



**TWO/29/15**

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**INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS**

GENEVA

**TECHNICAL WORKING PARTY  
FOR  
ORNAMENTAL PLANTS AND FOREST TREES**

**Twenty-Ninth Session  
Tel Aviv, April 15 to 19, 1996**

REPORT

*adopted by the Technical Working Party for Ornamental Plants and Forest Trees*

Opening of the Session

1. The twenty-ninth session of the Technical Working Party for Ornamental Plants and Forest Trees (hereinafter referred to as "the Working Party") was held at Tel Aviv, Israel, from April 15 to 19, 1996. The list of participants is presented in Annex I to this report.
2. Mr. B. Bar-Tel welcomed the participants to Israel on behalf of the Plant Breeders' Rights Council. The session was opened by Mrs. U. Löscher (Germany), Chairman of the Working Party.

Adoption of the Agenda

3. The Working Party unanimously adopted the agenda for its twenty-ninth session which is reproduced in document TWO/29/1 after having agreed to include an item 5(a) "Testing of Seed Propagated Varieties of Ornamental Species," to include under item 6 changes to the Test Guidelines for African Violet and to delete items 9(b) Chrysanthemum, 9(e) Geraltion

Wax Flower, 9(g) Hippeastrum, 9(l) Nerium, 9(m) Ornamental Apple and 9(p) Thymus, and to devote the first half day of the session exclusively to image analysis.

#### The Use of Image Analysis in the DUS Testing of Ornamental Plants

4. The Working Party referred to its decision that it was more appropriate to continue discussing the subject in the whole Working Party, thus giving all member States the chance to participate and not only those four States which at present did research on that method, that emphasis should be laid on the observation of shape, size and color distribution of leaves and flowers and that it was important that breeders also participated in the discussions on image analysis, especially breeders from countries with a breeders' testing system, as they would need to be able to follow if new characteristics were included in the Test Guidelines.

5. The expert from the Netherlands reported that the planned research on *Ficus* had had to be postponed until later this year and that in ornamental species no other research was being done. The expert from South Africa reported that some research was being done on seed identification. The expert from France reported on a study of comparing varieties, trying to get standardized images, comparing methods that could be used and standardizing seed analysis. The expert from Germany gave a short explanation on the progress made in the research on image processing which had been separated into image recording and image analysis. The research program on image recording (taking images and storing data) had been completed. It was now possible to search in the database for different varieties, display the images as well as other characteristics of the variety on the screen. It was also possible to use slides taken earlier and store the picture in the system. Research would now start on image analysis. It was planned to use the same basis also in the Netherlands. A short summary of the report from the German expert is reproduced in Annex II to this report.

6. The Working Party concluded that, in the ornamental field, image analysis was still under research and not yet applicable for decisions on DUS and also not as a tool for measuring, e.g. length or width of plant organs. It was necessary to continue the research and to reach conclusions on the harmonization of the methods. For the future, it was therefore insufficient if only the experts continued discussions in the TWO sessions. Discussions should be held at two levels and experts engaged in the research should also meet and exchange information, discuss problems and try to find solutions.

7. The Working Party, at the invitation of the experts from Germany, agreed to hold a Subgroup Meeting on Image Analysis at Hanover, Germany on September 26 and 27, 1996 [after the session changed to October 1 and 2, 1996]. The Subgroup's agenda should cover an exchange of information and an inventory of the state of research in each country, including the hardware and software used, for which species the research had been successful, the use of the technique and a collection and discussion of the questions and problems encountered during the present research and a discussion of the questions raised by the Working Party. The Working Party agreed that only real problems and difficulties should be discussed, such as the analysis of, for example, leaf variation in *Ficus* varieties (in order to find an objective proof of difference in variation), the saving of time in the measurement of length and width in numerous *Pelargonium* varieties or the question of repeatability of results. The Subgroup should also consider giving advice to other States on how to start with image analysis in a

given State (hardware, software), how far one program could be used for different species and on how to work from existing photos or photos taken from different testing places and centrally processed by image analysis. Results of image analysis should be harmonized so as to enable their use by all member States.

8. The Subgroup Meeting should be aimed mainly at the experts engaged in research on image analysis in ornamental species, but should also be open to other experts working in other species or other interested experts. The Chairman of the Working Party should chair the first meeting. Depending on the outcome of the first meeting, either a second meeting would be proposed in connection with the next session of the Working Party, to allow broader participation, or simply a report on the first meeting would be presented to the Working Party.

#### Picture of the Variety Added to the Official Variety Description

9. The Working Party noted that several States had added to the official variety description a color photo of organs of the variety or made such photo even part of the description. While most experts found that an additional photo provided very useful information, it could not recommend all States to follow the same procedure. At present, the printing of the color would still pose severe problems. In future, the use of photos on the screen may facilitate things. In the Netherlands some commercial flower sales organizations were already proposing descriptions of flower lots for sale by telephone and computer, including color photos of the plant material. An unresolved question in respect of color photos forming part of official descriptions was to whom the copyright belonged: Could the applicant claim copyright if he supplied the photo or would he have to accept unlimited use of his photo together with the description of his variety once protected?

#### Short Reports on Special Developments in Plant Variety Protection in Ornamental Plants and Forest Trees

10. The Working Party received short reports from a large number of countries. Most of them reported on progress in the amendment of their national laws to harmonize them with the 1991 Text of the UPOV Convention. In Australia, Denmark, France and Israel, the new laws were in force or would be in force very soon (Israel, April 23, 1996; Denmark April 26, 1996). In numerous countries belonging to the European Union (EU), the entry into operation of the Community Plant Variety Office (CPVO) had led to a considerable reduction in the number of applications at national level. In other countries, it had further increased. In Japan in 1995, 750 applications had been received for ornamental varieties leading to a prolongation of the examination period. In France, varieties of two seed propagated species (Tagetes, Impatiens) would be tested for the EU Office. In Australia, the new law had led to more applications out of which 80 per cent for ornamental varieties, mostly from overseas. For certain genera and species, Australia encouraged centralized testing in research stations through reduced testing fees. The Australian expert also reported on the interaction between Plant Variety Protection and other rights in the form of single desk selling (statutory marketing) through a board established for certain species which would control all sales. That had been considered by the courts to affect the Breeder's Right. The expert from New Zealand reported on difficulties in the handling of first applications in a species, especially in

species not hitherto present in New Zealand, on applications of vegetatively propagated forest trees with characteristics as wood quality, wood density, wood color, hard wood, etc., and on an application for a fertile variety of Cosmos of which only sterile varieties had existed. The expert from Romania reported that protection was possible in her country but that the law had to be amended before Romania could join UPOV. The new bill might be presented to Parliament in May 1996. In her country, breeders needed to be more informed of the advantages of Plant Variety Protection and encouraged to apply for rights.

11. Several experts reported on difficulties in the handling of applications for varieties discovered in the wild or bought in a local market in a distant country. Some governments were very sensitive to the protection of pure discoveries and would require at least some type of breeding before accepting the application. Where the material was derived from clonal material obtained in the market, the original material would be considered a variety even if marketed under the species name and rights would be refused for lack of novelty.

12. The expert from France reported on a project for a the study on how to manage genetic material of roses (wild roses and bred varieties). The project had been approved by the EU. At present France, Germany, the Netherlands and Spain were to work together in the project. The first meeting was foreseen for June 10 to 12, 1996, in Germany.

13. Mr. D. Theobald, Representative of the Community Plant Variety Office of the European Union, informed the Working Party that in September 1994 Community Regulation 2100/94 on Community Plant Variety Rights had entered into force, establishing common legislation for the protection of plant varieties for the whole territory of the European Union. The Regulation was to a very large extent based on the elements of the UPOV Convention of March 1991. In May 1995, two implementing regulations to the Community regime, on procedures and fees, had come into force. The implementation of the Community regime was carried out by the Community Plant Variety Office (CPVO), which had taken up duties in June 1995 at its provisional location in Brussels. So far the CPVO had received more than 3500 applications for Community Plant Variety Rights, covering more than 300 different botanical species. Around 45 per cent of all applications had been for varieties of ornamental species. Since June 1995, the first two editions of the Official Gazette of the CPVO had been published, the third edition would be issued in due course. The first granting of protection titles could be expected in May 1996. The examination of the varieties was carried out by examination offices entrusted by the CPVO. Therefore the CPVO made use of the existing examination offices in the Member States. On a provisional basis, examination offices had been designated for more than 90 botanical species. Due to an amendment to the existing Regulation in March 1996, the CPVO now had the possibility of using examination reports based on the results of a technical examination carried out by a UPOV Member State outside the EU as a sufficient basis for the grant of a Community Plant Variety Right.

Important Decisions Taken During the Previous Sessions Of The Technical Working Party and the Technical Committee

14. Mr. M.-H. Thiele-Wittig gave a brief report on the main items discussed during the previous session of the Technical Committee and referred participants who needed further details to the full report reproduced in document TC/32/7 Prov.

15. Level of Involvement of the Applicant in the Growing Tests: The Working Party noted an updated version of document (TC/32/4) on the level of involvement of the applicant in the growing tests. It found that the document contained very useful information which everybody could study at home in detail. The expert from Australia reported on the start of centralized breeders testing for a few species. The expert from New Zealand reported on the start of official central tests for several further species. The Working Party asked the experts to inform the Office of UPOV and/or the Working Party of any major changes that might happen in the future.

16. List of Species in Which Practical Technical Knowledge has Been Acquired: The Working Party noted an updated version of document TC/32/5 on the list of species in which practical technical knowledge has been acquired.

17. Sequential Analysis: The Working Party noted an updated document (TC/32/6) on sequential analysis prepared by the Chairman of the Technical Working Party on Automation and Computer Programs (TWC) with the help of the experts from France, Germany, Denmark and the United Kingdom and that the Technical Committee had recommended that each of the Technical Working Parties act in connection with the TWC and look further into the sequential analysis method, which aimed at reducing the sample size to be used in the testing of uniformity in order to avoid the rejection of good varieties or the acceptance of bad varieties, as one of the possible approaches for the future. For ornamental species, however, the Working Party saw no means of applying that method.

18. Transgenic/GM Varieties: The Working Party noted the decision of the Technical Committee to request from the applicant to state in the Technical Questionnaire whether the candidate variety was a transgenic/GM variety or not. It further noted that after the session the expert from Germany had asked that the whole question of release be discussed first in the CAJ before including it in all Test Guidelines.

19. Resistance Characteristics: The Working Party noted that the Technical Committee had added to the three definitions of the terms describing the reaction of plants to pests and pathogens the preamble which had been proposed at the same time.

20. Example Varieties: The Working Party noted that under certain circumstances Test Guidelines could be adopted even if only a few or no example varieties could be stated and that where species were given as examples, these should be replaced as soon as example varieties were available.

21. Provisional Protection: The Working Party noted that a survey on provisional protection between the date of application and the granting of rights was at present being

carried out by the Technical Working Party for Fruit Crops (TWF) and would be discussed in the coming week.

22. Request for Photos in the Technical Questionnaire: The Working Party noted that the rule to request a representative color photo of a candidate variety in the Technical Questionnaire was applicable to fruit and ornamental species only.

23. Definitions of Categories of Characteristics and the Conditions of Their Use for the Description of Varieties: The Working Party noted the discussions in the Technical Committee and its need to have a clearer understanding and a definition of the different categories of characteristics used. It noted the draft presented during the Technical Committee session and reproduced in paragraph 64 of document TC/32/7 Prov. which comprised the following categories and had no problems in following them.

(a) Asterisk Characteristics

Characteristics recommended by UPOV for use on all varieties in every growing period over which examinations are made and always included in the variety descriptions, except when the state of expression of a preceding characteristic or regional environmental conditions render this impossible.

(b) Non-Asterisk Characteristics

Characteristics considered useful by UPOV for DUS testing and description, but not all UPOV member States recommended their routine use.

(c) Routine Characteristics

- All UPOV asterisk characteristics;
- Some UPOV non-asterisk characteristics if selected by a given State for routine testing;
- Some additional non-UPOV characteristics if selected by a given State for routine testing.

(d) Additional/Supplementary Characteristics

Any characteristic used in addition to the characteristics recommended by UPOV or in addition to those used routinely at national level.

(e) Complementary Characteristics

Characteristics which cannot be used at all to establish distinctness, but provide useful information of the variety. Example: DNA marker.

(f) Last Resort Characteristics

A special case of additional characteristics used only under the following conditions:

- (i) with the agreement of the applicant
- (ii) if all other characteristics fail to establish distinctness
- (iii) a test procedure has been agreed between the competent authority and the applicant
- (iv) if used, can establish distinctness in combination with other characteristics, but in the extreme case, alone.

24. UPOV Documents in Electronic Form: The Working Party noted the discussions held in the Technical Committee on the usefulness of documents in electronic form. It also noted that in the TWF a first distribution of technical reports had been made on discs. The Working Party again strongly supported making available the UPOV documents in electronic form. This should not be restricted to Test Guidelines but should cover several other documents, especially reports of meetings and other more important documents. Availability in electronic form would especially facilitate searches for certain subjects in existing documents or reproducing parts for new documents.

25. The ideal situation would be if all UPOV documents available to the general public could be made available on Internet or on the monthly UPOV-ROM. If this were too far reaching, UPOV should decide on a more limited number of documents which should, however, include at least all UPOV Test Guidelines and some other important technical documents. To make a start in its area, the Working Party agreed to submit in future drafts for amended Test Guidelines in electronic form to the Office of UPOV. The Office of UPOV would circulate to the experts the draft Test Guidelines for Serruria and Firelily in the new presentation (Table of Characteristics in four languages) in order to ensure that all use that new format for their new drafts. Until a decision had been taken by the Technical Committee and/or the Council of UPOV on the general policy, the Office of UPOV would, on individual requests, send documents in electronic form to the requesting expert as far as possible and available. One problem still to be solved was the handling of diagrams in the Test Guidelines (so far not in electronic form because of bad scanning quality).

26. Definition of Off-Type: The Working Party noted that the Technical Committee had discussed the amendment to the definition of off-types proposed by the TWF and had agreed that each Technical Working Party should discuss it again, as the definition would be different depending on the form of propagation, and submit a proposal to the next session of the Committee. It further noted that the Technical Working Parties should especially consider the handling of impurities, admixtures (genetically unrelated plants), and whether all mutations in parts of an organ or only "significant" mutations should lead to considering the plant in question an off-type.

27. The Working Party had major difficulties in considering an amendment to its previous proposal. Having noted the difficulties encountered by the TWF in cases of large plants like trees, it finally proposed to delete from its definition the words "in parts of an organ" and proposed that "each plant which showed a clear mutation in any characteristic was considered

an off-type.” By adding “in any characteristic” it made it clear that not only characteristics observed as a routine were affected.

28. With respect to impurities and admixtures, the Working Party confirmed its agreement that any impurity or admixture would be considered an off-type in the same way as any plant showing a clear mutation in part of its organs in any of its characteristics.

29. Trade Name: The Working Party noted the results of the discussions in the Technical Committee on the request to include in the Technical Questionnaire a request to give the trade name. It repeated all arguments in favor and finally repeated again its request to the Technical Committee for inclusion of the trade name. The best place considered was next to the variety denomination but with the addition “optional.” The applicant should not be forced to give the trade name if he did not want to.

#### Harmonization of States of Expression and Note for Different Characteristics

30. The Working Party noted the following documents on the harmonization of states of expression and Notes in the UPOV Test Guidelines: TC/26/4 Rev., TC/27/5, TWV/29/7, TWF/27/3, TWF/27/16 and TC/32/7 Prov., paragraph 49. The Working Party agreed that there was a real need for further harmonization. It also agreed, however, that where it had intentionally chosen for a given situation to present a characteristic in a quantitative or qualitative way, that decision should not be overridden by the Editorial Committee. As an example, the case of shape was mentioned with the states “concave, straight, convex” which, depending on the species could have the Notes 1, 2 and 3, or 3, 5 and 7 if the intermediate states 2 and 4 and the extremes were needed.

31. The Working Party noted the decision of the Technical Committee on the proposals for attitude presented by the Technical Working Party for Vegetables (TWV) and applied it directly in some Test Guidelines. It considered, however, that there might be cases where the proposals could not be applied. They should also not apply to the growth habit.

32. The Working Party will look in more detail into several quantitative characteristics. The expert from South Africa will prepare a document for discussions during the next session. Moreover, as far as possible, the Chairman of the Working Party should attend the Editorial Committee session in order to avoid the Editorial Committee overlooking justified different presentations in Test Guidelines.

#### Testing of Seed Propagated Varieties of Ornamental Species

33. Mr. Jörg H. Selchau from ASSINSEL introduced document TWO/29/13 explaining the discussion within ASSINSEL and with the Office of UPOV on the need for protection of seed reproduced ornamental varieties and the problems involved (high testing fees, lack of UPOV Test Guidelines, too high uniformity requirements). He explained the comparative trials of new varieties undertaken by breeders of Fleuroselect and asked that it be considered whether these trials could not form the basis, after some amendments if needed, for decisions on plant variety protection.



34. The Working Party noted the explanations with interest but needed further information on these trials. Mr. Selchau would send more detailed information to the Office of UPOV, especially the instructions given to the breeders for the lay-out of the trials and an example, on the basis of a variety, of the procedure followed for the collection of data, the combination of the 27 sites and the decisions taken on the different results obtained, including a list of species for which such tests were undertaken. If possible, on the occasion of the next session of the TWO, a visit to one of these trials could be foreseen and/or at the national level experts from the competent authorities could visit those trials and inform themselves, thereby enabling a fruitful discussion during the next session of the Working Party.

#### Final Discussions on Draft Test Guidelines

##### Test Guidelines for African Violet

35. The Working Party noted document TWO/29/11 prepared by experts from Germany containing proposals for changes in the Test Guidelines for African Violet. After having heard the explanations from the experts from Germany, the Working Party agreed to the changes and proposed to present the request for changes to the Technical Committee for adoption. In addition to the changes mentioned in document TWO/29/11, in the Technical Notes IV the paragraphs 1 to 3 should be amended as follows in order to correct errors and adjust the document to the new presentations: In paragraph 1 the new sentence on the population standards (1 per cent) and the acceptance probability (95 per cent) should be included, in paragraph 2 the characteristics would be Nos. 2, 3, 7, 8, 17, 19, 20 and 23 and the first sentence of paragraph 3 to read: “Unless otherwise indicated, all observations should be made on 20 plants or on typical parts of 20 plants at the time of full flowering.”

##### Draft Test Guidelines for Firelily (*Cyrtanthus*)

36. The Working Party noted the draft Test Guidelines for Firelily (*Cyrtanthus*) as reproduced in documents TG/156/1(proj.) and TWO/29/12 and comments made by the Editorial Committee. It finally made the following main changes to document TWO/29/12:

- (i) Subject of the Test Guidelines: The Latin name to read “*Cyrtanthus* Ait.”
- (ii) Conduct of Tests: To have in paragraph 3 the word “in pots with well aired substrate with good water drainage” deleted, the word “medium” replaced by “substrate” and the words: “up to the end of the test” included under “Bulb lifting.”
- (iii) Methods and Observations: To have in paragraph 1 the word “typical” added before “parts”; in paragraph 3 the word “inflorescence” replaced by “bract” and paragraph 4 to read: “Flowering is considered to begin when the first flower in the inflorescence has opened.”
- (iv) Table of Characteristics:

Characteristics

- 1 To have the states “erect (1), semi-erect (3), horizontal (5)”
- 8 to 11, 13, 15, 17, 18 To receive a plus (+) as reference to explanations
- 16 To have the states “erect (1), semi-erect (3), horizontal (5), semi-pendulous (7), pendulous (9)”
- 19 To have the state “funnel-shaped” separated into two states “narrow funnel-shaped (2), broad funnel-shaped (3)” and to be included in the explanations on page 14.
- 20 To apply to the perianth tube
- 21 To have “widest part” replaced by “throat”
- 22 To read: “... at widest part (if not throat)”
- 24 To receive an asterisk
- 25 To have the states “whitish (1), greenish (2), yellow (3), pink (4), red (5), brownish (6)”
- 29 To have the states “acute (1), obtuse (2), rounded (3)”
- 36 To have the state “white” placed at the beginning
- 38, 39 To receive an asterisk.

(v) Technical Questionnaire: To have characteristic 24 included under paragraph 5.

Draft Test Guidelines for Serruria

37. The Working Party noted the draft Test Guidelines for *Serruria* as reproduced in documents TG/157/1(proj.) and TWO/29/7 and comments made by the Editorial Committee. It finally made the following main changes to document TWO/29/7:

(i) Methods and Observations: To have paragraph 1 amended to read: “All observations should be made on 5 plants or 10 typical parts of 5 plants” and to have paragraph 5 deleted.

(ii) Table of Characteristics:

Characteristics

- 1 To have the states “upright (3), spreading (5), prostrate (7)”
- 9 To have the spelling of the species “*S. roxburghii*” corrected

- 11 To have the species "*S. vallis*" for Note 2
- 12, 16 To have the states "absent or very weak, weak, strong"
- 17 To have the spelling of the species "*S. rosea*" corrected
- 18 To have the spelling of the species "*S. cynaroides*" corrected
- 24 To have the Notes "3, 5, 7"
- 27 To have the states "same, darker"
- 32 To have the words "of midrib" deleted
- 34 To be placed after characteristic 23.

(iii) Literature: To receive additional literature.

#### New Methods, Techniques and Equipment in the Examination of Varieties

38. The Working Party noted the report on the third session of the Working Group on Biochemical and Molecular Techniques and DNA Profiling in Particular (BMT) as reproduced in document BMT/3/18, and the summary of the discussions in the Technical Committee as reproduced in document TC/32/7 Prov., paragraphs 50 to 60. It further noted that the next session of the BMT was scheduled to be held in Cambridge, United Kingdom, from March 11 to 13, 1997.

39. The Technical Committee had concluded that further work and discussions were needed within the BMT. Scientists needed more information on the UPOV aspects and UPOV experts needed more information on the techniques. All aspects of the methods needed to be studied further to clarify all the unresolved points and all Technical Working Parties should discuss the subject in more detail and report to the Committee. The item would therefore remain on the agenda for the next session of the Committee, although no BMT session would have taken place in the meantime.

40. Some experts warned that the Working Party should pay more attention to these methods and encourage other people to look into their research on DNA methods also on ornamentals. Others repeated that enough other characteristics were available in the ornamental area and the DNA methods were not needed for DUS testing. They may be useful for identification but unless results could be linked to phenotypic expressions they were not useful. The Working Party noted that some research was done in this field with *Pelargonium* in France, *Calluna* in Germany and roses in Spain. It will follow that research.

41. The Working Party finally agreed to await further progress in knowledge of these methods. For the testing of distinctness in the ornamental field these methods were at present not needed as sufficient morphological and physiological characteristics were available.

Having noted paragraphs 36 and 38 of the report from the last BMT session (document BMT/3/18), the Working Party agreed with the conclusions of the BMT stated in these paragraphs which read as follows:

“36. Final Conclusions: The Working Group agreed that the new techniques for DNA profiling were a powerful tool to provide detailed information on the relationship between varieties. They supplied considerable background on a variety and were also very useful for the identification of existing varieties. They would be very useful for the estimation of essential derivation together with other sources of data (e.g. breeding history). The Working Group was not, however, in a position to recommend its use for distinctness purposes. Many questions emerged, especially concerning the genetic map, the link between markers and genes, the link between markers and possible expression of a gene in the phenotype, and the whole question of uniformity. It therefore finally proposed that the Technical Committee not recommend the use of DNA profiling for DUS purposes before all these open points had been clarified or before harmonized protocols had been established for the use of DNA profiling (if its use was ever accepted for DUS testing).

38. The Working Group favored the approach of ASSINSEL which was to keep the judgment of essential derivation as far as possible separate from the DUS testing and that the criteria of essential derivation had to be judged species by species. At present information on DNA profiling should only be complementary information which may help the expert in the testing but which would not be used for distinctness testing.”

#### Central Computerized Database

42. The Working Party noted the latest stage of preparation of the UPOV Plant Variety Database on CD-ROM (UPOV-ROM) as set forth in Circular U 2347 dated December 15, 1995. The Office of UPOV had invited all of its member States to submit data for the envisaged disc by the end of January 1996. The disc will cover data from 23 member States. The data from four States, however, will be data sent already in 1995. Only seven States had not been able to provide data for the first production disc already (BE, CH, CL, PL, PT, UA, ZA). It is expected that the first production disc will be issued at the end of May 1996. A request for data for the second production disc will be issued in the current week.

43. Several experts had had a chance to study the UPOV demonstration disc and expressed their satisfaction. The Working Party invited all the experts to contact their respective colleagues at national level for them to also see and assess the information on the disc and make any comments for further improvement.

#### Discussion on Working Papers on Test Guidelines

##### Working Paper on Test Guidelines for Bouvardia

44. The Working Party noted documents TWO/28/3 and TWO/29/5 prepared by experts from Japan and made only the following main changes in document TWO/29/5:

(i) Conduct of Tests: The optimal day-length to be as follows:

- Vegetative growth: more than 13 to 14 hours
  - Flower induction: less than 11 hours. Flower induction requires short-day conditions or short-day treatment for 21 to 25 days
- Planting: beginning of May (northern hemisphere)  
Induction: daylight in second half of August.

(ii) Methods and Observations: To have paragraph 1 after paragraph 3 and paragraph 3 to read: “Unless otherwise indicated, all observations should be made on 10 plants or 10 typical parts of 10 plants at the time of full flowering. All observations on the leaf should be made on fully developed leaves of the middle third of the stem.”

(iii) Grouping of Varieties: To have the following grouping characteristics: “1, 24, 26, 31, 33.”

(iv) Technical Questionnaire: To have in paragraph 7.2(ii) the sentence inserted: “Please indicate the maximum number of hours.”

(v) Table of Characteristics:

#### Characteristics

- 1 To read: “Plant: height” with the states from “very short” to “very tall”
- 2 To have the last state read “quadrangular”
- 3 To have the last state read “purplish red” and placed after “green”
- 6 To read: “Stem: ramification”
- 9 To read: “Leaf blade: rigidity”
- 10 To have the states 3 and 4 placed at the beginning
- 11 To have the words “intensity of” added
- 12 To read: “Leaf blade: shape of apex” with the states “acuminate, sharp acute, blunt acute, rounded”
- 13 To read: “Leaf blade: shape of base” with the first state “attenuate”
- 14 To read: “Leaf blade: shape in cross section” with the Notes “1, 2, 3” and to have the species name for “White Carla” in this and all following characteristics deleted.

- 17 to 21 To have the following order of characteristics: “21, 19, 20, 17, 18”
- 22 To have state 4 read “medium pink”
- 24 To have “*B. longiflora*” deleted
- 25, 26 To start with “Corolla: “
- 25 To have the states “erect (Artemis, Lilac Latosca), semi-erect, horizontal (Red Star), slightly recurved (Roxanne, Tessa), recurved”
- 27 to 38 To start with “Corolla tube:”
- 31 to 40 To start with “Corolla lobe:”
- 31 to 36 To have the following order of characteristics: “35, 36, 31, 33, 34, 32”
- 31 To have the words “on upper side” added
- 32 To be split into two characteristics as follows:
- “(i) Corolla lobe: color pattern” with the states “at tip, along margin, slashed, eyed, medium stripe”
- “(ii) Corolla lobe: shading” with the states “absent, present”
- 37 To read: “Corolla lobe: rigidity”
- 38 To have the state “elliptic” placed after “broad ovate”
- 39 To have the states “acuminate, sharp acute, blunt acute, rounded”
- 40 To read: “Corolla lobe: shape in cross section” with the Notes “1, 2, 3”
- 41, 43 To have the states “absent, sometimes present (petaloid modified and absent), always present”
- 45 To read: “Time of beginning of flowering.”

#### Working Paper on Test Guidelines for Cymbidium

45. The Working Party noted document TWO/29/2 prepared by experts from Japan and made the following main changes in that document:

(i) Material Required: To request a minimum of “30 plantlets (clones from *in vitro* propagation), hardened and planted in pots.”

(ii) Conduct of Tests: To have in paragraph 3 the word “As a minimum” deleted.

(iii) Methods and Observations: To have paragraph 2 read: “All observations should be made on 20 plants or parts of 20 plants. All observations on the leaf and the pseudo bulb should be made on the flowering pseudo bulb.” Paragraph 1 to have the new wording with a population standard of 1 per cent and an acceptance probability of 95 per cent leading to 1 off-type in 20.

(iv) Table of Characteristics:

Characteristics

3 To read: “Plant: formation of pseudo bulb” with the states “inconspicuous (1), conspicuous (2)”

12 To have the states “asymmetric (1), symmetric (2)”

27 To read: “Flower: general impression of petals and sepals” and to have the word “parts” in the states deleted

30 To read; “Flower: fragrance” with the states “absent or very weak (1), weak (2), strong (3)”

35, 42 To have the states “narrow acute, acute, obtuse, truncate, emarginate”

45 to 56 To be observed on the dorsal sepal in the following order:

45 (number of colors), 45(a) (color of middle part), 45(b) (Color change: abrupt, graduate), 45(c) (Color of margin), 46, 47, 48, 53, 54, 55, 56; the same order should also be followed for the petal, the lib and the column.

(v) The expert from Japan to prepare, before the end of the year, a new draft including example varieties and literature.

Working Paper on Test Guidelines for Kangaroo Paw

46. The Working Party noted documents TWO/28/6 and TWO/29/8 introduced by Mr. D. Waterhouse (Australia) and made the following main changes in document TWO/28/6:

(i) Methods and Observations: To have paragraph 1 replaced by the standard paragraph on the population standard (1 per cent) and the acceptance probability (95 per cent) leading to 1 off-type in 10. Thereafter several paragraphs to replace paragraphs 2 to 4 as follows:

“(2) Unless otherwise stated, all observations should be made on 10 plants or 20 typical organs from 10 plants when the first five flowers open on the dominant inflorescence.

“(3) All observations on the branching pattern should be made on the dominant inflorescence.

“(4) All observations and measurements on the leaf should be made on the longest leaf from the shoot with the dominant inflorescence. The leaf width should be observed at the widest point. The leaf attitude should be observed at the base. The leaf curvature should be observed in the middle third of the leaf.

“(5) For the observation of the number of flowers on the inflorescence all visible buds and flowers should be counted.

“(6) The width of the perianth tube should be observed at the base of the perianth lobes. For the observation of the length of the perianth lobes the longest lobe should be used. Reflexed lobes should be strengthened.

“(7) For the determination of the color of the pubescence the hairs should be removed and placed on white background, illuminated by natural light. The color of the basal part of the hair should be ignored. A magnifying glass of 10 x should be used.”

(ii) Grouping of Varieties: To use in addition to characteristics 1, 3 and 15 the flower color groups (apparent color of the hairs of the perianth tube) with the groups “green (1), yellow (2), pink (3), red (4), greyish purple (5), black (6).”

(iii) Table of Characteristics:

#### Characteristics

- 3 To read: “Inflorescence: ramification”
- 4 To read: “Inflorescence: degree of ramification” with the states “primary, (Bush Ranger 1), secondary (2), tertiary (3)” and to receive drawings for explanation; after this characteristic a new characteristic to be inserted reading: “Inflorescence: length of largest branch” with the states “short, medium, long”
- 7 To have the states “erect (1), semi-erect (3), horizontal (5)”; after this characteristic a new characteristic to be inserted reading: “Leaf: curvature” with the states “straight, slightly curved, strongly curved”
- 10 To be placed after characteristic 4
- 12 To have the “s” of “lobes” deleted and example varieties given
- 13, 14 to be placed after characteristic 11
- 14 To receive a plus (+) and an additional state “parallel sided (5)” with an additional drawing and amended drawings for states 3 and 4.



- 15 To have the first state read: “absent or very weakly reflexed”
- 16 To be deleted and to have a new characteristic inserted reading: “Flower: number of colors on hairs of perianth tube” with the states “one (1), two (2), three (3)”
- 17 to 19 To have “pubescence” replaced by “hairs”
- 17 To be split into: “Flower: color of middle third of hair on perianth tube” and “Flower: color of tip of hair on perianth tube”
- 18 To receive an asterisk
- 20 To have the Notes “1, 2, 3”
- 21 To have the order of the states reversed; thereafter a new characteristic to be inserted reading: “Time of beginning of flowering” with the states “early, medium, late.”
- (iv) Technical Questionnaire: To have the grouping according to 5.5 amended as mentioned under (i) above.

(vii) The expert from Australia to prepare, before March 1, 1997, a new draft.

#### Working Paper on Test Guidelines for Lavender and Lavendine

47. The Working Party noted documents TWO/28/9 and TWO/29/14 prepared by experts from France and made the following main changes in document TWO/29/14:

(i) Subject of the Guidelines: The Test Guidelines to apply to all vegetatively propagated varieties of the groups of the genus *Lavandula* of the family *Labiatae* as indicated in the document with slight corrections of the authors.

(ii) Material Required: To require as a minimum “10 young plants (less than one year old)” and to have the figure in III(3) and IV(1) also reduced to 10.

(iii) Conduct of Tests: To have paragraph 1 started as follows: “All observations should only start in the second year of flowering after planting. A test should normally be conducted for one growing period. If ....”

(iv) Grouping of Varieties: To be checked whether in the first instance the grouping should be made according to grouping of Chapter I in which case a separation key for the groups would have to be established.

(v) Table of Characteristics:

#### Characteristics

2 To be observed in winter, the expert from France to propose new states

- 5 To have the states “erect (1), semi-erect (3), horizontal (5)”
- 6 To have the first state read: “sparse”
- 6(a) To read: “Leaf: pinnation” with the states “absent, pinnate, bipinnate”
- 6(b) To read: “Leaf: incisions of margin” with the states “absent, present”
- 7 To read: “Flowering stem: branching”
- 8 To read: “Flowering stem: intensity of branching.”

(vii) General discussions: Time did not permit a discussion of all characteristics. The expert from France will prepare a new draft before March 1, 1997. The Working Party had a lengthy discussion on the two columns of example varieties which would have to be combined. The expert from France to check whether the examples in both columns really represent exactly the same expression. In case of doubt only one of them could be included in the Table of Characteristics. The Working Party also discussed the inclusion of characteristics on the oil content. It agreed that those characteristics could be included if they fulfilled the normal requirement as any other characteristic (not too expensive, repeatable, consistent, uniformity and stability could be checked, etc.) and if a description of a standardized method was added.

#### Status of Test Guidelines

48. The Working Party agreed that the draft Test Guidelines for Firelily (*Cyrtanthus*) and Serruria and the amendments to the Test Guidelines for African Violet should be sent to the Technical Committee for final adoption. It agreed that the draft Test Guidelines for Bouvardia should be sent to professional organizations for comments and that the Working Papers on Test Guidelines for the other species mentioned on the agenda should be (re)discussed at its next session. Lack of time did not permit discussion of the working papers on Test Guidelines for *Ficus benjamina*, Guzmania, Iris, Limonium, Pentas and Rubber during the current session. If experts had comments on those working papers, they should be sent to the expert of the country which established the working paper in order to speed up discussions during the next session.

#### Future Program, Date and Place of Next Session

49. At the invitation of the expert from Denmark the Working Party agreed to hold its thirtieth session in Denmark from September 1 to 5, 1997. It was planned that the following items would be discussed during the forthcoming session:

- (a) The use of image analysis in the DUS testing of ornamental plants;

- (b) Short reports on special developments in plant variety protection in ornamental plants and forest trees;
- (c) Important decisions taken during the last sessions of the Technical Working Party and the Technical Committee;
- (d) Testing of seed propagated varieties of ornamental species;
- (e) Questions arising from the 1991 Text of the UPOV Convention and other more general questions (essential derivation, novelty, discoveries, copyright of photos in variety descriptions, first application for a variety in a new species; New Zealand and the Netherlands to prepare documents);
- (f) Final discussions on draft Test Guidelines for Bouvardia;
- (g) New methods, techniques and equipment in the examination of varieties;
- (h) Central computerized database;
- (i) Discussion on working papers on Test Guidelines:
  - Chrysanthemum (Revision) (TG/26/4; United Kingdom to prepare a new draft before March 1, 1997)
  - Cymbidium (TWO/29/2); Japan to prepare a new draft before December 31, 1996);
  - Cypressus (France to prepare a draft before April 1, 1997, in cooperation with New Zealand)
  - GERALTON Wax Flower (Australia to prepare a draft)
  - Guzmania (TWO/29/9)
  - *Hippeastrum* (Netherlands to prepare a draft before March 1, 1997)
  - Iris (TWO/29/3)
  - Kangaroo Paw (TWO/28/6, TWO/29/8; Australia to prepare a new draft before March 1, 1997)
  - Lavender and Lavendine (TWO/29/14; France to prepare a new draft before March 1, 1997)
  - *Limonium* (TWO/29/4)
  - *Nerium* (France to prepare a draft before April 1, 1997)

- Ornamental Apple (Revision) (TG/14/5; United Kingdom to prepare a new draft before March 1, 1997)
- Pentas (TWO/29/10)
- Petunia (Israel to prepare a draft before April 1, 1997, in cooperation with Australia, Germany and New Zealand)
- Rubber (TWO/29/10)
- Tagetes (France to prepare a draft before April 1, 1997)
- Thymus (France to prepare a draft before December 1, 1996)
- Weeping Fig (TWO/29/6)
- *Zantedeschia* (South Africa to prepare a draft before April 1, 1997, in cooperation with New Zealand).

50. A subgroup on image analysis would meet in Hanover, Germany, on September 26 and 27, 1996 [changed to October 1 and 2, 1996].

51. As the chairmanship of Mrs. Löscher will terminate at the end of the coming ordinary session of the Council, the Working Party unanimously recommended to the Technical Committee to propose Mr. Joost Barendrecht from the Netherlands as chairman of the Working Party for the coming three years.

### Visits

52. In the morning of April 16, 1996, the Working Party visited the Neot Kedumim biblical botanic park where in a guided tour it received explanations on the plants grown in biblical times in presence of the plants grown there to give an expression of the landscape and life in that time. Thereafter it visited the Danziger Flower Farm specialized in pot plants and cut flowers covering breeding, production and marketing of *Petunia*, *Chrysanthemum*, *Aster*, *Solidago*, *Limonium*, New Guinea Impatiens and others. This was followed by a short visit of the Volcani Centre where the Israeli Plant Breeder's Rights Office is located.

53. On April 18, 1996, the Working Party visited the Gerbera breeder Dr. Yosef Shoub at Ganey Am where it received all explanations on Gerbera breeding with practical demonstrations. Thereafter the Working Party saw Kangaroo Paw trials with 87 varieties at Bet Yitchak and received explanations from Mrs. Roni Engel Kirchner on the selection of varieties for local production. In the afternoon a visit followed to the *Cactus* garden at Ramat Gan with a guided tour by Mr. Yair Elbar, an expert in the history of almost each plant in that garden.

54. In the late afternoon of April 18, 1996, the Working Party met with Israeli breeders of ornamental plants, producers and attorneys or other experts involved in ornamentals. It

obtained an introduction from Mr. Yerachmiel Bergner, a representative of the breeders, on the changes in the new Law on the Rights of Breeders of Plant Varieties (Amendment No. 2), 1996 - 5766, which entered into force on April 21, 1996, and will be in conformity with the 1991 Act of the UPOV Convention. The introduction was followed by individual small group discussions with the Israeli experts on all aspects of plant variety protection.

*55. This report has been adopted by correspondence.*

[Two Annexes follow]

TWO/29/15

ANNEX I

LIST OF PARTICIPANTS

I. MEMBER STATES

AUSTRALIA

Doug WATERHOUSE, Plant Variety Rights Office, Department of Primary Industries and Energy, P.O. GPO Box 858, Canberra, ACT 2601 (tel. +61-6-272 3888, fax +61-6-272 36 50)

FRANCE

Richard BRAND, GEVES, B.P. 1, Les Vignères, 84300 Cavaillon (tel. +33-90 712 685, fax +33-90 780 161)

GERMANY

Ulrike LÖSCHER (Mrs.), Bundessortenamt, Postfach 61 04 40, 30604 Hannover (tel. +49-511-9566 725, fax +49-511-563 362)

Andrea MENNE (Mrs.), Bundessortenamt, Postfach 61 04 40, 30604 Hannover (tel. +49-511-95 66 723, fax +49-511-56 33 62)

ISRAEL

Baruch BAR-TEL, Plant Breeders' Rights Council, Agricultural Research Organization, P.O.B. 6, Bet Dagan 50 250 (tel. +972-3-968 3492, fax +972-3-968 3492)

Ya'cov VAN DAM, Plant Breeders' Rights Council, Agricultural Research Organization, P.O.B. 6, Bet Dagan 50 250 (tel. +972-3-968 3492, fax +972-3-968 3492)

JAPAN

Koji KANAZAWA, Seeds and Seedlings Division, Agricultural Production Bureau, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-ku, Tokyo 100 (tel. +81-3-3591-0524, fax +81-3-3502-6572)

Keiji TANAKA, National Center of Seeds and Seedlings, Agricultural Production Bureau, Ministry of Agriculture, Forestry and Fisheries, 2-2 Fujimoto, Tsukuba, Ibaraki (tel. +81-298-38-6583, fax +81-298-35-6583)

NETHERLANDS

Joost BARENDRECHT, CPRO-DLO, Postbus 16, 6700 AA Wageningen  
(tel. +31-317-4768 93, fax +31-317-416 513, e-mail: C.J.Barendrecht@crpo.agro.nl)

#### NEW ZEALAND

Chris BARNABY, Plant Variety Rights Office, P.O. Box 24, Lincoln (tel. 64-3-325 6355,  
fax 64-3-325 2946, e-mail: pvro@lincoln.cri.nz)

#### SOUTH AFRICA

Elise BUITENDAG (Mrs.), Plant and Quality Control, Private Bag X11208, Nelspruit 1200  
(tel. +27-13 753 2071, fax +27 13 752 3854)

#### UKRAINE

Victor SOPRONYUK, State Commission of Ukraine for Testing and Protection of Plant  
Varieties, Suvorova st. 9, 252010 Kyiv (tel. +7-044-290 3191, fax +7-044-290 3365)

Iryna STARIKOVSKA (Mrs.), State Commission of Ukraine for Testing and Protection of  
Plant Varieties, Suvorova st. 9, 252010 Kyiv (tel. +7-044-290 3191, fax +7-044-290 3365)

### II. OBSERVER STATE

#### ROMANIA

Adriana PARASCHIV (Mrs.), Head, Examination Department, State Office for Inventions  
and Trademarks, 5 Jon Ghica, Sector 3, P.O. Box 52, 70018 Bucharest (tel. +40-1-615 1966,  
int. 260, fax +40-1-312 38 19)

### III. OBSERVER ORGANIZATION

#### EUROPEAN UNION

Dirk THEOBALD, Community Plant Variety Office, rue de la Loi 102, bureau 1/1,  
1040 Brussels, Belgium (tel. +32-2-299 1944, fax +32-2-299 1946)

IV. EXPERT

Jørgen H. SELCHAU, President of Ornamental Plant Section, ASSINSEL, Danish Association of Plant Breeders, c/o GPL International As, Postbox 29, 5200 Odense V, Denmark (tel. +45-6614 5070, fax: +45-6614 5084)

V. OFFICER

Ulrike LÖSCHER (Mrs.), Chairman

VI. OFFICE OF UPOV

Max-Heinrich THIELE-WITTIG, Senior Counsellor, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland (tel. +41-22 730 9152, telex 412 912 ompi ch, fax +41-22 733 54 28)

[Annex II follows]



TWO/29/15

ANNEX II

THE USE OF IMAGE ANALYSIS IN THE DUS TESTING  
OF ORNAMENTAL PLANTS

SUMMARY

*(prepared by the expert from Germany)*

Image analysis is one part of the so called image processing, the other part is image recording.

Image recording is the taking of images by a video camera and storing them either analogue or digitally. With recording images of plants or parts of plants it is possible to replace the taking of slides and one can compare similar varieties side by side on the screen, together with data of the characteristics of the plants which were assessed during the DUS-test. With this it is possible to reduce the number of varieties to be grown in the test because the selecting of existing varieties which are similar to candidate varieties is more precise.

Image analysis is the automatic measurement of different characteristics of leaves or flowers or seeds, done by a computer program. Image analysis shall in the future substitute some manual measurements, saving time because one image can be used for several measurements. Furthermore new characteristics may become available, for example by calculating the leaf area.

The hardware at the Bundessortenamt consists of a color video camera, a control monitor, a laser videodisc recorder and a workstation.

The program for taking images and the program for recording images are ready now. We are able to search for certain varieties within our database and we can bring their data and their images on the screen.

The pictures cannot only be taken by the video camera, but with a special tool we can also bring slides onto the videodisc and in the computer. So we are able to store the pictures of old varieties we have as slides too.

In the next months we will take pictures of the leaves, flowers and petals of those Pelargoniums which are under test this year. After that the image analysis program has to be developed to measure for example leaf length and width, flower diameter and so on. As basis for the image analysis program we use the same program as the Netherlands, SCIL-Image.

