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# INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

## TECHNICAL COMMITTEE

### Thirtieth Session

Geneva, October 25 and 26, 1993

MATTERS ARISING FROM THE 1993 SESSIONS OF THE TECHNICAL WORKING PARTIES,  
INCLUDING THE BMT, TO BE DEALT WITH BY THE TECHNICAL COMMITTEE

Document prepared by the Office of the Union

This document summarizes, in its Annex, matters arising from the 1993 sessions of the Technical Working Parties and the BMT which have to be dealt with by the Technical Committee (hereinafter referred to as "the Committee"). They comprise: (i) questions presented by the Technical Working Parties and the BMT to the Committee; (ii) important decisions taken by the Technical Working Parties and the BMT and communicated to the Committee for information; (iii) matters dealt with by the Technical Working Parties and the BMT on the instructions of the Committee or in preparation for discussions planned in the Committee under separate agenda items. The headings of the different items are listed on page 1 of the Annex.

As the TWO and TWF meet just a few weeks before the Committee, some further questions may be presented orally during the session or in an addendum to this document.

To shorten references to the various Technical Working Parties and the BMT in this document, use is made of the following codes that designate their documents:

- TWA - Technical Working Party for Agricultural Crops;
- TWC - Technical Working Party on Automation and Computer Programs;
- TWF - Technical Working Party for Fruit Crops;
- TWO - Technical Working Party for Ornamental Plants and Forest Trees;
- TWV - Technical Working Party for Vegetables.
- BMT - Working Group on Biochemical and Molecular Techniques, and  
DNA-Profiling in Particular

[Annex follows]

**MATTERS ARISING FROM THE 1993 SESSIONS OF THE TECHNICAL WORKING PARTIES,  
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MATTERS ARISING FROM THE 1993 SESSIONS OF THE TECHNICAL WORKING PARTIES,  
INCLUDING THE BMT, TO BE DEALT WITH BY THE TECHNICAL COMMITTEE

Review of Documents on Statistical Methods Discussed During Past Sessions of  
the Working Parties

1. The TWC noted document TWC/11/13 distributed during the session. It agreed to continue working on that document and prepare a more complete version for its next session. That version would in particular comprise, or at least refer to, the amended version of the COYD analysis to be prepared by Dr. Weatherup and the revised versions of the Long-Term LSD and COYU analysis to be prepared by Mr. Talbot. The COYD and COYU versions were also to be presented to the Technical Committee at its session in October 1993.

(see TWC/11/14 Prov., paragraph 33)

2. The Committee is invited to note the above information.

Access to International Data

3. The TWC noted the information contained in document TWC/11/4. It asked all experts to supply any information or modifications to Mr. Talbot (United Kingdom) before January 1, 1994, for the preparation of an updated version for the next session.

(see TWC/11/14 Prov., paragraph 28)

4. The Committee is invited to note the above information.

Programs Which Can Be Readily Assimilated Into Other Plant Variety Computer  
Systems

5. The TWC noted the information contained in document TWC/11/5. It asked all experts to supply any information or modifications to Mr. Talbot (United Kingdom) before January 1, 1994, for the preparation of an updated version for the next session. The revised document should then also comprise information on the German COYU program in SAS and on the PC version of COYD prepared by Dr. Weatherup (United Kingdom).

(see TWC/11/14 Prov., paragraph 29)

6. The Committee is invited to note the above information.

Multivariate Analysis

7. The TWC noted document TWC/11/7 on the use of a multivariate criterion in distinctness testing. It concluded that the evaluation of the  $D^2$  profile for particular problem pairs could aid the determination of distinctness by drawing attention to derived univariate characteristics of assistance in specific circumstances. As time did not allow a detailed discussion of the paper, the TWC would continue its discussions during its next session on the basis of that document and possibly an updated version to be prepared by Dr. Weatherup.

(see TWC/11/14 Prov., paragraph 30)

8. The Committee is invited to note the above information.

Handling of Visually Assessed Characteristics

9. The TWC noted document TWC/11/12 on the handling of visually observed characteristics. Lack of time allowed only explanations on the research done. Thus the TWC agreed to discuss the document in further detail during its next session. The TWC requested the German experts to also present the document to the members of the Technical Working Party for Ornamental Plants and Forest Trees during that Working Party's session in Antibes, France, in October 1993.

10. The TWC noted furthermore that Mr. Jansen (The Netherlands) intended to finalize his paper on visually assessed characteristics for the TWC's next session.

(see TWC/11/14 Prov., paragraphs 31 and 32)

11. The Committee is invited to note the above information.

Combined Over-Years Distinctness (COYD) Analysis

12. The TWC noted document TWC/11/11 containing an updated description of the COYD analysis preceded by a simple and easily understandable summary. On the basis of a small number of proposals received for further improvements, a revised version of the document will be prepared for the Technical Committee.

(see TWC/11/14 Prov., paragraph 7)

13. The Committee is invited to note the above information.

Long-Term LSD

14. In an ad hoc survey during the TWC session, it appeared that only two countries currently used the Long-Term LSD method, while a few others considered its use for crops with a low number of varieties in test leading to a few degrees of freedom, but also as a basis for calculating an LSD value after only one year of tests. For its application after only one year, the standards would still have to be set. The TWC repeated its recommendation to use the method on a provisional basis if less than 20 degrees of freedom were available. Mr. Talbot (United Kingdom) would prepare, by the end of the year, a new version of the present text for that method in a similar way as for COYD, i.e. a simple, easily understandable explanation and a detailed description of the method comprising the circumstances of its application as well as its limitations and clarifying examples.

(see TWC/11/14 Prov., paragraph 8)

15. The Committee is invited to note the above information and to consider possible steps to be taken.

Sequential Analysis

16. In compliance with a request from the Technical Working Party for Agricultural Crops, the TWC noted several possibilities of sequential analysis. It agreed to discuss this question during its next session, especially the circumstances under which it could be used, what ISTA used in this respect and what the practical applications could be for its use for UPOV purposes. In preparation for those discussions, papers based on an existing video explanation of that method and on the application of sequential analysis to electrophoresis tests using the ISTA practice would be prepared.

(see TWC/11/14 Prov., paragraph 5)

17. The Committee is invited to note the above information.

Combined Over-Years Uniformity (COYU) Analysis

18. In an ad hoc survey made during the TWC session concerning the levels preferred by the various countries, it appeared that Denmark, Germany, The Netherlands and Spain preferred the levels provisionally proposed in the past, while the United Kingdom saw great difficulties in changing to a method which would increase the number of rejected varieties by about 14%. The expert from France had a slight preference for the 0.1% level.

19. The TWC referred to the link between the testing of distinctness and uniformity, and pointed out that the testing of uniformity was an auxiliary requirement for distinctness and that all characteristics used as a routine for the testing of distinctness, as well as any other characteristic used especially for that variety, should also be tested for uniformity.

20. The TWC finally agreed to propose to the Technical Committee that the COYU method should be applied to all cross-fertilized agricultural species with the following levels:

For rejection after 3 years: 0.2%  
For rejection after 2 years: 0.2% (non compulsory)  
For acceptance after 2 years: 2.0%.

These levels should be final for grass species and provisional for other agricultural cross-fertilized species until confirmation of the possibility of also applying the levels definitively to those other species. For those countries that encountered difficulties with the change, a transitional period of three years should be foreseen to change to levels of 0.1%, 0.1% and 1.0% and another two years to reach the levels proposed above.

21. Mr. Talbot (United Kingdom) would extend the scope of document TWC/11/2 before mid-September, by including the agreed probability level, the program for the PC as well as more details on the program, the analysis of variance and the formula for the acceptance length, explanations on the one-sided test, and the same examples as those to be included in the COYD analysis document by Dr. Weatherup.

(see TWC/11/14 Prov., paragraphs 9 to 15)

22. The Committee is invited to take the necessary decisions.

Testing of Uniformity

23. The TWC had a lengthy discussion on the replacement of paragraph 28 of the General Introduction to the Test Guidelines and on the definition of "acceptance probability" and finally agreed on the following definition:

"The acceptance probability is the probability of accepting a variety with P% of off-types. However, the real probability will - because of the discontinuity of the number of achievable off-types - always be greater than or equal to the acceptance probability [A sampling plan is chosen so that the probability of accepting a variety with a low number of off-types is greater than or equal to a predefined probability level]".

24. After a detailed study of document TWC/11/8, the TWC agreed to amend the document in several parts. The amendments would comprise explanations of the meaning of "nominal standard" and "acceptance probability," the risk involved when experts chose low sample sizes, would give more information, especially on the Beta risk, add two examples which would be worked through the entire documents, spelling out each step in the procedure, a change in the sequence of the columns of Appendix I and add examples and 90% acceptance probability. As to the sample sizes, it would not restrict them as foreseen in Appendix III, but give instead the Beta risk for those sample sizes, show the Alpha and Beta risks graphically and explain why certain sample sizes should not be used. The revised version is reproduced in document TWC/11/16.

(see TWC/11/14 Prov., paragraphs 16 to 18)

25. The Committee is invited to take the necessary decisions.

26. Mr. Kristensen(DK,Chairman of the TWC) introduced document TWC/11/16 to the TWV. The TWV appreciated the document which was much more accessible now. It agreed to follow the document when preparing or revising Test Guidelines to fix the population standard, the acceptance probability and the number of off-types tolerated with the indicated sample size. In most cases of vegetable species, the population standard would be 1% and the acceptance probability 95%. It noted, however, that different population standards might have to be applied within one species or even for certain characteristics. Therefore, a certain freedom of adjustment should be allowed for special situations.

(see TWV/27/13 Prov., paragraphs 11 and 12)

27. The draft Test Guidelines presented by the TWV to the Technical Committee for adoption all contained a new paragraph, which in the case of peas reads as follows: "For the testing of uniformity, a population standard of 1% and an acceptance probability of 95% should be applied. For the sample size indicated above that would lead to three off-types tolerated."

(see TWV/27/13 Prov., paragraph 15(i))

28. The TWV noted that in the Test Guidelines only minimum sample sizes would be indicated. If a country wished to apply higher numbers, the resulting Beta risk would be smaller than that for the indicated sample size.

(see TWV/27/13 Prov., paragraph 13)

29. The Committee is invited to take the necessary decisions.

Uniformity in Varieties With Both Propagation by Seed and Vegetative Propagation

30. The TWV agreed that each variety should be judged depending on the manner of its propagation. The breeder should, however, consistently use the same way of propagation in one variety.

(see TWV/27/13 Prov., paragraph 6)

31. The Committee is invited to note the above information.

Degree of Uniformity as a Characteristic

32. The TWV noted that in vegetable species, plant variety protection was often granted in cases where the candidate variety showed uniformity in a new resistance characteristic while the existing variety was heterogeneous. This was contrary to the position of the TWA, namely that a new characteristic could only be used to establish distinctness if the candidate variety as well as the existing variety, from which it was otherwise not distinguishable, were homogeneous in that new characteristic. Although this was partly due to lack of knowledge, as the existing variety would be considered not resistant, it was considered justified in the case of polygenic resistance as a different degree of resistance would mean the addition of another gene.

(see TWV/27/13 Prov., paragraph 9)

33. The Committee is invited to note the above information and to consider possible steps to be taken.

Definition of the Term Genotype

34. The BMT agreed to ask the Technical Committee and the Administrative and Legal Committee for assistance on the following question:

What was intended in Article 1 of the 1991 Act of the Convention by the term "genotype"? Did it limit the possibilities to the expressed part of the genome?

(see BMT/1/4, paragraph 22)

35. The Committee is invited to note the above information and to consider possible steps to be taken.

Clear Distinctness in One or More Characteristics

36. The BMT agreed to ask the Technical Committee and the Administrative and Legal Committee for assistance on the following question:

How to handle the difference of "one or more characteristics" for clear distinctness (clear distinctness in one characteristic, hierarchy of characteristics depending on their genetic control).



(For the results of a first discussion in the joint session of the TC and CAJ in April 1993, see the report reproduced in document CAJ/32/10-TC/29/9, paragraphs 15 to 18)

(see BMT/1/4, paragraph 22)

37. The Committee is invited to note the above information and to consider possible steps to be taken.

#### Disease Resistance Characteristics

38. As in vegetable species many resistance characteristics were routine characteristics, they should receive an asterisk in the UPOV Test Guidelines. Many characteristics in UPOV Test Guidelines called "resistance" characteristics so far were, in reality, tolerance characteristics or, to be even more precise, characteristics on the response of a plant to a disease. With the exception of purely monogenetically controlled resistances, there were no black and white situations but rather, depending on the number of genes present, a gradual situation of different degrees of infection. Therefore, example varieties and a definition were given in the methods, indicating the degree of symptoms up to which a variety would be considered "resistant" or, better, "tolerant." In the case of virus, there was never presence or absence of resistance, but only of tolerance. Tests were made under controlled conditions and were repeatable with the same results. UPOV Test Guidelines should reflect that fact. The TWV accordingly applied this proposal in the Test Guidelines for French Bean (characteristics 44, 45 and 46), which were among the Test Guidelines presented to the Technical Committee for adoption.

(see TWV/27/13 Prov., paragraph 8)

39. The Committee is invited to take the necessary decisions.

#### Genetically Based Non-Homogeneous Seed Color

40. The TWV discussed the question of the yellow seed color of turnip rape which, genetically based on 8 genes, leads to "non-homogeneous" color with about 60 to 80% of yellow seeds only. In the United Kingdom, seed color would therefore not be used for distinctness testing but only for description purposes as it would not be justified to reject those varieties. "Mixed" varieties were already accepted in Canada, Finland and Sweden. The TWV asked that this problem be presented to the Technical Working Party for Agricultural Crops and Mr. Green (United Kingdom) would prepare a paper for this purpose by the end of September 1993.

(see TWV/27/13 Prov., paragraph 4)

41. The Committee is invited to note the above information.

Asterisk Characteristics and Non-Asterisk Characteristics

42. The TWV agreed that in future it would try to increase the number of asterisk characteristics in the Test Guidelines for the species in its area of competence. It noted that usually all characteristics in the UPOV Test Guidelines were tested in the framework of bilateral agreements. In most countries, a characteristic became, after its first use for distinctness purposes, a routine characteristic and all varieties would have to be homogeneous in that characteristic afterwards.

(see TWV/27/13 Prov., paragraph 7)

43. The Committee is invited to note the above information.

New Chairmen

44. The BMT proposed to the Council that it elect Mr. Joël Guiard (France) as Chairman of its coming sessions.

(see BMT/1/4, paragraph 24)

45. The TWV proposed to the Technical Committee that it recommend the Council to elect Mrs. Elisabeth Kristof (Hungary) as the TWV Chairman for the coming three years.

(see TWV/27/13 Prov., paragraph 25)

46. The TWC proposed to the Technical Committee that it recommend the Council to elect Mr. Grégoire (France) as the TWC Chairman for the coming three years.

(see TWC/11/14 Prov., paragraph 35)

47. The Committee is invited to take the necessary decisions.

New Methods, Techniques and Equipment in the Examination of Varieties  
(Item 6 on the Draft Agenda)

48. The BMT proposed that the Technical Working Parties should be informed of the outcome of the first BMT session through the written report on the meeting as well as oral explanations by the Office of UPOV. The attention of the TWC should especially be drawn to possible ways of integrating the results of the present methods with those of DNA-profiling.

(see BMT/1/4, paragraph 21)

49. The TWV noted the draft report reproduced in document BMT/1/4. It asked to be better informed about the work of that Working Group to enable more active participation. As the experts were finally the users of the techniques under discussion, at least the Chairman of the TWV should be invited to future sessions of the BMT Working Group so as to be able to represent the technical aspects and interests of the TWV. The TWV also asked that all experts discuss the subject at national level and become more involved in the investigations. It was important that a dialogue be initiated between crop experts and experts in the special methods.

(see TWV/27/13 Prov., paragraph 14)

50. The Committee is invited to take the necessary decisions.

UPOV Central Computerized Data Base  
(Item 8 on the Draft Agenda)

51. The TWC noted the task given to it by the Consultative Committee during its April 1993 session, i.e. to solve, if possible, all the remaining technical questions regarding the establishment of a central computerized data base so as to enable the Ad Hoc Working Group, which is to meet in Geneva on July 13 and 14, 1993, to prepare a definite proposal to the Council for a central computerized data base prototype. It noted furthermore the information contained in document CAJ/32/2-TC/29/2 and the annex to circular U 2028.

52. Going through the questions contained in the annex to circular U 2028, the TWC was informed of the provisional answers given by the expert from WIPO. It was generally in agreement with those answers and thus only had the following comments to make.

53. Each member State should be free to decide what information other than the minimum to supply. A MacIntosh might be too small to be able to search in the CD-ROM. It would be preferable to decide which fields the experts wished to download. The amount of information to be supplied might, for some countries, be so voluminous that up to 50 floppy disks (approx. 200 megabytes) would be needed to transmit it. Therefore, the use of other data carriers, such as DAT tapes or GIGA tapes, should also be considered.

54. The TWC considered the WIPO format in Annex IV of document CAJ/32/2-TC/29/2 as too constraining for UPOV. Discussions therefore were based on document TWC/11/3. An ad hoc subgroup was formed which met in the evening of June 3 in order to adjust the format contained in document TWC/11/3 and an amended version of that document (TWC/11/3 Rev.) was distributed during the session. The latter had been prepared in the first instance to serve for a bilateral exchange of information from national gazettes and was now amended to also enable the transfer of national data to the envisaged UPOV central computerized data base.

55. As a result of that ad hoc subgroup meeting, the TWC was informed of several changes to document TWC/11/3. It agreed to the changes proposed, especially those included in Appendix A1, i.e.

(i) an additional field "single variety identifier in the country" to combine the information which might be stored in one country for one and the same variety under the three different groups: (a) Plant Variety Protection, (b) National Listing and (c) Other;

(ii) two additional fields before the field "Remarks," namely the "name of unprotected and non-listed varieties" and "Source of information of unprotected and non-listed varieties."

The TWC also proposed field lengths for the individual fields.

56. As a result of the discussions in the TWC, it was furthermore agreed that free fields should be used in the format rather than fixed fields. Mr. Talbot (United Kingdom) would prepare a further amended version of document TWC/11/3 and fax it to the Office of UPOV to enable it to prepare a new document for presentation to the Ad Hoc Working Group meeting in Geneva on July 13 and 14, 1993. That document should also be distributed to the members of the TWC. Dr. Laidig (Germany) would furthermore check whether Appendix A1 covered all fields needed in a UPOV data base, propose further fields if necessary, and mark those that should be searchable. The revised version is reproduced in document TWC/11/15.

57. Mr. Grégoire (France), Mr. Laidig (Germany), Mr. del Fresno (Spain) and Mr. Pullen (United Kingdom) would then, before October 1993, try out the format on data from the national gazettes and study whether it worked for an exchange of information.

58. In order to come to an agreed common code for the Latin names of species, the experts from France, Germany, The Netherlands, Spain and the United Kingdom would send their lists of Latin names used at national level before the end of July 1993 to the Office of UPOV, both in printed and in electronic form, preferably in WordPerfect or ASCII.

59. The TWC again expressed concern about the amount of data to be supplied each month. It preferred to provide each time, if possible, the full national data base but, if that became too expensive, other solutions should be sought. Other solutions could be, for instance, to separate the non-protected, non-listed varieties from the rest and issue a separate disk every third month or once a year, or place all information up to a certain date (e.g. the end of the year) on a separate disk and issue on the subsequent disks only the changes to that separate disk.

(see TWC/11/14 Prov., paragraphs 19 to 27)

60. The TWV noted the history of the discussions concerning a possible UPOV central computerized data base, and documents CAJ/32/2-TC/29/2 and TWC/11/15.

(see TWV/27/13 Prov., paragraph 10)

61. The Committee is invited to note the above information and to consider possible steps to be taken.

[End of annex and of document]