tsukuba-Shi, Ibaraki-ken (tel. 0298-38-6584, fax 0298-38-6583)

ISRAEL

Dr. N. GLOBERSON, Department of Seed Research, Volcani Center, P.O.B. 6, Bet Dagan 50250 (tel. 03-9683463)

NETHERLANDS

Mr. N.P.A. VAN MARREWIJK, RIVRO, P.O. Box 32, 6700 AA Wageningen (tel. 08370-79362, fax 79228)

SPAIN

Mr. R. LOPEZ DE HARO Y WOOD, Instituto Nacional de Semillas y Plantas de Vivero, José Abascal 56, 28003 Madrid (tel. 0034 1 441 8199, telex 47698 INSM E, telefax 1 442-82-64)

UNITED KINGDOM

Mr. J.L. EVANS, National Institute of Agricultural Botany, Huntingdon Road, Cambridge CB3 0LE (tel. 0223 276381, direct dial 342308; telex 817455, telefax (0223) 277602)

II. OBSERVER ORGANIZATION

Dr. M. VALVASSORI, Administrator, Commission of the European Communities, VI B II.1, Loi 130 4/174, 200 rue de la Loi, 1049 Brussels, Belgium (tel. 2356971, telex AGREC 25670, fax 2/2350165)

III. TECHNICAL EXPERTS

Mr. K. MASABAYASHI, Sakata Seed Corporation, C.P.O. Box Yokohama No. 11, Yokohama, Japan (tel. 045-715-2111, fax 045-712-1330)

Mr. O. TAKAHASHI, Takii & Co., Ltd., P.O. Box 7, Kyoto Central 600-91, Kyoto, Japan (tel. 075-365-0123, fax 075-365-0110)

Mr. Y. TAMAO, Mikado Seed Growers Co., Ltd., 1, 203 Hoshikuki Chiba City 280, Japan (tel. 0472-65-6111, fax 0472-65-6118)

Mr. E. WATANABE, Watanabe Seed Co., Ltd., P.O. Box 4 (109 Machiyashiki), Kogota, Miyagi 987, Japan (tel. 02293-2-2221, fax 02293-3-3366)

IV. OFFICER

Mr. R. BRAND, Chairman

V. OFFICE OF UPOV

Mr. B. GREENGRASS, Vice Secretary-General, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland (tel. 022 7309155, telex 412 912 ompi ch, telefax (041-22) 7335428)

Dr. M.-H. THIELE-WITTIG, Senior Counsellor, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland (tel. 022 7309152, telex 412 912 ompi ch, telefax (041-22) 7335428)

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