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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS
GENEVA

TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS

Twenty-Seventh Session
Angers, France, June 23 to 26, 1998

REPORT

adopted by the Technical Working Party for Agricultural Crops

Opening of the Session

1. The twenty-seventh session of the Technical Working Party for Agricultural Crops (hereinafter referred to as "the Working Party") was held at Angers, France, from June 22 to 26, 1998. A Subgroup meeting on Sunflower took place on June 21 at the same place to advance the discussions on revised Test Guidelines for Sunflower. The list of participants is reproduced as Annex I to this report.

2. Mr. Rivière, Chairman of the National Institute for Agricultural Research (INRA) Center at Angers, welcomed the participants to his Center. He gave a short introduction to the work of the Center followed by information from Mr. Lechappé, Head of the National Seed Testing Station (SNES), on the work of SNES. The session was opened by the Chairman, Mr. A. Bould (United Kingdom).

Adoption of the Agenda

3. The Working Party adopted the agenda of its twenty-seventh session as reproduced in document TWA/27/1 Rev., after having agreed to add an item on Test Guidelines on Soya Bean and to handle questions left open by the thirty-fourth session of the Technical Committee in April 1998.

Short Reports on Special Developments in Plant Variety Protection in Agricultural Crops (Oral Reports)

4. The experts had no reports to give on special developments in their countries in plant varieties protection of agricultural crops.

Important Decisions Taken During the Last Sessions of the Working Party, the Technical Working Party on Automation and Computer Programs (TWC) and the Technical Committee

5. Mr. M.-H. Thiele-Wittig presented a brief report on the main items discussed during the previous session of the Technical Committee and referred participants needing further details to the full report reproduced in document TC/34/10 Prov.

Application of COYD and COYU Analysis

6. The Working Party noted that the Technical Committee, while agreeing that several experts had still to gain experience of the application of COYD and COYU analysis for further species, had insisted that the document as reproduced in TC/33/7 had been adopted for use for cross-fertilized species and that no alternative strategy should remain: efforts should rather be made to apply the document. Where there were too few varieties, the document would offer an alternative with the criteria of the long-term LSD. Moreover, if TWC experts were sent to sessions of other Technical Working Parties, the method would finally gain better acceptance by the various Technical Working Parties.

Improvement of Document TWC/11/16 on the Testing of Uniformity of Self-fertilized and Vegetatively Propagated Species

7. The Working Party noted that the Technical Committee finally approved document TC/34/5, which would replace the former document TWC/11/16 for the testing of uniformity of self-fertilized and vegetatively propagated species, subject to a few changes and corrections. The Working Party also noted the existence of an older document, TWC/14/4, which would provide additional explanations on the use of the former document TWC/11/16 that would themselves be applicable in the same way to document TC/34/5.

Definition of Off-type, Admixture

8. The Working Party noted that the Technical Committee approved the following definition of off-type:

> "Any plant is to be considered an off-type if it can be clearly distinguished from the variety in the expression of any characteristic of the whole plant or of part of the plant, used in the testing of distinctness, taking into consideration the particular species."

With the adoption of this definition, the Technical Committee wanted to make it clear that the same criteria would apply to the definition of off-types as to the testing of distinctness. With respect to the definition of admixtures, the Technical Committee followed the proposal of the TWA which tried to avoid the term admixture and therefore the need for further definition, and agreed to the following sentence:

> "Plants that are very different from those of the variety could be disregarded as long as their number does not interfere with the test."

In choosing the phrase "could be disregarded," the Technical Committee stressed that it would depend on the judgment of the crop expert whether they were disregarded or not. That would mean in practice that in horticultural crops with a low number of plants just one single plant would interfere with the test and could not be disregarded.

Status of the UPOV Test Guidelines

9. The Working Party noted that the Technical Committee had discussed the status of the UPOV Test Guidelines. It noted the only binding obligations on UPOV member States were those contained in the text of the Convention itself. UPOV could moreover only make recommendations on that text or prepare guidelines for the interpretation of the legal obligations. The UPOV Test Guidelines were intended to give guidance for the interpretation of Articles 7, 8 and 9 of the 1991 Act of the Convention. Their purpose was to ensure that the Articles in question were applied in as harmonized a form as possible and that decisions were taken in a similar way leading to same or similar results.

10. How far the Guidelines were reflected in national practice or national law depended on the individual situation in each member State. In practice the UPOV Test Guidelines were taken over in many member States entirely without any change (no deletion of characteristics, no addition). In other member States all characteristics with an asterisk and a selection of those without an asterisk were taken over. As they were not exhaustive, further characteristics were added in still others. In principle the UPOV Test Guidelines were broadly accepted and guaranteed on account of the broad participation in their preparation and continuous updating, which also proved their quality. The use of the UPOV Test Guidelines was independent of whether a given State had a system of official tests done by government testing authorities or a breeder testing system. Applicants and breeders also used them.

Variety Denominations and Trademarks

11. The Working Party noted that the Technical Committee had stressed the obligation under the UPOV Convention to use the denomination in relation to the selling and marketing of the variety. The Committee was of the view that any highlighting of the trademark in the Technical Questionnaire would only reduce the value of variety denominations. It was necessary to impose the use of the variety denomination, so no question on trademarks should be included in the Technical Questionnaires.

Question, in the Technical Questionnaire, on the Status of the Variety under the Legislation on the Protection of the Environment and on Human and Animal Health

12. The Working Party noted that the Technical Committee reconfirmed, as already mentioned in the report on the last session of the Committee, that all Test Guidelines would in future contain a question in the Technical Questionnaire requiring the information referring to the status of the variety under the legislation on the protection of the environment and on human and animal health.

Judgement of Vectors (Phytoplasm)

13. The Working Party noted that the Technical Committee had discussed the effect of phytoplasm in varieties of *Euphorbia*. It was first clarified that the term “vector” was wrongly used and should be replaced by phytoplasm or epiphyte. After having heard explanations on the details as reproduced in document TC/34/7, the Committee agreed quite rapidly that the inclusion of phytoplasm in a cell was an infection of the plant material which could be removed, and therefore should not be considered part of the cell DNA. A candidate variety that differed from another variety only in the cause of introduction of the phytoplasm was therefore not considered a new variety and would therefore not qualify for separate plant variety protection. The Technical Committee also noted that there might be many different varieties already given plant variety protection whose differences might be caused only by that phytoplasm. However, as long as that fact was not known, there was no consequence. Should it become clear the phytoplasm was the only difference, the protection of the variety would have to be withdrawn.

UPOV-ROM Plant Variety Database

14. The Working Party noted updated information supplied by the Office of UPOV on the UPOV-ROM Plant Variety Database. In 1997, six issues of UPOV-ROM had been issued at two-month intervals. In 1998, the first three UPOV-ROMs had already been distributed. The software used by the French firm was the same as that developed for the WIPO ROMARIN CD-ROM. As new improvements in the latter’s software had been made, the UPOV-ROM would also contain several improvements in the near future, the main one being the possibility of using it in networks. The UPOV-ROM already contained the 1997 OECD List of Cultivars eligible for certification and, although at present available only in pdf format, the list of varieties protected through the European Union Community Plant Variety Office (CPVO). Discussions were also under way to include the varieties contained in the European Union

Catalogue. The UPOV-ROM has also been offered to subscribers since the beginning of the year at an annual subscription price of CHF 750 plus postage.

15. The Working Party also noted that the TWC had requested during its last week's session that, as of the next issue of the UPOV-ROM, States should state, which had provisionally not been done for each record whether it was a new record (1), a modified record (2) or an unchanged record (3). The expert from Denmark inquired whether the Office of UPOV could not ask JOUVE to include such a program in its control program, as for some States it would be very difficult to follow that request.

List of Varieties Under Test

16. The Working Party noted that the Technical Committee had approved the proposal by the TWO that the exchange of tables with lists of varieties under test in the individual member States be abolished as that information could be easily retrieved from the UPOV-ROM and that it had proposed that the UPOV Office increase the number of copies given free of charge to each member States from five to seven.

UPOV Documents in Electronic Form

17. The Working Party reconfirmed its interest in obtaining more documents in electronic form. It noted that the UPOV Test Guidelines might soon be available in electronic form, namely on a CD-ROM. It also noted that the Office of UPOV planned to set aside an open and a restricted area on its homepage for the reproduction of certain documents.

Application of Recommendations on Variety Denominations

18. The Working Party noted that the Technical Committee had discussed the problem of some breeders systematically applying for different variety denominations for the same variety in different countries. The only way to stop that practice would be a full exchange of information between the member States and the publication of the different synonyms.

A new version of the DUSTX package and a prototype DUSTX for Windows

19. The Working Party noted that the Technical Committee welcomed the new version of the DUSTX package and the prototype produced for Windows. It recommended broader use of that freely available software which would ensure more harmonized evaluation of data. The new DUSTW version to run under Windows is expected to be available before the end of the current year.

Telecommunications, Exchangeable Software and Contacts

20. The Working Party noted that the Technical Committee welcomed document TWC/15/9 which contained information on the electronic mail addresses of participants in UPOV Technical Working Parties, while information on database management systems in use in the

UPOV member States was to be found in document TWC/15/8 and information on exchangeable software in document TWC/15/10. It supported the proposal by the TWC that more States should supply such information to the expert from the United Kingdom. The Working Party further noted with appreciation that the above information was also available on the Internet and would be regularly updated by experts from the United Kingdom (http://www.bioss.sari.ac.uk/links/upov/upov/upov.html).

List of Species in Which Practical Technical Knowledge Has Been Acquired

21. The Working Party noted that the Technical Committee welcomed document TC/34/4, which contained an updated version of the list of species in which practical technical knowledge had been acquired. It asked all member States to provide the Office of UPOV with any new information for the updating of that document.

Extended Testing on the Initiative of the Testing Office

22. The Working Party noted that the Technical Committee had difficulty in accepting that it would be left to the testing expert to decide whether further tests should be made without a special request from the applicant where the usual characteristics were not sufficient to establish distinctness. After a detailed discussion, the Chairman of the Technical Committee finally concluded by proposing that the Test Guidelines should be very well prepared so that the need to include new characteristics in the list might be avoided. That list of characteristics should then be kept for several years. If there were an obvious omission or a need to include further characteristics, the other offices should be informed of the inclusion, and it should be discussed in the Technical Working Party concerned. One should avoid searching for a difference for its own sake because, if one really looked for a difference, a small one would eventually be found. The whole question should be discussed further with breeders and other crop experts in the various Technical Working Parties. It was important to keep the spirit and the quality of the Test Guidelines in mind as, without that spirit and that quality, there was reason to wonder where unlimited deviation from the Test Guidelines would eventually lead.

23. Several experts considered it difficult to discuss the problem globally without clear and concrete cases. Others considered it difficult to mention a clear case as that would mean accusing a given country. Many experts insisted that the UPOV Test Guidelines should not try to prevent the use of additional characteristics. The breeder present warned that the uniformity of existing varieties should be kept in mind while adding other characteristics and that an additional burden should not be placed retroactively on existing varieties.

24. Several experts felt the need to recall and note down the criteria and principles decided for the selection of characteristics for the inclusion in the Test Guidelines. Other considered that, with the wider opening of UPOV and with new developments, the time had come to reconsider the structure and the contents of the UPOV Test Guidelines. It was rather difficult to prepare Test Guidelines in the present way for a world-wide application and to agree on a longer list of characteristics to be useful world-wide. A shorter list used by all might be more applicable which then would be supplemented by further characteristics chosen according to agreed standardized principles. Others considered setting up an information system of all characteristics used for a given species, by the different member States, e.g. on Internet with a free exchange on a Bulletin Board or other means of exchanges within UPOV to be better than

a very long list of characteristics in the UPOV Test Guidelines. Many characteristics on a very long list might no longer contribute to the distinction but only complicate the Test Guidelines. Others considered a long list covering all characteristics useful as it would facilitate the selection of characteristics appropriate in a given country.

25. The Working Party finally agreed to continue discussions on this subject during its next session on the basis of a document raising all these points and proposing guidance on how to prepare future Test Guidelines to be prepared by experts from Germany before the end of the year, for circulation by the Office of UPOV. Comments on that document should be sent to the German expert before the end of March 1999 for preparation of an amended document or a summary of comments to be distributed in April 1999.

Revision of the General Introduction to Test Guidelines, Harmonization of States of Expression and Their Notes

26. The Working Party noted that the Technical Committee had approved a report on the results of a meeting of the Editorial Committee, the Chairmen of the various Technical Working Parties and the Chairman and Vice-Chairman of the Committee, in which a general discussion on the revision of the General Introduction to Test Guidelines and on the harmonization of the states of expression and the Notes in the Test Guidelines had taken place. The Editorial Committee and the Chairmen considered that the main purpose of the General Introduction was to lay down the basic principles according to which the Test Guidelines were established and should be applied and which should themselves be applied together with the individual Test Guidelines. In addition, the document should provide new experts with information on the basic principles for the testing of varieties. The document should not be too long: its size should be about what it was at present. Its presentation should be improved, however, and the Editorial Committee could imagine it being presented in a form similar to the booklet containing the UPOV Convention. The Editorial Committee considered that the General Introduction should not be changed too often, and therefore should really contain only basic principles and not details, which might change more frequently. There should only be a reference to another document which would contain a collection of detailed rules, such as the methods of COYD and COYU analysis or the document on the testing of uniformity in vegetatively propagated and self-propagated varieties (documents TC/33/7 and TC/34/5), as well as lists of definitions of certain statistical terms (e.g. population standard) to facilitate understanding by crop experts and of certain botanical terms (e.g. epiphyte) to facilitate understanding by TWC experts when they were approached for statistical help.

27. The Editorial Committee then went through document TG/1/2 and discussed and decided where changes in the present text were needed and who would have to draft the new wording. It entrusted parts for revision to the various Technical Working Parties or to individual experts, for instance the harmonization of states of expression to the expert from South Africa, the part on reference collections to the expert from France and the statistical parts to the TWC. It proposed to split paragraph 28 and prepare separate paragraphs for vegetatively propagated varieties and for truly self-pollinated varieties. It also proposed to change Part C of the document according to the new layout of the Test Guidelines and to copy certain rules from document TWF/28/9 separately into each of the individual sections of the Test Guidelines. It considered removing the information on the order of characteristics and including it in a separate document as apparently it was not all that basic and in practice was

not applied very strictly. After paragraph 49 on characteristics, a new paragraph would be included to take care of the special Annex to a certain Test Guidelines document that included electrophoretic characteristics as a third category. The part on the Technical Questionnaire would have to be adapted to the new layout and the whole document would have to be adjusted to the 1991 Act of the UPOV Convention. The members of the Editorial Committee and the Chairmen agreed to prepare comments and proposals in response to those comments, and also proposals already received as well as further comments, with the drafting of certain parts. The results would then be submitted to the various Technical Working Parties at their sessions, with a request for their comments which in turn would be submitted to the Technical Committee at its next session. The Committee asked the experts to submit any comments on documents TWF/28/7 and TWF/28/9 to the Office of UPOV.

28. The Working Party noted that in the revised document TG/1/2 it was recommended to fix the number of plants in the individual Test Guidelines. It also noted that it had not yet followed that proposal from the Technical Committee but continued to show minimum numbers. It was of the opinion that the numbers should not be fixed but Offices should have the possibility of increasing the number. By increasing the number in a predefined population standard, the α-error would not be affected and the β-error could only be reduced which would create no problem but only reduce the risk of wrong decisions. The Working Party therefore preferred to continue in the same manner.

New Methods, Techniques and Equipment in the Examination of Varieties, Including the Progress Report on the Work of the Working Group on Biochemical and Molecular Techniques and DNA Profiling in Particular (BMT)

29. The Working Party noted that the Technical Committee had noted with approval the report from the Chairman of the BMT which had held its fourth session at Cambridge from March 11 to 13, 1997, as reported in document BMT/4/21 and that the next session was scheduled to take place in Beltsville, United States of America, from September 28 to 30, 1998. At that session, discussions were planned on the following subjects: (a) Short presentation of research results or their follow-up on different species; (b) Assessment of variability within varieties; (c) Assessment of variability between varieties; (d) Statistical methods: Confidence intervals and accuracy of distance estimates; Alternative to dendrograms; Refinement of the analysis of molecular variance (AMOVA) for distinctness studies and as a tool to assess uniformity; Combination of information from diverse data types (AFLP, SSR, morphological data, etc.); (e) Position of the breeders on DNA profiling; (f) Use of DNA profiling methods by expert witnesses in disputes concerning essential derivation; (g) The use of DNA profiling for prescreening as a possible tool in DUS testing; (h) Possibilities and consequences of the introduction of DNA profiling methods for DUS testing; (i) Definition of the variety; (j) Future program of the BMT (date and place of the next session, if any).

Chairmanship

30. The Working Party noted that the Technical Committee had proposed to the Council, in view of the expiration of the chairmanship of Mr. Joël Guiard (France) with the closing of the forthcoming ordinary session of the Council in October 1998, that it elect

Mrs. Elise Buitendag (South Africa) as new chairman and Mr. Raimundo Lavignolle (Argentina) as new vice-chairman of the Technical Committee.

31. The Working Party noted that the Technical Committee had been informed that Mr. Aubrey Bould (United Kingdom) would retire at the end of June of the current year and would therefore not continue his chairmanship of the TWA after the scheduled session in June 1998. As no proposal for a new chairman had yet been formulated by the TWA, the Technical Committee agreed that exceptionally the TWA should make a proposal for a new chairman directly to the Council. The Working Party proposed to the Council that it elect Mrs. Françoise Blouet (France) as Chairman of the TWA.

Sixteenth Session of the Technical Working Party on Automation and Computer Programs (TWC)

32. Mr. M.-H. Thiele-Wittig gave a short report on the main items discussed during the last session of the TWC held the preceding week. The report on that session will be reproduced in document TWC/16/14 Prov.

Prescreening of Varieties

33. The Working Party noted that the Technical Committee had rediscussed the question of prescreening and noted the different views of the various Working Parties. In order to make progress in the discussions, the Technical Committee agreed that some concrete cases would have to be selected and the whole problem further investigated on the basis of them. It proposed to ask all Technical Working Parties to rediscuss the question of prescreening and to cite examples that would support their positions. For the TWA, the species *Poa* and potato were mentioned as possible examples and, for the TWO, roses. For roses there was already a good deal of additional information that would be helpful. In addition, it would underline the importance of ornamental varieties and the international trade in them. For the TWF, the species peach was mentioned. The Technical Committee also agreed that, in addition to developing models for the prescreening of varieties, it was very important to have an intensive exchange of information between the testing stations and the offices of member States. Only if they knew what varieties were protected or tested in other member States would they be able to check a complete collection of varieties to find all similar varieties which should be compared with a candidate variety. The expert from the United States explained that in his country there existed a large list of descriptive data which would be available on the Internet.

34. The expert from the Netherlands introduced document TWA/27/20 on the Prescreening of Varieties: Progress report on a Case Study in *Poa pratensis* and *Solanum tuberosum*. He recalled that *Poa pratensis* is an apomictic species in which it is not possible to select certain bands and in which all plants within a variety have the same genotype. In the prescreening, electrophoretic characteristics not in the Test Guidelines had been combined with seedling characteristics which could be observed before planting in the field. The electrophoresis method was not robust enough over the years, laboratories, gels and experts applying the method. Therefore it could not be used alone. In potato, electrophoresis characteristics were combined with light sprout characteristics to compare a candidate variety in a computer database with descriptions from other varieties. Also in this case, the electrophoretic characteristics could not be trusted alone; they were only used to confirm the morphological

differences between varieties, based on those routine Test Guidelines characteristics stored in the database which could be observed and compared before the planting or sowing of the trials.

35. The Working Party repeated all the arguments in favor and against the use of characteristics not included in the UPOV Test Guidelines and the need to reach a balance of the different risks involved. Some experts repeated that it was too risky to accept a difference in the electrophoresis band without having checked the uniformity as the difference could be caused by an off-type only and one would in this case wrongly not plant the variety in question for comparison in the field. It was also necessary to fix the minimum difference and to do that it was important to know the genetic control of the bands used. There had to be a possibility to limit the risk of taking a wrong decision. In the past, a regional reference collection had not involved a big risk but nowadays, especially in the ornamental species, a world reference collection was needed which required some screening to keep the number of varieties planted reasonable. The Working Party finally accepted the idea of prescreening and agreed that UPOV had to search for a good system to select all similar varieties to be grown.

36. Several experts insisted that the electrophoresis method was not robust enough to be used alone. Therefore it should only be applied together with other characteristics. Some experts were of the opinion that all information should, however, be collected on the same testing station or trial field in order to be applicable. In the prescreening, a larger difference had to be required to avoid eliminating a very similar variety. The comparison was therefore different from that of testing DUS where a small difference might be enough.

37. Characteristics less affected by the environment were preferable, for example, the characteristics resulting from protein electrophoresis. If there was hesitation in using electrophoresis alone, it should be combined with other characteristics. However, the whole screening process should be clearly defined and laid down in the description of the testing for the species concerned, e.g. in the Test Guidelines or in an annex to them.

38. Some experts considered that, in addition to traditional (morphological) characteristics for prescreening, other methods could be also envisaged as for example image analysis or even DNA methods.

39. However, before being able to do so, it was necessary in looking at particular cases to establish certain basic principles for prescreening irrespective of which methods were used. Only thereafter should it be decided where the rules were to be reproduced in the Test Guidelines. In order to make progress during its next session, the Working Party asked the expert from the Netherlands to prepare a draft for a protocol for the prescreening of *Poa pratenses* varieties and the experts from France for maize varieties. The two documents should be prepared before the end of 1998 and circulated by the Office of UPOV for comments before the end of March 1999, for documents to be distributed in May 1999.

40. In connection with the discussions on prescreening, the Working Party noted that prescreening was mainly a question for the system of government growing tests and to a lesser extent for the system of testing by the applicant or breeder where the possibility of six months' opposition after publication of the description before the final granting would allow correction by third parties of oversights during the testing. For the description, breeders were recommended to use as many characteristics as possible as that would increase their

possibility of defining their rights. In case of opposition, it might be possible that additional tests were required, if need be, with additional varieties.

Use of Electrophoresis in Cross-fertilized Varieties

41. The Working Party noted document TWA/27/11 reporting on the meeting of the TWA Subgroup on Electrophoresis held in Geneva on April 3, 1998. In that meeting ASSINSEL had reported that it could not accept electrophoretic characteristics in parallel to traditional phenotypic analysis as a last resort. It had agreed that electrophoretic characteristics were very useful, but not for the study of distinctness of synthetic forage varieties. The experts had then discussed criteria for the acceptance of distinguishing characteristics, which should be the same as for any other characteristic. The experts had referred to the creation of a special category of characteristic in the annex to the Test Guidelines for Wheat, Barley and Maize, since the majority of the UPOV member States was of the view that it was not possible to establish distinctness solely on the basis of a difference found in a characteristic derived by using electrophoresis. The experts had discussed the additional problem of dealing with frequencies for distinctness where there could not exist uniformity but only stability in those frequencies. The advantages of additional characteristics had been discussed and the disadvantages of reducing the minimum distance and opening the door wide to plagiarism. The remaining problems with the methods were mentioned, their sensitivity leading to different results when slight changes occur. The problems of interpretation of the results were highlighted and the statistical questions of an optimal sample size which may be prohibitively high.

42. The Subgroup had finally stated that too many questions still remained open. It had also noted that the introduction of electrophoretic characteristics raised many additional questions which still had to be solved. Therefore, other Technical Working Parties should also study the use of electrophoresis in cross-fertilized varieties. Particularly the Technical Working Party for Vegetables (TWV) and Technical Working Party for Ornamental Plants and Forest Trees (TWO) (for seed propagated varieties) should give their opinions and the Technical Working Party on Automation and Computer Programs (TWC) should answer the questions on sample size, the optimum method for the establishing of distinctness and whether and how greater minimum distances could be prefixed to discourage plagiarism. Moreover, the effect of its possible use in the certification and national listing system should be considered, and also whether VCU results could be used in combination with electrophoretic characteristics to establish distinctness. However, no system would be acceptable which would not enable the checking of uniformity and stability in the characteristics finally used to establish distinctness.

43. The main conclusion of the Subgroup was that electrophoretic characteristics should not have an independent function for cross-fertilized varieties in DUS testing; a difference in an electrophoretic characteristic alone should not be sufficient to establish distinctness. It should only have a supportive function if the crop expert was convinced by other morphological or physiological characteristics that the variety was different.

44. The Subgroup had reminded experts that, in all studies, it should be kept in mind that the advantage achieved from the method should be weighed against the effect it might have on the varieties, on the breeder and on the whole plant variety rights (PVR) system. If it would create more problems than it solved, it should not be accepted and discussions should not be pursued further.

45. The Working Party agreed that the document summarized well the present state of development and thinking. It only required to change a few parts which may lead to wrong conclusions, mainly paragraphs 12, 17 and 21. Paragraph 12 referred to a problem variety and should not be understood as describing the situation in general. The variation within varieties reported in paragraph 17 were mentioned by breeders but could not be confirmed by other experts. Normally varieties showed lower variation within varieties than between varieties. The problems of interpretation were not shared by all experts and reference was made to a successful ring test several years ago. Other experts insisted, however, that, in addition to a good genetic knowledge of the bands, the most important factor was a very clear definition of the method and its strict application, as small things such as change of temperature or replacement of a reagent could completely change the results.

46. The Chairman recalled the statement made by a breeder the previous day that ASSINSEL had discussed the possible use of characteristics derived by electrophoresis for DUS testing during its last Congress and had highlighted the following three points:

(a) the burden for the breeder of maintaining the allele frequencies of his variety uniform and stable;

(b) the facilitation of plagiarism and the weakening of the plant variety rights (PVR) system, as it was very easy to select a “new variety” out of an existing one.

(c) At its Congress, ASSINSEL had not only requested the exclusion of such characteristics from the UPOV Test Guidelines or their Annexes, but had also firmly requested UPOV not to accept them for DUS and to officially exclude them from DUS tests in ryegrass. The position had not been addressed for other cross-fertilized species.

47. The recommendation in paragraph 25 to use electrophoretic characteristics only in a supporting function if the crop expert was convinced that the candidate variety was a different variety, raised the question why it was needed at all if the expert was already convinced of the minimum level needed for him to use those characteristics. Was there a second lower level of minimum distance which could be sufficient if supported by electrophoretic evidence? In the case of statistical calculations requiring 1% significance, was 5% enough if supported by other evidence?

48. Some experts questioned why UPOV agreed on precise statistical methods and recommendations, going into very small details, to reach harmonized results between member States if the harmonized results were then jeopardized by using other evidence obtained from electrophoresis or other methods. Before using electrophoresis as additional evidence, a certain minimum distance in the normal characteristics should be fixed as to support an expert’s conviction. How could stability of the electrophoretic differences be checked?

49. Some other experts explained that the additional evidence could not only be used to support an expert’s conviction of the existence of a distinct variety but also confirm the rejection of a variety for lack of distinctness. “Evidence” in this context was not a clear difference in one characteristic but the total difference between varieties, the sum of all differences. If that was not sufficient even though the expert was convinced that here were two varieties, additional evidence could be used to support his conviction.

50. The expert from France explained that in all member States there were small differences; she could therefore only speak for France. In France, the technical expert who had done the test would not take a decision alone; he had to convince a group of other experts of the distinctness of the variety. In this process not only results of tests on the basis of UPOV Test Guidelines were taken into account. They formed the basis, but if exceptionally they were not enough, the Committee could request further evidence.

51. The Working Party finally considered how to proceed further. It agreed that the document TWA/27/11 reported the current state of the art concerning characteristics derived from electrophoresis but more information was necessary, especially on the granting procedure and procedure before the courts in case of objections, on the position of the technical expert in the whole process, on the part the Test Guidelines play and the part of other evidence and other methods. The expert from the Netherlands offered to prepare a paper for the next session.

52. The Working Party saw the need for several further questions to be explored in further papers. The expert from France offered to find out the place of electrophoresis in the testing, the legal aspects and the interpretation of the results.

New Alleles in Cereals

53. The Working Party noted document TWA/27/23 introduced by the expert from the United Kingdom and document TWA/27/19 introduced by the expert from Germany. Both documents dealt with the problem of new alleles in barley which could only be identified by one of the two methods mentioned in the Draft Test Guidelines for Barley. In that document (TG/19/10), UPOV had agreed to recommend polyacrylamid gel electrophoresis in the presence of sodium dodecyl sulfate (SDS PAGE) for the analysis of hordeins. At the same time it had agreed, however, that if only C-(Hor-1) and B-(Hor-2) hordeins were of interest, then the standard reference acid PAGE method of ISTA could be used. Several new allele expressions had been proposed for B- and C-hordeins which could only be detected with the SDS PAGE method. The question was whether under those circumstances UPOV had to decide on the use of one single method only, the SDS PAGE method, to avoid being blocked or hampered by a second method which apparently was less able to detect allele expressions, or whether UPOV should only accept those allele expressions which both methods were able to detect.

54. In the discussion, several laboratory experts considered it a good safeguard to be able to check a newly found allele expression with a second method to avoid accepting artifacts. On the other hand the mandatory combination of the two methods would almost freeze the *status quo* and hamper development as each method would distinguish alleles which the other method could not distinguish and which would accordingly be precluded from use. The two methods would also not find exactly the same polymorphism and it could be argued by some experts that they were really observing two different characteristics which were rather closely linked but different. One expert compared them to the characteristics of growth habit of a variety observed in single-spaced plants and in drilled rows. Both were the growth habit of the same variety but the expressions were different. Both might be able to be used for distinction. Therefore it might be considered to really have five characteristics (Hor-1 SDS PAGE; Hor-1 Acid PAGE; Hor-2 SDS PAGE; Hor-2 Acid PAGE and Hor-3 SDS PAGE).

55. Several experts warned, however, that such an approach would lower the minimum distance. One would also lose the possibility of confirming the existence of an allele by another method. The biggest problem would be that the use of a second method would create new characteristics which were almost identical to existing characteristics.

56. The Working Party therefore finally decided to keep document TG/19/10 unchanged, to study the whole problem and the consequences of any proposed solution further, to gain further knowledge and at present to accept for B-hordein and C-hordein only those new allele expressions which could be identified by both methods mentioned in the above documents.

Uniformity Criteria in Measured Characteristics of Different Categories of Varieties

57. The Working Party noted document TWA/27/9 Rev. on Uniformity Criteria in Measured Characteristics of Different Types of Varieties, introduced by experts from Germany. The document presented results that suggested that, depending on the species and the nature of the characteristic concerned, it may be necessary to determine uniformity, using criteria which are not met by the recommendations in document TG/1/2. Such conditions may arise in crops or types of varieties considered to be self-pollinating and for characteristics with a high genetical variation between varieties or a high environmental variation within varieties. As present in rape seed for example, the characteristic plant height provides good differentiation between varieties in the collection. But using plant-by-plant measurements or visual observation it is not possible to reliably identify off-types and to check uniformity for the characteristic. If the characteristic is recorded by plant-by-plant measurements, relative tolerance limits may provide a useful criterion for assessment of uniformity.

58. Relative tolerance limits involve comparison with similar known varieties. Therefore, the definition of the group of similar varieties is essential for the calculation of the tolerance limit. “Type of variety” is a grouping criterion taking into account the genetical variation within the variety resulting from the breeding method. In dependency of crop, characteristic or size of the reference collection, such a grouping criterion could constitute a stable standard which could be maintained from year to year. Stability of a standard could only be achieved if the number of reference varieties is large enough. Appropriate grouping has to be checked separately for each characteristic. If all reference varieties exhibit the same variation in the respective characteristic, grouping is not necessary.

59. With the German experience, the conditions are nearly the same for all measured characteristics in oilseed rape. If the characteristics can be recorded by measurements with reasonable effort, it is proposed to assess uniformity by using relative tolerance limits based on the whole reference collection. In rye phenotypical variation corresponds much more with the expected variation in different categories of varieties, and grouping is required for uniformity assessment. For some characteristics, for example seedling measurements, relative tolerance limits should be applied in all categories of varieties. Therefore it is essential to consider much more the nature of a characteristic, when new DUS Test Guidelines are developed for a species or a group of species.

60. Several experts disagreed with the results presented in the above document as they considered them to be affected by the different definitions of variety and especially by the use of parent lines which were not inbred lines with uniform, identical plants. Therefore without

the removal of off-types before the taking of measurements the diagrams were difficult to interpret and it was not possible to draw conclusions from the study.

61. Therefore more information and more details were necessary, for example the identification of the varieties in the diagrams to be able to verify whether they had been considered to fulfill the uniformity requirements or not, which variety type they were (e.g. whether they were real inbred lines or only parental lines which consisted of narrowed populations), etc. The expert from Germany would prepare a new document before the end of the year.

Uniformity Testing in Oil Seed Rape

62. Document TWA/27/15 was introduced by experts from France. The document discussed how male sterile lines should be tested and whether it was possible to distinguish different versions of a line. It explained the different ways to create lines using cytoplasmic (CMS) or nuclear (PgS) sterility.

63. In the testing of CMS varieties it was necessary to require the submission of the maintainer line (B) and to request that A was distinct, uniform and stable and that B was very similar to A and uniform and stable so as to enable reproduction. B would not automatically be protected but only on special application by the applicant/breeder.

64. In the case of nuclear sterility 50% male sterile plants and 50% male fertile plants exists, the male fertile being destroyed by a herbicide to which only the fertile plants are susceptible. The question arose what parts should be protectable, either : (i) A pure, (ii) the mixture or (iii) B pure. The protection of A pure would create technical problems as after destruction of the fertile plants one would not have an even plant density. This would create and undesirable lack of uniformity in the plot. The question was whether one could protect the mixture with two components or only the components alone. The testing of the mixture with two genotypes could be possible but did not seem advisable as an assessment of uniformity and distinctness was difficult. To test the mixture one would have to test the components in the same way as in maize.

65. What therefore remained was to protect pure B (the original parent made partly sterile). This could be the wisest solution as one would work with pure material, which would not be a GMO variety in the case of PGS system.

66. The breeder present reported that in reply to a questionnaire circulated within ASSINSEL breeders had stated that they wanted protection of the mixture. ASSINSEL had started further discussion on that subject and had created a subgroup. Several experts stated that it was not possible to protect something which could not really be tested. One could not force the breeder to ask for protection of B only, but could refuse protection of the mixture. Others mentioned that the B line was not maintained alone, but only in a mixture. Some countries had therefore considered whether they could protect the mixture. As applications were already pending in the first and second year of test, a common understanding in UPOV was desirable to avoid States from going different ways.

67. With respect to the question whether different types of male sterile (m.s.) lines could be protected, the Working Party noted that in oil seed rape so far in addition to the differences in

the m.s. mechanism, differences in other characteristics had so far been found, especially in the size of petals. They could therefore be distinguished just like any other line or variety without having recourse to the m.s. mechanism. The breeder present reported that in ASSINSEL about half of the breeders had expressed themselves in favor and half against the use of restorer lines to establish distinctness. ASSINSEL would continue its discussions and also discussing the use of molecular markers in this context.

68. Some experts stated that if the use of restorer lines was accepted for distinctness, one would have to grow and group the varieties in the field according to their different systems of production. Others, however, considered that UPOV had so far restricted its tests to phenotypical expressions. If restorer lines were used for distinctness, this would no longer be the case.

69. The expert from France confirmed that in a very few cases with maize the progeny of crosses had been used in very close lines to establish distinctness. This was only to support small observed differences and not in cases where no differences in other characteristics had been seen. The same was true for oil seed rape.

70. The Working Party finally agreed that if there were no morphological (or other phenotypical) differences between lines with differing m.s. mechanisms, the lines should not be separately protected. The differing methods might, however, be patentable. The whole question needed further study. The most important was to keep each other informed of developments and of decisions taken. Before a common decision could be reached it would be wise to collect as much information as possible and avoid taking a decision too early. It should always be kept in mind that in a court case the technical expert would be called to justify his technical approach to applying the basic legal rules.

Distinctness Testing in Oil Seed Rape

71. The Working Party noted document TWA/27/10 on distinctness testing in oil seed rape with different male sterility systems, introduced by experts from Germany. The document lists the different male sterility systems (CMS Polima, CMS Ogura, MSL (Male Sterility NPZ-Lembke), Seedlink™ (PGS-System)) and the obvious genetic differences between them. It states that distinctness based on test cross with known restorers was not recommended as it (and also the granted protection) would be dependent on the existence of another variety, the pollinator with specific restoration ability.

72. As most of the subject had already been dealt with during the discussions on uniformity testing in oil seed rape (see paragraphs 62 to 70), the expert from Germany concentrated on the problem of using non-uniform segregating restorer lines which produce incompletely restored hybrids (up to 30% sterile).

73. When evaluating the hybrid against the rules laid down in document TG/1/2, the Working Party had to agree that in a three-way hybrid segregation was permitted, provided the restorer was sufficiently stable and always the same segregation was obtained. For single crosses, however, segregation was not permitted. Therefore the single cross would not meet the uniformity standards. For this reason, some experts proposed to only protect A and RR and rr.

74. It would, however, be difficult to refuse protection for the single cross hybrid, but approve it for national listing. Some experts therefore wondered whether the hybrid really was a single cross and not an F_2, a narrowed population, however, not in equilibrium.

75. The UPOV Convention required the uniformity to be judged according to the method of propagation. The question was posed whether that case justified a deviation from TG/1/2 with a different interpretation of the Convention, as the hybrid was stable. The reason why the breeder would not make his restorer line completely uniform was that uniformity increased the glucosinolate content of the hybrid. Several experts warned that such precedents might open the door for other unwanted exceptions.

76. The Working Party finally agreed to continue discussions on this problems on the basis of updated information to be supplied from Germany. It considered it very important to be informed of developments in Germany.

Final Discussion on Test Guidelines

Test Guidelines for Soya Bean

77. The Working Party noted documents TC/34/9 and TWA/27/11 raising some problems with respect to document TG/80/5(proj.) presented to the Technical Committee during its session at the end of March 1998 and adopted by that Committee subject to clarification of some open points.

78. The expert from Germany proposed to change the naming of the band to numbers and to consider what to do with the present naming (e.g. characteristics 25 and 27 where the expression would have the same name as the locus) if in future new alleles appeared for those characteristics. Moreover, there would be no possibility of adding new alleles and the states would not take into account the distance of migration. The Working Party agreed not to change the names of the bands, as the nomenclature used was that approved by the Soybean Genetic Committee apart from the addition of the small letter “a” as follows:

25:	Genotype	Ep a / EP a	1
		ep n / ep n	2
27:	Genotype	Dia3 a / Dia3 a	1
		dia3 n / dia3 n	2

79. In a footnote the following amended explanation would be given: “The nomenclature used for the alleles is that approved by the Soybean Genetics Committee (PALMER et al, 1987). However, “a” and “n” have been added to the alleles of gene loci Ep and Dia3 to facilitate their distinction from the denomination of the genes and to give the possibility to designate new alleles in future.” The Working Party furthermore added, in the description of the method to be used, two chemicals (Hanker Yates and Menadoine) to paragraph 3.3 and corrected the reference in the second line of 4.3.2.3 to 4.3.1.3.

80. Some experts had difficulties in accepting the presentation of the zymograms as in many cases instead of one single band several bands were indicated for one allele expression. It was stated that that was a consequence of accepting an internationally agreed nomenclature. The

presentation would cover the genetic product and some artifact bands. A first trial to eliminate as a consequence the figure "1" behind Pgd and Pgm was finally not accepted.

81. Because several points could be not clarified and solved to the complete satisfaction of all experts but in order not to delay the otherwise already adopted document, the Working Party agreed to insert a footnote on the first page of the Annex stating that the Annex had only been preliminarily accepted and might be amended when more information became available.

Final discussions on draft Test Guidelines for Rye

82. The Working Party noted that no comments had been received to document TG/58/4(proj.). It therefore only made some minor editorial changes in that document before it was presented to the Technical Committee for adoption.

Working Paper on Draft Test Guidelines for Sunflower

83. The Working Party noted documents TWA/27/2, TWA/27/4, TWA/27/5 TWA/27/16 and TWA/27/25 and a report on proposals made by the Subgroup which had met the preceding day and made the following main changes in document TWA/27/5:

(i) Conduct of Tests: To have paragraph 5 amended requiring at least 10 seedlings to be tested for inbred lines, 4 seedlings for single hybrids and 10 seedlings for three-way hybrids.

(ii) Methods and Observations: To have in paragraph 3 after "uniformity" the words "including electrophoretic characteristics" inserted and in the last part of the second sentence of paragraph 6 starting with "as well as ..." replaced by "and isogenic fertile plants with a male sterile line in total." Paragraph 7 should, after the first unchanged sentence, read as follows: "All cases where at least one locus is heterogeneous with one allele coming from the female in all loci should be considered an out-cross (e.g. Ax). All other cases where two foreign alleles are present in one locus should be considered off-types."

(iii) Grouping of Varieties: To have a sentence included before paragraph 2 reading: "In the first instance, the varieties should be separated into inbred lines and other varieties."

(iv) Characteristics and Symbols: To have the second sentence of paragraph 2 deleted.

(v) Table of Characteristics:

Characteristics

6 To have the example varieties for states 1 and 3 deleted; the experts from Spain to propose new example varieties to be checked by experts from France

7 To have the example variety HA 393 for state 1, subject to no objections from France

10 To have the additional example variety HA 290 for state 1 and HA 336 deleted

11 To have the additional example variety HA 400 for state 3

13 To have the additional example variety HA 302 for state 1 (to be checked by France) and RHA 273 for state 3, and to have HA 234 deleted

15 To have the additional example variety HA 821 for state 3

24 To have the additional example variety H 55.9.2.1 for state 7

16, 22, 26.1 and 26.2 To remain unchanged, the expert from France to check the example varieties for characteristics 26.1 and 26.2

30 To have the example variety HA 303 deleted

31 To have the example variety RHA 270 deleted

36 To have the wording completed by the words "relative to size" and to have the example variety HA 290 deleted and replaced by RHA 22 (to be checked by France)

42 To be deleted as so far no detailed standardized protocol had been set up and checked in a ring test; the experts from Spain to prepare a draft for the method and the protocol for circulation to the Working Party

43.1-43.3 To be deleted and to have the protocol first studied by the Working Party and agreement reached on races and on standard varieties

(vi) Explanations on the Table of Characteristics: To have the drawings after state 3 of characteristic 15 and all drawings of characteristic 35 improved by the expert from France

(vii) Technical Questionnaire: To have paragraph 4.2(b) amended to read:

"(b) hybrid
- male sterile hybrid
- male fertile single hybrid
- three-way hybrid"

(viii) Annex

Part II

(a) To have only the allele expressions at the following loci kept, with the example varieties as used during the ring test: 42. Me 1; 43. Pgd 1; 44. Pgi 2; 45. Shah 1 and 46. Pgm 4. In addition, the second state of expression at locus Pdg 1 and on locus Shdh 1 were deleted. The problem connected with the overlapping of Pgm 4 with the unused Pgm 3 will be explained in the explanations.

(b) In the Subgroup meeting and partly in the main session, a large part of the discussions with respect to electrophoresis centered on the problem of the overlapping in Pgm 4 of another gene of which the genetic control was not known and which therefore was

not intended to be used for DUS testing but which could confuse experts reading the electrophoretogram. It was finally called Pgm 3.

(c) The second major problem was the previously proposed use of Acp 1 which needed good migration to enable detecting the small difference and which was visible in the hybrid only as a smear. As the difference was obviously too small and the reliability of the interpretation of the electrophoretogram could not be guaranteed it was deleted.

(d) The third major question was the proposed use of Mdh where the same problem of overlapping with a faint band as for Pgm 3 existed and in total three loci were overlapping in the same band. As a result, differences were visible only as differences of intensity of the band. While some experts were confident to be able to separate the three loci, others were afraid that that was not always possible. As a difference was only visible as small difference in the intensity of the band, it was difficult to detect off-types and therefore to check uniformity. It was therefore decided to delete Mdh but to continue studying it and especially to make a new blind ring test to find out whether the laboratory experts would always come to the same results and the same interpretation of the results.

Part III

For the protocol of the method, the text with the wording as used in the ring test would be copied. In the schematization the gene products would be indicated as for maize. In the text for the recognition of the alleles encoding Pg1 in the last line of page 5, the word “fast” had been corrected to “slowest.”

The experts from France would provide a complete amended Annex in English and French, the expert from Germany will provide the German translation, and the expert from Spain the Spanish translation. All missing information for the Test Guidelines would be provided to the Office of UPOV by the end of October 1998.

Working Paper on Test Guidelines

84. Time did not permit the Working Party to enter into detailed discussions on the working papers other than the one for sunflower. In order to advance discussions on Test Guidelines, the Working Party agreed in a similar way to the other Technical Working Parties to select for each of the species in the planned list of species one leading expert and to ask the other countries whether they had a special interest in that species and would be willing to cooperate with the leading expert by correspondence in the preparation of a more advanced document. The document would then only be discussed in the full session of the Working Party if it was in a fairly final stage and only a few changes might be required before its presentation to the professional organizations for comments. The leading expert would also check his draft against the documents TWF/28/7 and 9. If there already existed a fairly final document comments would have to be sent to the leading expert before October 1, 1998, for a new document to be prepared before the end of January 1, 1999. Otherwise the leading expert would prepare a document to be circulated before the end of the year for comments to be sent to the leading expert before the end of March for a new document to be distributed in April 1999. For details of the leading expert and the species concerned, see the table in Annex II to the report. Other countries not having participated in the session were invited to inform the

leading expert if they were interested in participating in the preparation of a document for a given species.

85. The Working Party noted the plans to separate the existing Test Guidelines for Broad Bean and Field Bean and those for Turnip and Turnip Rape. It considered it unfortunate to start immediately with separate documents. It therefore proposed to have two subgroups, one for Broad Bean and Field Bean, and one for Turnip and Turnip Rape, of both agricultural and vegetable experts which would start from a single draft each and mark those characteristics which really had to be split. Only at the end of the revision, if the number of different characteristics were too high, two separate Test Guidelines should be foreseen. In that case, however, those characteristics should be stated which would enable the two groups to be separated.

Status of Test Guidelines

86. The Working Paper agreed that the Draft Test Guidelines for Rye should be sent to the Technical Committee for adoption and the Draft Test Guidelines for Sunflower should be sent to the professional organizations for comments. It also agreed to rediscuss the Test Guidelines for the other species mentioned on the agenda at its next session if the leading experts had been able to prepare a fairly final draft in good time before the session.

Future Program, Date and Place of Next Session

87. At the invitation of the expert from Canada, the Working Party agreed to hold its twenty-eighth session at Ottawa, Canada, from June 22 to 25, 1999. During the session, the Working Party planned to discuss the following items:

1. Short reports on special developments in plant variety protection in agricultural crops (oral reports)

2. Important decisions taken during the last sessions of the Technical Working Party, the Technical Working Party on Automation and Computer Programs, and the Technical Committee

3. Prescreening of varieties (the Netherlands and France each to prepare a document with a protocol on *Poa pratensis* and maize respectively)

4. Use of electrophoresis or other supporting evidence in DUS testing (the Netherlands and France to prepare one document each)

5. Uniformity criteria in measured characteristics of different categories of varieties (Germany to prepare a document)

6. Oil seed rape male sterility systems (Germany and France to report on the status and developments)

7. Proposals for guidance for the preparation of future UPOV Test Guidelines (Germany to prepare a document)

8. Final discussions on draft Test Guidelines for Sunflower

9. Discussion on working papers on Test Guidelines for:

- *Bromus* (TWA/23/13, TWA/24/6; France and Uruguay to prepare a document)
- Cotton (Revision) (TG/88/3, TWA/26/8, TWA/27/3; Spain to collect comments)
- Field Bean (TG/8/4+Corr., TWV/30/15; the United Kingdom to prepare a single draft in a subgroup)
- Fodder Radish (TWA/27/8; Germany to prepare a document)
- Industrial Chicory (TWV/30/19, results from the TWV)
- Lotus (Uruguay to collect comments)
- Rice (Revision) (TG/16/4, TWA/24/12; Spain to collect comments)
- Subterranean Clover (TWA/27/12; Australia to collect comments)
- Sugarcane (TWA/27/6; UPOV to collect comments)
- Swede (TG/89/4, TWV/31/4; Germany to collect comments)
- Tobacco (TWA/26/9; Greece to collect comments)
- Turnip, Turnip Rape (TWA/27/13 and 21; Finland, the United Kingdom, results from a subgroup)
- White Mustard (TWA/27/7, Germany to collect comments)
- Cocksfoot (France to prepare a document)
- Tall Fescue, Meadow Fescue (France to prepare a document in cooperation with Germany)

Visits

88. In the afternoon of June 24, the Working Party visited the National Seed Testing Station where it received an explanation on the study of purity analysis with image analysis, saw the pathology laboratory with its nemathology and the precautions taken with the residues of the tests and received information on the studies in the germination laboratory. In the evening of June 24, the Working Party visited the Community Plant Variety Office of the European Union (CPVO) where it received detailed information on the work of the Office, its past achievements and its plans for the future. In the afternoon of June 24, the Working Party visited the GEVES trial station in Brion where it saw field trials mainly on varieties of vegetable species but also some on ornamental and fruit species.

89. This report has been adopted by correspondence.

[Two annexes follow]

ANNEX I

LIST OF PARTICIPANTS*

I. MEMBER STATES

ARGENTINA

Raimundo LAVIGNOLLE, Secretaría de Agricultura, Pesca y Alimentación, Dirección de Registro de Variedades, Instituto Nacional de Semillas, Av. Paseo Colón 922, piso 3, of. 347, 1063 Buenos Aires (tel.+54-1-3492 445, fax +54-1-3492 417, e-mail: pmiram@ sagyp. mecom.ar)

AUSTRIA

Barbara FÜRNWEGER (Mrs.), Leiterin der Abteilung für Sortenschutz und Registrerprüfung, Bundesamt und Forschungszentrum für Landwirtschaft, Postfach 400, Spargelfeldstraße 191, 1226 Wien (tel. +43-1-28816-4172, fax +43-1-28816 4211, e-mail: bfuernweger@bfl.at)

BULGARIA

Juliana ATANASSOVA (Mrs.), State Variety Testing Commission, 1a "Mednikgrska" str., 1040 Sofia (tel./fax +359-2-39 32 08)

CANADA

Valerie SISSON (Ms.), Plant Breeders' Rights Office, Canadian Food Inspection Agency (CFIA), 59 Camelot Drive, Nepean, Ontario, K1A OY9 (tel. +613-225-2342,
fax +613-228 6629, e-mail: vsisson@em.agr.ca)

CZECH REPUBLIC

* Ji• í SOUEEK, Head, Department of Plant Breeders' Rights, ÚKZÚZ–Central Institute for Supervising and Testing in Agriculture, Za opravnou 4, 15006 Praha 5-Motol
(tel. +420-2-572 11 755, fax +420-2-572 11 752, e-mail: soucek@ooz.zeus.cz)

* Pavel PA" ÍZEK, ÚKZÚZ–Central Institute for Control and Testing in Agriculture, Plant Variety Testing Branch, Hroznová 2, 656 06 Brno (tel. +420-5-4321 7649,
fax +420-5-432 12440, e-mail: parizek@ooz.zeus.cz)

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* Participants marked with an asterisk also participated in the Subgroup Meeting on Sunflower, Angers, France, June 22, 1998

DENMARK

Gerhard DENEKEN, Director, Department of Variety Testing, Postbox 7, Teglvaerksvej 10, 4230 Skaelskoer (tel. +45-58-16 06 00, fax +45-58 16 06 06, e-mail: gerhard.deneken@agrisci.dk)

Jens Martin JENSEN, Department of Variety Testing, Postbox 7, Teglvaerksvej 10, 4230 Skaelskoer (tel. +45-58-160 600, fax +45-58-16 06 06, e-mail: jensm.jensen@agrisci.dk)

FINLAND

Kaarina PAAVILAINEN, Plant Production Inspection Centre, Seed Testing Department, P.O. Box 111, 32201 Loimaa (tel. +358-2-760 56 247, fax +358-2-760 56 220, e-mail: kaarina.paavilainen@mmm.fi)

Leena PIETILÄ (Mrs.), Seed Testing Department, P.O. Box 111, 32201 Loimaa
(tel. +358-2-760 56 216, fax +358-2-760 56 220, e-mail: leena.pietila@mmm.fi)

FRANCE

* Mireille BOURGOIN-GRENÈCHE (Mrs.), GEVES, Le Magneraud, B.P. 52, 17700 Surgères, (tel. +33-5 46 68 30 31, fax +33-5-46 68 31 00, e-mail: mireille.bourgoin@geves.fr)

Françoise BLOUET (Ms.), GEVES, La Minière, 78285 Guyancourt Cedex
(tel. +33-1-30 83 35 82, fax +33-1-30 83 36 78, e-mail: francoise.blouet@geves.fr)

* Vincent CELLIER, GEVES, La Minière, 78285 Guyancourt Cedex (tel. +33-1 30 83 36 23, fax +33-1 30 83 36 29, e-mail: vincent.cellier@geves.fr)

[1] Philippe CORDON, GIP GEVES Le Magneraud, 17700 Surgeres (tel. +33-5 46 68 30 29, fax 33-5-46 68 31 00)

Yvette DATTÉE (Mrs.), GEVES, La Minière, 78285 Guyancourt Cedex,
(tel. +33-1-30.83.36.20, fax +33-1-30 83 36 39)

* Joël GUIARD, Directeur adjoint, GEVES, La Minière, 78285 Guyancourt Cedex
(tel. 0033-1-30.83.35.80, telex 698 450, fax 33-1-30 83 36 29, e-mail: joel.guiard@geves.fr)

GERMANY

* Georg FUCHS, Bundessortenamt, Osterfelddamm 80, 30627 Hannover
(tel. +49-511-95 66 639, fax +49-511-56 33 62)

* Johannes-Peter OHMS, Bundessortenamt, Osterfelddamm 80, 30627 Hannover
(tel. +49-511-95 66 630, fax +49-511-56 33 62)

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[1] Participated only in Subgroup Meeting on Sunflower, Angers, France, June 22, 1998

* Beate RÜCKER (Mrs.), Bundessortenamt, Osterfelddamm 80, 30627 Hannover (tel. +49-511-95 66 650, fax +49-511-56 33 62)

HUNGARY

* György MATÓK, Technical Adviser, National Institute for Agricultural Quality Control, P.O. Box 30,93, 1525 Budapest 114 (tel. +36-1-2125 800, fax +36-1-2125 800)

JAPAN

Minoru TAKEDOMI, Seeds and Seedlings Division, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8950 (tel. +81-3-3591 0524, fax +81-3-3502 6572)

NETHERLANDS

Huib GHIJSEN, CPRO-DLO, Postbus 16, 6700 AA Wageningen (tel. +31-317-4768 88, fax +31-317-418 094, e-mail: h.c.h.ghijsen@cpro.dlo.nl)

POLAND

* Julia BORYS (Mrs.), The Research Centre for Cultivar Testing, 63-022 Slupia Wielka (tel.+48-61-285 2341, fax+48-61-28 53 558, e-mail: coboru@bptnet.pl)

* Urszula WIATR (Mrs.), The Environmental Station for Cultivar Testing, 63-022 Slupia Wielka, (tel. +48-61-28 52 307, fax +48-61-28 53 558)

SLOVAKIA

Bronislava BÁTOROVÁ (Mrs.), Central Agricultural Controlling and Testing Institute, Matúskova 21, 833 16 Bratislava (tel. +421-7 815 923 11, fax +421-7 375 454)

Zuzana HUDECOVA (Mrs.), Central Agricultural Controlling and Testing Institute, Matúskova 21, 833 16 Bratislava (tel. +421-7 375 454, fax +421-7 375 454)

SOUTH AFRICA

* F.H. NEL (Mrs.), Directorate Plant and Quality Control, Private Bag X258, Pretoria 0001, (tel. & fax +27-12-808 0364/5)

SPAIN

* Luz Maria PAZ VIVAS, Subdirección General de Semillas y Plantas de Vivero, Ctra. de La Coruña, km. 7,5, 28040 Madrid (tel. +34-91-347 41 88, fax +34-91-347 41 68)

* Cecilio PRIETO MARTIN, Subdirección General de Semillas y Plantas de Vivero, José Abascal 4, 28003 Madrid (tel. +34-91-347 6963, fax +34-91-594 2768)

Mariano DEL FRESNO, Subdirección General de Semillas y Plantas de Vivero, José Abascal 4, 28003 Madrid (tel. +34-91-347 6927, fax +34-91-594 2768, e-mail: fresno@ ispv.inia.es)

SWEDEN

Ulf KJELLSTRÖM, Swedish Seed Testing and Cert. Institute, Onsjövägen, 268 81 Svalöv (tel. +46-418 667 407, fax +46-418 667 408)

UNITED KINGDOM

* Aubrey BOULD, Technical Adviser, Plant Variety Rights Office and Seeds Division, Ministry of Agriculture, Fisheries and Food, White House Lane, Huntingdon Road, Cambridge CB3 OLF (tel. +44-1223-34 23 84, fax +44-1223-342 386, e-mail: a.bould@pvs.maff.gov.uk)

Michael CAMLIN, Department of Agriculture for Northern Ireland, Plant Testing Station, 50 Houston Road, Crossnacreevy, Belfast BT6 9SH (tel. +44-1232-548 000, fax +44-1232-548001, e-mail: camlinm@dani.gov.uk).

URUGUAY

* Carlos GÓMEZ ETCHEBARNE, Director División Registros, Instituto Nacional de Semillas - INASE, Avda. Millán 4703, 12.900 Montevideo (tel. +598-2-309 79 24, fax +598-2-309 60 53)

II. OBSERVER STATES

GREECE

Apostolina LIOUSSA (Mrs.), Ministry of Agriculture, Variety Research Institute of Cultivated Plants, 574 00 Sindos - Thessaloniki (tel. +30-31-796 264, fax +30-31-799 392, e-mail: varinst@spark.net.gr)

SOUTH KOREA

Keun Jin CHOI, Examiner, National Seed Management Office, 433 Anyang 6-dong, Anyang, Kyunggi-do 430-016 (tel. +82-343-46 2432, fax: +82-343-48 12 16, e-mail: kjchoi@hanmail.net)

In Tae BAE, National Seed Management Office, 433 Anyang 6-dong, Anyang, Kyunggi-do 430-016 (tel. +82-343 46 24 32, fax +82-343-48 12 16)

III. EXPERTS

José ELENA, Community Plant Variety Office, B.P. 2141, F-49021 Angers, France (tel. +33-2 41.36 84 50, fax +33-241 36 84 60, e-mail: elena@cpvo.fr)

[1] Jean-Louis D'HAUTEFEUILLE, Pioneer Genetique, Epuiseau, 41290 Ourques (tel. +33-254 73 07 40, fax +33-254 23 00 95, e-mail: dhautejl@plubred.com)

Jean MAISON, Community Plant Variety Office, B.P. 2141, F-49021 Angers, France (tel. +33-2 41.36 84 50, fax +33-241 36 84 60, e-mail: maison@cpvo.fr)

Bert SCHOLTE, Cebeco Zaden, B.V. Postbus 10000, 5250 GA Vlijmen, Netherlands (tel. +31-73 51 88 555, fax +31-73 51-88 666)

Dirk THEOBALD, Community Plant Variety Office, B.P. 2141, F-49021 Angers, France (tel. +33-2 41.36 84 50, fax +33-241 36 84 60, e-mail: theobald@cpvo.fr)

[1] Ernst VRANCKEN, ADVANTA France, Domaine de la Revanche, 32700 Lectoure, France (tel. +33-5-62 28 69 69, fax +33-5-62 28 61 65, e-mail: ernst.vrancken@advantaseeds.com)

IV. OFFICER

* Aubrey BOULD, Chairman

V. OFFICE OF UPOV

* Max-Heinrich THIELE-WITTIG, Senior Counsellor, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland (tel. +41-22-338 9152, telex 412 912 ompi ch, fax +41-22-733 54 28, e-mail: thiele.upov@wipo.int, Web site: http://www.upov.int)

[Annex II follows]

[1] Participated only in Subgroup Meeting on Sunflower, Angers, France, June 22, 1998

ANNEX II

LIST OF SPECIES AND LEADING EXPERTS AND FURTHER DETAILS FOR THE PREPARATION OF TEST GUIDELINES

Species	Basic document existing	Document to be prepared before the end of	Leading experts (countries) (for name of experts see Annex I)	Interested experts (countries) (for name of experts see Annex I)	Comments to be sent before the end of	Final document to be prepared before the end of
Bromus		December 1998	FR (+UY)		March 1999	
Cotton	TWA/27/3	-	ES	ZA, GR	December 1998	February 1999
Field Bean, Broad Bean			GB + Subgroup TWV	DE, ES, FR, CZ		
Fodder Raddish	TWA/27/8		DE	FR, NL	October 1998	February 1999
Industrial Chicory	TWV/30/19	?	Await TWV session	FR, PL		
Lotus	TWA/27/18	-	UY (+GB)	DE, FR, NZ	October 1998	February 1999
Rice	TWA/27/4	-	ES	FR, IT, JP, UY, KR	October 1998	December 1998
Subterranean Clover	TWA/27/12	-	AU	FR, NZ	October 1998	February 1999
Sugar Cane	TWA/27/6	-	UPOV (+BR)	AU, FR	October 1998	February 1999
Swede	TWV/31/4	-	DE	-	October 1998	February 1999
Tobacco	TWA/27/25	-	GR	DE, FR, PL	October 1998	February 1999
Turnip, Turnip Rape	-	-	GB + FN + Subgroup TWV	CN, DE, FR, NL, SE		
White Mustard	TWA/27/7		DE	DK, FR, NL, PL, SE	October 1998	February 1999
Cooksfoot		December 1998	FR	DE, DK, FN, GB, NL, SE	March 1999	April 1999
Meadow Fescue, Tall Fescue		December 1998	FR	CZ, DE, DK, FN, GB, NL, SE, UY	March 1999	April 1999
Red Clover		December 1998	DE	FN, FR, GB, NL, KR, SK, UY	March 1999	April 1999

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