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PROGRESS REPORT ON THE WORK OF THE TECHNICAL COMMITTEE
AND THE TECHNICAL WORKING PARTIES

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TECHNICAL COMMITTEE

1. The Technical Committee (hereinafter referred to as the "Committee") held its thirty-third session in Geneva from October 16 to 18, 1996, the week immediately before the ordinary session of the Council. The detailed report on the Committee's session appears in document TC/33/11 and a summary report has already been presented to the Council in document C/30/10 Add.

Program for the Thirty-Fourth Session

2. In 1996 several sessions of the Technical Working Parties had been scheduled for the latter part of the year. As this had happened several times before, the Committee proposed, and the Council agreed, that in future it should meet in the spring and not in the autumn. It is therefore proposed that the thirty-fourth session of the Committee take place in Geneva in April 1998, either in the week immediately before the sessions of the Consultative Committee and/or the Administrative and Legal Committee or in the same week as those sessions. It is planned that the following items will be discussed during the session: progress reports and questions presented by the Technical Working Parties, revision of the General Introduction to Test Guidelines and their Notes; harmonization of states of expression; new methods,

techniques and equipment in the examination of varieties. In addition, the Committee will take decisions on the Test Guidelines submitted by the Technical Working Parties for final adoption.

TECHNICAL WORKING PARTIES, INCLUDING THE BMT

Progress Report on the Work of the Technical Working Party for Agricultural Crops (TWA)

3. The Technical Working Party for Agricultural Crops will not meet until after the ordinary session of the Council. The report on the last session has been reproduced in document TWA/25/13 and a summary report to the Council in document C/30/10.

4. The twenty-sixth session of the TWA will be held in Montevideo, Uruguay, from November 10 to 14, 1997. At its twenty-sixth session the Working Party plans to complete, for presentation to the Committee for adoption, the Test Guidelines for Soya Bean (Revision), and to discuss or rediscuss working papers on Test Guidelines for Cotton (Revision), Bromus, Lotus, Rice (Revision), Subterranean Clover, Sunflower (Revision), and Tobacco. For the Test Guidelines on Opium Poppy, it hopes to be able to reach agreement with the Technical Working Party for Vegetables (TWV) by correspondence. In addition to Test Guidelines, it is planned that the following items will be discussed: the UPOV-ROM Plant Variety Database; prescreening of varieties; use of electrophoresis in ryegrass; new alleles for maize; ear rows versus drilled plots; sequential analysis; image analysis; cooperation with breeders in the testing of varieties.

Progress Report on the Work of the Technical Working Party on Automation and Computer Programs (TWC)

5. The Technical Working Party on Automation and Computer Programs (TWC) held its fourteenth session in Budapest, Hungary, from June 3 to 5, 1997, under the chairmanship of Mr. J. Law (United Kingdom). The full report on that session appears in document TWC/15/18. The main points arising from the session are as described below.

(a) UPOV-ROM: The TWC appreciated the progress made with UPOV-ROM and answered some open questions.

(b) DUST program from the United Kingdom: The TWC noted an improved version of the DUST program for Fortran 90 (DUST9) and a prototype of the DUST program for use on Windows (DUSTW). It asked the experts to check the prototype and inform the expert from the United Kingdom of any errors or improvement possibilities. In order to publicize the free availability of the DUST program, it produced document TWC/15/17, which gives full information on it.

(c) Visually-assessed characteristics: The TWC discussed a threshold method of statistically evaluating visually-assessed characteristics, and agreed to build a special interest group which would collect data sets from Denmark, France, Germany, Israel, the Netherlands, Poland and the United Kingdom for further study of the possibilities of such a method.

(d) Population standard: The TWC held lengthy discussions and will continue discussing the selection of the correct population standard and the difficulties experienced by certain crop experts in choosing one. It approved a revised version of document TWC/11/16 on the testing of uniformity in self-fertilized species, and will submit that version to the Committee for approval.

(e) Measured characteristics in self-fertilized species: The TWC started discussions, which will continue, on how best to evaluate measured data in self-fertilized species.

(f) Reduction of reference sets: The TWC discussed and will continue discussing possibilities for a reduction in the number of reference varieties to be observed each year by testing, in each year of a three-year trial, only one-third of the reference varieties, or by other unbalanced methods.

(g) Items resulting from the BMT: The TWC discussed several methods in response to a request made during the last session of the BMT. It will collect data sets from Belgium, France, Germany, Israel, the Netherlands and the United Kingdom and study various methods in more detail on the basis of the data in a special interest group.

(h) World Wide Web (WWW): The TWC discussed certain projects for making statistical and mathematical techniques available on the Web, and will follow these developments. It will in future offer the list of TWC documents on the Web but also further documents. It agreed to accept the offer from the United Kingdom to set up an e-mail discussion group, open to all TWC experts, in which also subjects of concern to the three special interest groups can be freely discussed.

(i) Spatial dependence: The TWC started evaluating spatial dependence, and will continue to do so at its coming session.

6. The sixteenth session of the TWC will be held in Merelbeke, Belgium, from June 16 to 19, 1998. At that session, the TWC plans to discuss or rediscuss the following items: report on subjects of special interest to the Working Party raised at the thirty-fourth session of the Committee; questions raised by other Technical Working Parties; report on new developments in member States; UPOV-ROM Plant Variety Database; image analysis; handling of visually-assessed characteristics; testing of uniformity; matters arising from the fourth session of the Working Group on Biochemical and Molecular Techniques and DNA Profiling in Particular (BMT) and from the special interest group; incomplete plot design, reduction of reference collection; improvement of communication; telecommunications, exchangeable software and contacts; list of statistical documents prepared by the TWC, list of statistical documents containing recommendations or methods of possible interest to the Technical Working Parties, development of computer programs for DUS testing (response to DUST9, DUSTW and other possible programs), developments in connection with the World Wide Web.

Progress Report on the Work of the Technical Working Party for Fruit Crops (TWF)

7. The Technical Working Party for Fruit Crops (TWF) held its twenty-eighth session in Wageningen, Netherlands, from September 8 to 12, 1997, under the chairmanship of

Mr. Chris Barnaby (New Zealand). The full report is reproduced in document TWF/28/10 Prov. At the session, the TWF completed the Test Guidelines for Japanese Apricot and Loquat prior to their submission to the Committee for final adoption. It also completed Test Guidelines for Apple Rootstocks, Grapevine and Pear Rootstocks for submission to the professional organizations for comments, and (re)discussed working papers on Test Guidelines for Citrus (Revision) and Kiwifruit. In addition to the discussions on Test Guidelines, the TWF did the following:

(a) It expressed appreciation for the recent developments in the work on the setting up of a UPOV-ROM Centralized Database and its bi-monthly updating. It was given a demonstration by the Office of UPOV, and asked all experts to study that disc and make any comments for improvement of its use in connection with fruit crops.

(b) It proposed again to make UPOV documents available in electronic form. It noted that all Test Guidelines would be available in electronic form towards the end of 1997, but pointed out that other important documents should also be made available on the Internet or on CD-ROM. Until UPOV had taken a final decision on its policy, documents should be made available in electronic form on request.

(c) It rediscussed the definition of an off-type proposed to the Committee by the Technical Working Party for Ornamental Plants and Forest Trees (TWO), and agreed with that definition apart from the last sentence which it proposed to amend in such a way as to make it clear that admixtures were not off-types in the strict sense but that, for the purpose of testing uniformity, they should be treated as if they were.

(d) It agreed that new methods so far not used for the testing of distinctness should not be used for the screening of varieties for the layout of trials unless there was a strong correlation between certain results (e.g. bands in the case of electrophoresis) and a morphological or physiological characteristic used in the Test Guidelines.

(e) It praised the expert from South Africa for his preparation of a document on the further harmonization of technical terms in the Test Guidelines and in the description of states of expression of characteristics (TWF/28/7), which made it easier to understand the different situations existing and thereby to avoid unnecessary different wordings for similar situations.

(f) It discussed at length whether it was at all possible to establish separate Test Guidelines for fruit varieties and for rootstocks, and finally agreed to take decisions species by species. It agreed to draw up separate Test Guidelines for Rootstocks for Apple and *Pyrus*.

(g) It discussed the problems for seed-propagated varieties of species in which varieties had so far been propagated vegetatively, of judging reasonable uniformity without any seed-propagated varieties being available as a starting point.

8. The twenty-ninth session of the TWF is scheduled to be held in Coolangatta, Australia, from November 9 to 14, 1998. At that session, the TWF plans to complete discussions on Test Guidelines for Apple Rootstocks, Grapevine (Revision) and *Pyrus* for presentation to the Committee for final adoption. It plans moreover to discuss or rediscuss working papers on Test Guidelines for Citrus (Revision), European Plum (Revision), Kiwifruit (Revision), Pear (Revision), *Pyrus* Rootstocks, *Prunus* Rootstocks and Walnut Rootstocks. Like the Technical

Working Party for Ornamental Plants and Forest Trees (TWO), it agreed to take planned Test Guidelines to a more advanced stage of preparation before discussing them at the session. For that purpose it developed a special system of “subgroups by correspondence” whereby experts interested in the species were listed and asked to send their comments on the latest draft to a “leading expert,” who would ensure that only near-final drafts would be submitted at the session. In addition, the following other items were planned for discussion: updated report from the Technical Working Party on Automation and Computer Programs (TWC) on the testing of uniformity; new methods, techniques and equipment in the examination of varieties; testing of rootstock varieties; standardization of Test Guidelines; the UPOV Central Computerized Database.

Report on the Work of the Technical Working Party for Ornamental Plants and Forest Trees (TWO)

9. The Technical Working Party for Ornamental Plants and Forest Trees (TWO) held its thirtieth session in Svendborg, Denmark, from September 1 to 5, 1997, under the chairmanship of Mr. Joost Barendrecht (Netherlands). The full report is reproduced in document TWO/30/12 Prov. During the session, the TWO completed the Test Guidelines for *Bouvardia* prior to their submission to the Committee for final adoption. It also completed Test Guidelines for *Cymbidium*, *Limonium* and Weeping Fig prior to their submission to the professional organizations for comment. It furthermore discussed or rediscussed working papers on Test Guidelines for *Chrysanthemum* and *Zantedeschia*. In addition to the discussions on Test Guidelines, the TWO did the following:

(a) It rediscussed in detail the use of image analysis in the DUS testing of ornamental plants. Its main interest lay in the use of image analysis for faster measurement of existing characteristics, for the storage of the data and their use for the selection of similar varieties, and for the storage of photos in digitized form. The special Subgroup of experts on image analysis doing the actual research will continue its research on a ring test on roses and will meet again at the end of 1998.

(b) It expressed appreciation for recent developments in the work on the setting up of a UPOV Central Computerized Database and its bi-monthly updating. It saw a demonstration of the database given by the Office of UPOV, and asked all experts to study the disc and make comments for improvement of its use in the ornamental field. It proposed to abandon the exchange of lists of varieties under test, as the information could be extracted from the UPOV-ROM. For that purpose technical experts should be given easier access to the UPOV-ROM at the national level, and if necessary more copies should be distributed to each member State.

(c) It proposed again to make UPOV documents available in electronic form. It noted that all Test Guidelines would be available in electronic form towards the end of 1997, but pointed out that other important documents should also be made available on the Internet or on CD-ROM. Until UPOV had taken a final decision on its policy, documents should be made available in electronic form on request.

(d) It proposed the following amended definition of an off-type: “Any plant is to be considered an off-type if it differs in the expression of any characteristic, of the whole plant or

of part of the plant, from that of the variety, taking into consideration the particular species. An admixture is considered to be an off-type.”

(e) It agreed that new methods so far not used for the testing of distinctness should not be used for the screening of varieties for the layout of trials unless there was a strong correlation between certain results (e.g. bands in the case of electrophoresis) and a morphological or physiological characteristic used in the Test Guidelines.

(f) It praised the expert from South Africa for his preparation of a document on the further harmonization of technical terms in the Test Guidelines and in the description of states of expression of characteristics (TWF/28/7), which had made it easier to understand the different situations existing and thereby to avoid unnecessary different wordings for similar situations.

(g) It looked once again into the question of seed-propagated ornamental varieties, and studied the comparative trials of new varieties set up by breeders in some European countries. At present, however, it saw little possibility of cooperation between the comparative trials of breeders and DUS testing for plant variety protection because of their completely different aims.

(h) It discussed the problems for seed-propagated varieties of species in which varieties had so far been propagated vegetatively, of judging reasonable uniformity without any seed-propagated varieties being available as a starting point.

(i) It discussed the problem of the first application for a variety in a new species, and the difficulty of obtaining information on other plant material or varieties of that species and their sale as a means of judging whether the variety could be considered new and distinct, and exchanged information on the procedure adopted by various countries in such cases. It was not able to define how much “breeding” was necessary for plant material selected in the wild or in a local market to qualify for protection.

(j) It would prepare a document for the Committee on whether the inclusion of a vector in another variety by grafting would lead to a new variety, illustrated by an old case in *Pelargonium* and a new case in *Euphorbia*.

(k) It agreed that all Technical Questionnaires should include the request for information on whether the candidate variety is a genetically modified variety, using the same broad wording as had been approved for the Test Guidelines for Rape Seed.

10. The thirty-first session of the TWO is scheduled to be held in Christchurch, New Zealand, from November 16 to 21, 1998. At that session, the TWO plans to complete the Test Guidelines for *Cymbidium*, *Limonium* and Weeping Fig for submission to the Committee for final adoption. It will also discuss or rediscuss Test Guidelines for Chrysanthemum (Revision), Cupressus, Giralton Wax Flower, Guzmania, *Hippeastrum*, Iris, Kangaroo Paw, Lavender, *Nerium*, Ornamental Apple (Revision), Pentas, Petunia, Rubber, Tagetes, Thymus, *Osteospermum*, *Poinsettia* (Revision), Gerbera (Revision) and *Eustoma*. In view of the long list of species for which Test Guidelines are planned, it developed a special “Subgroup by correspondence” system whereby experts interested in the species were listed and asked to send their comments on the latest existing draft to a “leading expert,” who would ensure that

only near-final drafts would be submitted at the session. Discussion of the following items is also planned: image analysis; testing of seed-propagated varieties of ornamental species; special cases in new species; harmonization of Test Guidelines; new methods, techniques and equipment in the examination of varieties; the Central Computerized Database.

Progress Report on the Work of the Technical Working Party for Vegetables (TWV)

11. The Technical Working Party for Vegetables will not meet until after the ordinary session of the Council. The report on the last session has been reproduced in document TWV/30/21 and a summary report to the Council in document C/30/10.

12. The thirty-first session of the TWV is scheduled to be held in Valencia, Spain, from November 24 to 28, 1997. During that session, the TWV will discuss, with a view to their submission to the Committee for final adoption, Test Guidelines for Cornsalad (Revision), Garlic, Onion (Revision) and Shallot, Rhubarb (Revision) and Welsh Onion/Bunching Onion. It will furthermore discuss or rediscuss, as time permits, working papers on Test Guidelines for Black Radish (Revision), Broad Bean (Revision), Celeriac (Revision), Celery (Revision), *Cucurbita moschata*, Curly Kale (Revision), Dill, Fennel, Globe Artichoke, Industrial Chicory, Kohlrabi (Revision), Leek (Revision), Lentil, Okra (*Abelmoschus esculentus*), Opium/Seed Poppy, Radish (Revision), Swede (Revision), Turnip, Turnip Rape, Witlof. In addition to Test Guidelines, it is planned to discuss the general presentation of Test Guidelines and Genetically Modified (GM) varieties.

Progress Report on the Work of the Working Group on Biochemical and Molecular Techniques, and DNA Profiling in Particular (BMT)

13. The fourth session of the Working Group on Biochemical and Molecular Techniques and DNA Profiling in Particular (BMT) was held at Cambridge from March 11 to 13, 1997. The draft report on the session is reproduced in document BMT/4/21. During its session, the BMT did the following:

(a) It heard short presentations of research results on Azalea, Carnation, Maize, Oilseed Rape, Peach, Potato, Ryegrass, and Tomato.

(b) It heard explanations on the usefulness and limitations of statistical methods and especially on similarity, clustering and dendrograms, together with a review of methods for cluster analysis of marker data and the use of the analysis of molecular variance (AMOVA) for distinctness studies. In this respect, it noted especially the frequent misuse of dendrograms as results of a study.

(c) It heard reports on the correlation and causal linkage between DNA markers and morphological traits and on the relationship between genetic distance and morphological distance between varieties, and noted that a correlation between morphological characteristics and DNA markers existed in a few cases only.

(d) It noted the breeder's reconfirmation of their position on DNA profiling and on the study on the use of DNA profiling methods by expert witnesses in disputes concerning

essential derivation, and also on the effect of different plant breeding schemes in the evaluation of parentage between them. The judgment of essential derivation was not considered to be a task for the national authorities, although the courts could approach them for technical advice.

(e) Very contradictory views were expressed on the possible use of DNA profiling for prescreening as a possible tool in DUS testing. There will have to be further discussion before an agreed opinion is reached.

(f) The greatest shortcoming remains the checking and control of uniformity in characteristics obtained with biochemical or molecular markers. The next session will have to concentrate on that topic.

(g) During the discussions on possibilities and consequences of the introduction of DNA profiling methods for DUS testing, the Vice Secretary-General of UPOV reported on definitions prepared by the Administrative and Legal Committee (CAJ) on the context of the interpretation of Articles 1, 7 and 14(5)(b) of the 1991 Act. A detailed study was requested of the records of the Diplomatic Conference of 1991 and its preparation to establish whether the CAJ's interpretations were correct.

14. The fifth session of the BMT is scheduled to take place in Beltsville, United States of America, from September 22 to 24, 1998. At that session, discussions are 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 vis-à-vis 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 variety; (j) Future program of the BMT (date and place of the next session if any).

15. The BMT proposed to prolong the chairmanship of Mr. Joël Guiard (France) to cover the next session of the BMT, and to discuss during that session whether discussions should continue in the BMT or take place in the Committee, in which case the BMT would stop holding sessions.

16. The Council is invited to note and approve the above information and the program of the Technical Working Parties.

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