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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

COUNCIL

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Geneva, October 17, 1995

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

Addendum prepared by the Office of the Union

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

1. The Technical Working Party for Fruit Crops (TWF) held its twenty-sixth session in Canterbury, United Kingdom, from September 11 to 15, 1995, under the chairmanship of Mrs. E. Buitendag (South Africa). The full report of that session will appear in document TWF/26/12 Prov. During the session, the TWF completed the Test Guidelines for Apple, Cherry, Peach and Strawberry for submission to the Technical Committee (hereinafter referred to as "the Committee") for final adoption. It furthermore (re)discussed, partly in a subgroup meeting, a working paper on Test Guidelines for Pear (Revision). In addition, to the discussions on Test Guidelines, the TWF discussed or rediscussed the following subjects:

(a) It noted the decision of the Committee with respect to the use of electrophoretic characteristics and characteristics on diseases, and the new procedures for the adoption of Test Guidelines.

(b) It appreciated the recent developments in the work for the setting-up of a UPOV Central Computerized Database and that a demonstration disc would be distributed in the coming days. It asked all experts to study that disc and make any comments for improvement of its use in the field of fruit crops.

(c) It could not accept the definition of an off-type proposed to the Committee by the TWO, and will propose that not all mutations but only "significant" mutations of part of an organ should be considered as an off-type.

(d) It discussed in detail the use of image analysis in DUS testing of fruit crops and will collect information on its use or research for its next session.

(e) It reconfirmed the importance of the list of species in which varieties are tested and its periodic updating and proposed to make that document available in electronic form.

(f) It proposed to the Committee to include in all Technical Questionnaires the request for an indication whether the candidate variety was an GMO (Genetically Modified Organism) variety or not.

(g) It continued its discussions on the involvement of the applicant in the testing of varieties and noted especially the testing procedures in Canada, Hungary and Japan.

(h) It proposed to include in all Technical Questionnaires the request to submit a photo in the same way as approved by the Committee for ornamental varieties.

(i) It proposed to make certain UPOV documents available in electronic form and proposed to start circulating to the TWF all reports of 1995 of the Working Parties and the Committee on one diskette and to discuss during its next session the use of the documents received in electronic form by the individual experts. It already distributed during its session a diskette with bibliographic data on published papers on new techniques in fruit species.

2. The twenty-seventh session of the TWF is scheduled to be held in Tel Aviv, Israel, from April 22 to 26, 1996. During that session, the TWF plans to (re)discuss working papers on Test Guidelines for Apple Rootstocks, Citrus (Revision), European Plum (Revision), Grape (Revision), Japanese Apricot (*Prunus mume*), Kiwifruit (Revision), Loquat (*Eriobotrya japonica*), Pear (Revision), Pear Rootstocks, *Prunus* Rootstocks, Walnut (Revision) and Walnut Rootstocks. In addition, the following other items are planned for discussion: color observations and image analysis, new methods, techniques and equipment in the examination of varieties; uniformity and stability in vegetatively propagated and self-pollinated varieties; UPOV Central Computerized Database; relation between national listing and plant variety protection.

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

3. The Technical Working Party for Ornamental Plants and Forest Trees (TWO) held its twenty-eighth session in Ede-Wageningen, Netherlands, from September 4 to 9, 1995, under the chairmanship of Mrs. U. Löscher (Germany). The full report will appear in document TWO/29/13 Prov. During the session, the TWO completed the Test Guidelines for Anthurium, Norway Spruce and Rhododendron, prior to their submission to the Committee for final adoption. It also completed the Test Guidelines for Firelily (*Cyrtanthus*) and

Serruria, prior to their submission to the professional organizations for comments. It furthermore (re)discussed, partly in subgroups which reported their results to the TWO, working papers on Test Guidelines for Chrysanthemum (Revision), Cymbidium, *Ficus benjamina*, Iris, Lavender, Limonium and Rubber. In addition to the discussions on Test Guidelines, the TWO discussed or rediscussed the following subjects:

(a) It noted the decision of the Committee with respect to the use of electrophoretic characteristics and characteristics on diseases, and the new procedures for the adoption of Test Guidelines.

(b) It appreciated the recent developments in the work for the setting-up of a UPOV Central Computerized Database and that a demonstration disc would be distributed in the coming days. It asked all experts to study that disc and make some comments for improvement of its use in the ornamental field.

(c) It welcomed the decision of the Committee to include in the Technical Questionnaires for ornamental species, the request for a representative photo of the distinguishing characteristics of each candidate variety, and applied it immediately to all Test Guidelines.

(d) It discussed in detail the use of image analysis in DUS testing of ornamental plants. Its main interest lay in the use of image analysis for the faster measuring of existing characteristics, for the storage of the data, their use for the selection of similar varieties as well as for the storage of photos in digitalized form. It would not set up a special subgroup but reserve half a day of its coming session for discussions on that subject.

(e) It reconfirmed the importance of the list of species in which varieties are tested and its periodic updating.

(f) It discussed the biometrical evaluation of visually assessed characteristics using simple summary statistics and recommended the use of such methods at the time of revision of Test Guidelines, however, without wishing to make it mandatory.

(g) It continued its discussions on the involvement of the applicant in the testing of varieties, and noted especially the situations in Canada and Japan.

(h) It agreed that in principle a population standard of 1 per cent with an acceptance probability of 95 per cent would be indicated in the Test Guidelines of most of its species. It would decide crop-by-crop if different percentages should be applicable.

(i) It proposed to include in all Test Guidelines a sentence requesting the applicant to state whether his variety was a GMO (Genetically Modified Organism) variety or not.

4. The twenty-ninth session of the TWO is scheduled to be held in Tel Aviv, Israel, from April 15 to 19 (noon), 1996. During that session, the TWO plans to complete the Test Guidelines for Firelily (*Cyrtanthus)* and Serruria for submission to the Committee for final adoption. It will also discuss or rediscuss Test Guidelines for Bouvardia, Chrysanthemum (Revision), Cymbidium, *Ficus benjamina*, Geralton Wax Flower, Guzmania, Hippeastrum,

Iris, Kangaroo Paw, Lavender, Limonium, Nerinum, Ornamental Apple (Revision), Rubber, Pentas and Thymus. Discussion of the following items is also planned: image analysis; new methods, techniques and equipment in the examination of varieties; central computerized database.

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

5. The Working Group on Biochemical and Molecular Techniques and DNA-Profiling in Particular (BMT) held its third session in Wageningen, Netherlands, from September 19 to 21, 1995, under the chairmanship of Mr. J. Guiard (France). The full report will appear in document BMT/3/18 Prov. During the session, the BMT discussed or noted the following:

(a) It noted document BMT/3/3 with definitions and nomenclature on the different methods under discussion.

(b) It heard short reports on research with these methods on Barley, Hydrangea, Lucerne, Oilseed Rape, Peach, *Pinus Pinaster*, Potato, Ryegrass, Strawberry, Sunflower and Tomato.

(c) It noted some figures of the costs and accessibility for the different methods.

(d) It noted the possibilities of application of statistics to the analysis of genetic distance and felt the need for better understanding of its application, especially the multidimensional approach and its consequences.

(e) It noted the reconfirmation of the breeders' position to keep the criteria and tools for the judgment of DUS and essential derivation separate. Evolution of the methods might, however, in the future require adaptation of that position.

(f) It noted that genetic distance was one main tool for the judgment of essential derivation, but it insisted that that tool alone was not sufficient to decide whether a variety was essentially derived or not. In this respect, UPOV should further discuss which additional methods or tools might be adapted to judge essential derivation.

(g) It discussed the use of DUS-profiling methods for prescreening of varieties before doing the field tests, which would lead to a limited number of varieties to be grown for comparison and thus would reduce cost and labor. Some experts argued that as the distinctness between varieties was not a linear function of differences at genetic level, such use was not admissible and also inconsistent with the suggestion that this method not be applied to DUS testing at present.

(h) It noted that most experimental reports dealt with the application of DNA-profiling methods for identification and distinctness purposes, but almost no information was reported on uniformity or stability testing.

(i) It discussed at length the possibilities and consequences of the introduction of DNA-profiling methods for DUS testing and finally recommended that at present information and knowledge was insufficient to take a decision. Thus these methods should not be used for DUS purposes for the time being.

6. The next session of the Working Group is scheduled to be held in Cambridge, United Kingdom, from March 11 to 13, 1997. It is proposed to collect more information on a larger number of ornamental plants and vegetatively propagated species. They should also cover more studies on microsatellites. The documents to be prepared by different experts should, if possible, for each given crop cover the following items: (a) reproducibility of the method; (b) genetic determination; (c) costs of the method; (d) studies on the correlation of genotypic markers with phenotypic expressions (direct link, partial link, causative link or association); (e) robustness of the method, (f) knowledge of genetic map of the species, (g) explanation why the method was considered important, (h) access to the method (patented or patent pending).

7. The agenda for the coming session of the BMT would comprise the following items: (a) Short presentation of research results on different species (Apple, Azalea, Carnation, Lolium, Maize, Oilseed Rape, Peach, Pepper, Potato, Rice, Rosa); (b) The importance of clear definition of questions to the statisticians; (c) The use of DNA-profiling in prescreening as a possible tool in DUS testing; (d) The interest and value of the dendrogram analysis; (e) The analysis of the molecular variance; (f) The principal components analysis and other multivarietal statistics; (g) Correlation and causal linkage between DNA markers and morphological traits; (h) Relation between molecular genetic distance and morphological distance; (i) Position of the breeders vis-à-vis DNA-profiling; (j) Possibilities and consequences of the introduction of DNA-profiling methods for DUS testing; (k) Control of uniformity in characteristics obtained with biochemical or molecular markers; (l) Effect of breeding schemes and parentage on the required distance between varieties; (m) The use of DNA-profiling methods by expert witnesses in disputes on essential derivation.

8. *The Council is invited to*

(i) *note and approve the above information and the program of the Technical Working Parties;*

(ii) *note and approve the program of the Committee and the Technical Working Parties as reproduced in document C/29/10.*

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