



**TWO/30/12**

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

GENEVA

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

**Thirtieth Session  
Denmark, Svendborg, September 1 to 5, 1997**

REPORT

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

Opening of the Session

1. The thirtieth session of the Technical Working Party for Ornamental Plants and Forest Trees (hereinafter referred to as “the Working Party”) was held at Svendborg (Denmark) from September 1 to 5, 1997. The list of participants is presented in Annex I to this report.
2. Miss Jutta Rasmussen and Mr. Lars Jacobsen welcomed the participants to their country. The session was opened by Mr. Joost Barendrecht (Netherlands), Chairman of the Working Party.

Adoption of the Agenda

3. The Working Party unanimously adopted the agenda for its thirteenth session which is reproduced in document TWO/30/1 after having agreed to add an item 11(t) *Osteospermum*, to discuss item 6 on the Thursday and after having changed the order of the subitems in item 11 (a), (r), (j), (g), (o), (b), (h), (s) and deleted the subitems 11 (c), (i), (k), (l), (n), (p), (q). However, lack of time did not allow the discussion of items 11 (d), (e), (f), (g), (h), (m), (o)

and (t). The items 11 (b) (Cymbidium) and 11 (j) (Limonium) were discussed in parallel subgroups.

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

4. The Working Party received short reports from a number of countries. Most of them reported on the change in the number of applications for protection in ornamental species and on the preparation of their laws or the completion of those preparations to conform with the 1991 Act of the UPOV Convention. So far, only Denmark, Israel and the Netherlands had deposited their instruments of acceptance. While the number of applications had risen by 5% in New Zealand, they had dropped considerably in the Member States of the European Union, sometimes by more than half or even up to 70% due to the applicants applying for a European right instead of national rights. National applications were made mainly for varieties for which the applicant saw a market possibility in only two to three countries. The experts from Australia and Canada reported on the start of central testing under the auspices of breeders. So far, in Canada one center for the testing of Canola had been set up and in Australia five central testing accreditations had been issued, one for ornamental plants, the others for single species, sugar cane, Canola, etc. As it was the first year of operation, the new development needed still to be evaluated. Applicants using this central testing would obtain reductions in fees, as the office would make savings in its travel expenses.

5. In several countries, the list of species for which applications were possible had been enlarged, in some countries to cover the whole plant kingdom. Several countries had received applications for new species which required considerable time in order to determine the collection of varieties to be considered and to set up Test Guidelines. In New Zealand, applications had been received for cloned tree varieties for timber production in Cupressus and Acaciae. In these cases, a more agricultural-like approach was necessary with a study of characteristics of wood quality and timber production and clearly set objectives (e.g. few branches represented by longer internodes). Several countries had to work on achieving cost coverage or getting closer to it in the near future.

6. The expert from the European Community Plant Variety Office gave some updated information on the development of the Office which had started operation two years ago and had received about 2,500 applications in 1995, about 1,500 in 1996 and so far about 900 in 1997. About 60% of the applications were for ornamental varieties. More than 2000 rights had already been issued, but so far none for applications for which the crops had to be tested for the Office. More information can be found in Annex VI.

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

7. The Working Party noted documents TWO/29/16 and TWO/29/27 containing the draft Agenda and the report of the Subgroup Meeting on Image Analysis held at Hanover, Germany, on October 1 and 2, 1996. Ms. Menne (Germany) gave a brief report on the Subgroup Meeting and on the developments at the *Bundessortenamt* during the past year. A summary of her report is reproduced in Annex II to this report. As from next year, the

measuring of *Pelargonium* and *Impatiens* by hand of leaf length and width would be replaced by measurements through image analysis. The same would be studied for African violet and Elatior Begonia. The original idea of trying to harmonize the hardware and software used was no longer possible as member States had already gone rather a long way in choosing different hardware and software. It had to be determined what could be done despite the different hardware and software used to reach comparable results. It was now aimed at standardizing the capturing conditions and the storing of data. A ring test on roses had been agreed upon between France, Germany, the Netherlands and the United Kingdom to harmonize and compare recording methods and the quality of color images. Final results would be available at the end of 1998.

8. Mr. Van Eck (Netherlands) reported on studies on image analysis on the variegation of *Ficus* leaves. Of seven *Ficus* varieties on two plants each nine measurements are taken on 10 leaves each with in total 180 leaves per variety from branches from the top, the middle and the base of the tree. The idea was to measure the size of the features, to detect the different kinds of green and to quantify the green level pattern. He then explained how the length of the leaf was measured, the petiole length, the tip length, the maximum width, the relative ground color, the number of spots, the distribution of the color from the bord of the leaf to the midrib and the distribution from the tip of the leaf to the base. He concluded that the results showed that it was possible to distinguish all seven varieties with that method. By using the relative amount of green levels it was possible to increase the discrimination. By using the distribution of the green color, the expert would have a more unambiguous way of describing the variety. Through the availability of all data in digital form it was possible to store them in a database and use them for comparing images in the future. A list of summary statements is reproduced together with a table of significant levels in Annex III to this report. For those interested in the method, Mr. van Eck will be able to give information on the company which developed a system of hardware and software to do the above measurements.

9. The Working Party welcomed the explanations but agreed that the whole methods should only be used to describe differences seen by the eye of the expert. The results should not become a part of a variety description but only additional information.

10. The Working Party finally agreed to continue in its next session with *ad hoc* contributions on image analysis. The Subgroup on Image Analysis should meet again at the end of 1998 when the final results of the ring test on roses would be available. In a Circular, all member States should be asked whether, in other than the above four States, work on image analysis applied to other species had started or was under way.

#### Important Decisions Taken During the Last Sessions of the Technical Working Party and the Technical Committee

11. 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/33/11.

12. Admixtures: The Technical Committee noted the different positions on the concept of admixture in relation to off-type. It was noted that, in the TWA, an admixture was a plant

which did not belong to the variety and was clearly not an off-type. In other words, a barley seed within wheat was an admixture which might have been caused by mixing or in other ways, while an off-type belonged to and came from the variety through a genetic difference expressed in the phenotype. The Working Party did not agree with that definition. In its opinion, an admixture had to be considered an off-type irrespective of whether it was from a different variety of the same species or even from a different species. If one did not accept that, applicants short of plants would intentionally add different species if in that way they could achieve valid applications with less material of their variety.

13. Definition of off-type: The Technical Committee had considered that the definition of off-type was not clear. The previously prepared word “significant” had a statistical connotation and, also, significance in leaves was different from that in fruits. The word “clear” was more restricted to what can be seen visually, while “significant” included much more than seeing. It therefore seemed better to stay away from both “clear” and “significant” and search for a more general definition which, if needed, could differ depending on the genus or species under study. It was important to point out that the aim was to distinguish a variety, so the word to be chosen should be considered in relation to distinctness.

14. The expert from New Zealand therefore proposed a new wording for the definition separating the basic fact and the adaptation to the individual species needed in two sentences. The Working Party also agreed that the definition of off-type should cover the definition of admixture. After further discussions and redrafting, it finally agreed on the following wording:

“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.”

15. Transgenic/GM varieties: The Working Party noted that the Technical Committee reconfirmed its decision to include, in the Technical Questionnaire of the Test Guidelines for Rape Seed and in future in other relevant Technical Questionnaires, a broad question whether the variety would “require authorization for release under legislation concerning especially the protection of the environment, human and animal health in the country in which the application is made” and whether such authorization had been obtained. The question was not intended to be limited to GM varieties but to elicit information where appropriate on other restrictions on release. The CAJ during its session held on October 21, 1996, decided to amend the text as follows:

“4.3(i) Does the variety require prior authorization for release under legislation concerning the protection of the environment, human and animal health?

Yes [ ] No [ ]

“Has such authorization been obtained?

Yes [ ] No [ ]”

If the answer to that question is yes, please attach a copy of such authorization.”

The Working Party agreed that for the ornamental species, all Test Guidelines should contain such a request in their Technical Questionnaire.

16. Resistance characteristics: The Working Party noted the request of the Technical Committee to discuss the question of the use of resistance characteristics on the basis of results of a questionnaire to be issued. Preliminary summary results were reproduced in document TWO/30/11. The Working Party noted the document. As in its field of species resistance characteristics had not been used so far, it abstained from making any remarks.

17. Screening of varieties: The Working Party noted the discussions on the screening of varieties in the Technical Committee and its request to study the subject and give a report of the discussions to its next session. The Working Party noted that at present in its field of competence there was no use made of electrophoresis or DNA marker for the screening of varieties and the selection of varieties to be grown in the open or in the glasshouse. The Working Party was in principle against such use, but did not want to exclude it completely. The use had, however, to make sense. These methods should therefore only be admitted for screening if a strong correlation existed between the characteristic in question (e.g. the band or bands in the case of electrophoresis) and morphological or physiological characteristics used in the Test Guidelines. If that was not the case and there was no connection to an expression in the plant, the screening by these means should not be admitted.

18. Trade names: The Working Party noted that the Technical Committee and the Administrative and Legal Committee, during its session on October 21, 1996, decided against the inclusion of the trade name in the Technical Questionnaire.

19. Picture of the variety added to the official variety description: The Working Party noted that the Technical Committee agreed to the use of a photo in connection with an official variety description for certain aspects, but only if it was made clear in advance for what purpose the photo was used. It should not be used for distinctness purposes.

20. Preparation of documents for coming sessions: The Working Party noted that the Technical Committee had decided that in future one month before a given session the Office of UPOV had to check which planned documents had been prepared and circulate a new draft agenda, deleting all items from the agenda for which no planned documents had been received at the Office of UPOV. It confirmed that this principle should be applied for all Technical Working Parties. The Working Party welcomed that discussion and agreed that it would even aim at preparing the documents at least two months before the next session.

21. UPOV documents in electronic form: The Working Party noted that the Technical Committee had noted the usefulness of documents in electronic form. It also noted that in the TWF a second 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 various 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. For that purpose an index of all documents would facilitate any search.

22. List of statistical documents prepared by the TWC: The Working Party noted that the TWC had prepared document TWC/15/2 containing a list of documents produced by it, and document TWC/15/3 containing a top index of those documents. The Working Party appreciated the updating of those lists and especially the topic index which made it easier to find a particular document on a given subject. It proposed to continue for some years with the updating of printed documents in addition to its plans to make the documents in future available on the World Wide Web.

23. COYD and COYU analysis: The Working Party noted that the Technical Committee approved a revised version of the Combined-Over-Years Distinctness (COYD) criterion and the Combined-Over-Years Uniformity (COYU) criterion as contained in document TC/33/7 which replaced the version as contained in document TC/30/4 and that that version would become part of a revised General Introduction to Test Guidelines and that it encouraged more States to request the DUST computer program and apply it in their own Offices.

24. Windows Version of DUSTW: The Working Party was informed that in a pilot study for the production of a Windows version of DUSTX the general DUS data analysis package for the PC, a prototype program DUSTW had been produced. The prototype included the DUSTX programs: CHOSX, MERGX, ANALX, TESTX, TVRPX and UNSLX. It would run on 386, 486 and Pentium PC's under Windows 3.1 or Windows 95 (where an SX chip was used, a maths coprocessor is recommended). Whereas DUSTX was run from within MSDOS, the majority of today's software was run from within Windows. With DUSTW or DUSTX for Windows the appearance of the program was more familiar to today's users and together with the greater interactive capabilities of Windows technology, the program was simpler to use and to learn. DUSTW was written with the DUSTX programs at its core, using the same control files to pass input and output file names and parameters to the programs. With DUSTW, instead of the user needing to edit the control files as necessary with DUSTX, the information was gathered by the program guiding the user to select filenames and options from windows displaying lists of filenames and options (including variety and character names where relevant). When the full version of DUSTW, or DUSTX for Windows was produced the user would be able to use data from Excel spreadsheets as well as from the carefully formatted ASCII files currently required by DUSTX. The program would also be capable of being run in languages other than English. More information can be found in document TWC/15/7. The Working Party stated that in their field of competence the COY analysis had so far no or very little application.

25. Developments in the World Wide Web: The Working Party noted that in the TWC the importance of E-mail on the World Wide Web and the future trends had been discussed. With respect to UPOV, the situation was as follows: (a) the UPOV office in Geneva already had well advanced plans for the establishment of a Web server; the server would initially provide basic information about UPOV; its history, objectives, membership, structures, principal officers and thereafter some of the formal documents (e.g. text of UPOV Conventions, Test Guidelines) would be placed on the server for access in electronic form; (b) an EU Fourth Framework FAIR Program proposal had recently been submitted by CPRO/NIAB/BioSS/GEVES to develop variety image database structures which might allow access from Web browsers and (c) the use of the Web for the provision of on-call training in science and technology had become increasingly important. An example of interest to crop specialists was the SMART system, a

collaborative initiative aiming to provide user-friendly training in quantitative methods for scientists and technical specialists. It was available in six languages and could be accessed at <http://www.bioss.sari.ac.uk/smart/unix/smart.html>. The TWC had welcomed the offer made by the expert from the United Kingdom to set up an E-mail discussion group open to all TWC experts which would be used for discussion of certain subjects by the three special interest groups on visually-assessed characteristics, on BMT data, and on uniformity. It was also proposed whether it could be useful to have Internet structures which facilitated electronic communications and provided an information resource. These might include: (a) an E-mail discussion list where queries and news items might be posted; (b) one or more Web links on UPOV technical matters could be established; this could provide access to the Working Party documents as well as facilitating links between collaborating centers and individuals; (c) the possibility of using video conferencing facilities should be considered for short meetings involving small groups of individuals.

26. Harmonization of states of expression and Notes for different characteristics: The Working Party noted that the Technical Committee had taken note of document TC/33/8, Annex II to TC/33/3 and of the discussions held at the TWF, the TWO and the TWV on the harmonization of expression and Notes for different characteristics. On a proposal from the Editorial Committee, the Committee had agreed that the expert from South Africa would amend document TC/33/8. In connection with the above document, the General Introduction to Test Guidelines (TG/1/2) would also be revised and the first task for preparing a preliminary draft for a revised version would be carried out in a group consisting of members of the Editorial Committee, the Chairmen of all the Technical Working Parties and the Chairman and Vice-Chairman of the Technical Committee. The Office of UPOV will collect the information on which part of the General Introduction to Test Guidelines should be revised by the members of the above group. The Working Party noted the new document TWF/28/7 prepared by experts from South Africa and a collection of certain rules provisionally agreed upon by the Editorial Committee as reproduced in document TWF/28/9.

27. The expert from South Africa gave a short explanation of the basic principles of the document and explained the different cases appearing on the basis of a summary as reproduced in Annex IV of this report and examples from document TWF/28/7. The Working Party praised the expert for that excellent document which for the first time clearly laid down the different cases. It would have appreciated it if the Editorial Committee had prepared such a document several years earlier. It should be taken as a lesson for the future to improve the harmonization and facilitate the work of the Editorial Committee to fix the rules for the different cases more precisely. In the discussion on Test Guidelines following these explanations it immediately tried to be preciser and follow the different cases listed. The Chairman invited all experts to study the documents TWF/28/7 and TWF/28/9 and apply the rules to new drafts they would prepare for the next session. If they encountered questions or had proposals for further improvements these should be sent to the expert from South Africa.

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)

28. Testing the first variety in a species: The Working Party noted document TWO/30/4 prepared and introduced by the experts from New Zealand. The document pointed out that New Zealand had quite some experience in the testing of first varieties in a species. It then explained the assumption with which the testing would start, the definition of variety, especially as there was no comparable variety existing for that species, the problem of newness as the material might have been marketed without a specific denomination, the special problems and difficulties if the taxon had so far not been present in the country concerned and the identification of varieties of common knowledge. It then gave an example of how New Zealand had tested a first variety in the species *Lavandula dentata*. It concluded that national authorities which tested new varieties should aim at achieving an acceptable compromise between the absolute requirements of the UPOV Convention and the practical realities of testing. This ideal balance was tested in cases involving a first variety in a species. In such cases, the testing authority had no experience with the species but was required to make a technically sound DUS recommendation. The experience that a testing authority lacked could be held by the breeder. It is important with first varieties in species that the breeder and the testing authority had some level of working cooperation. There was always a risk that a variety of common knowledge had been missed or that a discovery from the wild was not actually a variety. The ability to later nullify or cancel a breeder's right could correct an earlier error. However, this should only be used as a last option.

29. The expert from New Zealand further stated that the main aim of writing the document had been to raise the question and make experts reflect of what was a variety of common knowledge and what was to be considered the first variety in a new species, especially in the case where a clonal propagation of a plant material was sold under the species name. Many experts agreed that clonal material even if sold under the species name without an own denomination had to be considered a variety. Several experts reported that in the past there had not been so much international trade in varieties but at present many ornamental varieties were sold worldwide. Today plant hunters would use the Internet to find new varieties in any part of the world. Thus world common knowledge would be required although it was impossible to know all varieties grown in a backyard of any country.

30. Applications for breeders' rights in a new species: The expert from the Netherlands introduced document TWO/30/7 prepared by him. He stated that most cases would arise for ornamental species. From the 1150 applications yearly for 75 to 100 different species, about one to five cases had to be handled yearly, mostly clones from wild material. The first problem would be to check the botanical name. Thereafter it was necessary to get an idea of the variation inside the taxon by asking for additional information from the breeder or even seeing the variety in his nursery or other experts in that taxon. Varieties can be easily obtained through selection but it is difficult to check whether that selection had not already been marketed somewhere on a local market in a faraway country from which it was difficult to obtain information. He then gave some examples for *Epipremnum* (Araceae), *Calathea* (Marantaceae) and *Calochortus* (Liliaceae). He concluded that as the office would have no experience in the growing of the species, tests might preferably be done on the premises of the applicant. As no experience on the description was available it was difficult to establish



Test Guidelines and the first varieties would have a description following more the classical Linnaean way.

31. Several experts agreed that they also would follow a similar procedure and the first variety description would be more a botanical description as there was no variety with which the first variety would have to be compared. If the material was found in the wild, the experts would contact botanists to find out about the variation inside the species concerned. Here also better cooperation between experts from other national authorities in other member States could be envisaged. However, each case might require a different approach.

32. The Working Party had lengthy discussions on how much selection or breeding work was necessary to enable plant material collected in the wild to be protected. It could not reach a final conclusion. It noted that a similar situation arose when selections were made out of landraces which were heterogeneous populations. Several experts considered that the selection of seed from a population in the wild or in a landrace, its sowing and the selection of a clone from that sowing was sufficient to enable protection of that clone. Others considered that to be insufficient as no recombination of genes had taken place.

33. Several experts were worried whether it were possible to select a plant in the wild and ask for protection of clonal material from that plant. All agreed that if the plant material was collected from a local market where plant material was sold, such clones would lack novelty and could thus no longer be protected. The problem was, however, to know the exact origin of the variety.

34. Essential derivation: The Chairman distributed photocopies of an article prepared by an expert from the Netherlands on essential derivation. The Working Party was informed that the Office of UPOV had before been asked to prepare it as a document for the session. After having consulted several sources it had refused to do so as the article dealt with a legal matter for which the right forum for discussion was first the Administrative and Legal Committee. It contained in addition several personal opinions and an interpretation of one single person which other legal experts would not be able to follow or judge differently and which thus could lead technical experts to wrong conclusions. The Chairman justified the distribution of the paper with the fact that technical experts would be approached to give advice in court cases and thus they had to be prepared for those situations. He agreed to the legal nature of the paper and therefore did not allow discussions on the paper but only on whether UPOV should give guidance on essential derivation. Several experts felt it to be a risk to leave the interpretation to courts. UPOV should discuss and monitor the first cases as the judgments will have an effect on the technical work on DUS tests. Therefore, technical experts should also look into the question. They should look at certain practical cases for example mutations, the mutation trees, look at their characteristics, discuss and exchange views to be prepared for harmonized advice when requested by the courts. As that looked too theoretical, the majority did not share those views and decided to wait first for the breeders' agreement on a common interpretation.

35. Judgments of vectors: During the visit at Aarslev, the Working Party noted that in DUS trials on *Euphorbia* there had been cases where the difference in varieties had only been caused by the presence of a vector. It recalled that several years ago a similar case had arisen for *Pelargonium* where the difference was caused by a vector transferred only by grafting. At

that time opinions in UPOV had been split. Some member States had considered the vector similar to a virus infection. As a virus infected variety was not considered to be distinct from the same virus-free variety, the presence of a vector would not lead to a different variety. Others had considered that the vector had become a part of the genome and that a different variety therefore existed. Similar differences existed in other fields, e.g. cytoplasmic male sterility. While some States considered the sterile form to be part of the fertile variety, others considered the sterile form to be a separate distinct variety. In the past the case of *Pelargonium* solved itself as the variety was refused protection because of lack of uniformity and no final decision was reached in UPOV on the question of the vector. As the matter had now come up again for *Euphorbia*, the Technical Committee and possibly the Administrative and Legal Committee were asked to give advice on how to handle those cases. The experts from Germany and the Netherlands would prepare a separate paper explaining the details of the problem to the Technical Committee.

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

36. Mr. Bartels (Fleuroselect) gave a short introduction to the system of Fleuroselect which covered almost all breeders of seed propagated varieties. He explained why the breeders of seed produced varieties wanted to have closer contact to UPOV and try to achieve cooperation. The Fleuroselect system worked well but it was more of a gentleman's agreement or a commercial deal. Moreover, an advantage was seen if it could be combined with legal protection. More information on the Fleuroselect trials is reproduced in Annex V to this report.

37. The Working Party noted that the Technical Committee had discussed the comparative trials of new varieties undertaken by breeders of Fleuroselect. Circular U 2448, dated August 5, 1996, gave more details on these trials. Experts from several countries had visited Fleuroselect's trial fields. They had been in good shape, had a good reference collection and showed good variety knowledge. The criteria used by Fleuroselect seemed, however, rather close to agronomic value. In the eyes of most experts it was important that for plant variety protection, although the growing of the plants would be on the premises of the applicant, at least the official observations had to be made according to a protocol established by the national authority and by officials from the national authorities. Several experts considered it impossible for the applicant to test his own varieties. Also, legal aspects had to be considered. Fleuroselect was a breeders' association but it did not cover all breeders: testing was available only for members. The whole subject needed much more study before a decision could be taken on the form of involvement of Fleuroselect.

38. The Working Party agreed, however, that Fleuroselect could offer help in supplying information, especially on reference varieties. Mr. Bartels explained that the novelty register was open to everybody and was also available on Internet. It would have to be studied whether a Fleuroselect trial could be used as a second trial and through its information could shorten the testing period. As different countries applied different testing systems in the end the cooperation could only take place within the legal limits of the individual national laws.

39. The Working Party discussed briefly the problems they had encountered when, in a species in which so far varieties had been propagated vegetatively, the first applications for

seed propagated varieties had been received. As there existed no seed propagated varieties, how would one decide what was a reasonable uniformity level in the case of a cross-pollinated variety when according to UPOV rules only relative uniformity was required or in the case of a hybrid?

40. The Working Party asked the Technical Committee to give guidance on the criteria to be used to reach a decision on a reasonable uniformity level which would neither block new developments in plant breeding if it were too strict nor allow too heterogeneous varieties from which too easily selections for vegetatively protected varieties could be made. How would one be able to know the level of breeding and whether it was possible for the applicant to make his variety more uniform, or whether the uniformity level existing was the highest possible in that species and any request for a higher level would close the way for protection of seed propagated varieties in that species? Would a stable percentage of different markings in one characteristic be acceptable? Would there be different uniformity levels e.g. less strict in a white color, where any other color marking is more easily seen, than for example in a red or pink color where small markings are easily overshadowed and more difficult to be detected? As specific cases, the Working Party mentioned applications for F<sub>1</sub>-hybrids and F<sub>5</sub> or F<sub>6</sub> generations in *Pelargonium peltatum* where so far only vegetatively propagated varieties had been protected.

#### Final Discussions on Draft Test Guidelines for Bouvardia

41. The Working Party noted the draft Test Guidelines for Bouvardia as reproduced in documents TG/158/1(proj.) and comments made by the Editorial Committee. It finally made the following main changes to that document:

- (i) Methods and Observations: To have the figures deleted from paragraph 2.
- (ii) Characteristics and Symbols: To have paragraph 3 deleted.
- (iii) Table of Characteristics:

#### Characteristics

9 To have the last state read: “rigid”

31, 32, 39, 40 To have the words “outer lobes” placed between brackets

45 To read: “Style: length”

(iv) Technical Questionnaire: To have “seed” added under paragraph 4.2 as another method, to have the standard paragraph on “GMO” varieties and to have characteristic 26 included in paragraph 5.

New Methods, Techniques and Equipment in the Examination of Varieties

42. Mr. Thiele-Wittig gave a short summary report of the fourth session of the Working Group on Biochemical and Molecular Techniques and DNA Profiling in Particular (BMT), referring for further details to document BMT/4/21 Prov. During its session, the BMT had heard short presentations of research results on Azalea, Carnation, Maize, Oilseed Rape, Peach, Potato, Ryegrass and Tomato; it had heard explanations on the usefulness and the limitations of statistical methods and especially on similarity, clustering and dendrograms, a review of methods for cluster analysis of marker data, on the use of the analysis of molecular variance (AMOVA) for distinctness studies and noted especially the frequent misuse of dendrograms as results of a study; it had 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 that only in few cases were there correlations between morphological characteristics and DNA marker; it had noted the reconfirmation of the position of the breeders vis-à-vis DNA profiling and on the study on the use of DNA profiling methods by expert witnesses in disputes on essential derivation and on the effect of different plant breeding schemes in the evaluation of parentage between them and that the judgment of essential derivation was not considered to be a task for the national authorities although the courts may approach national authorities for technical advice; it had very contradictory views on the possible use of DNA profiling for prescreening as a possible tool in DUS testing; it had noted that the biggest shortcoming remained in the checking and control of uniformity in characteristics obtained with biochemical or molecular markers, and had very lively and contradictory discussions on possibilities and consequences of the introduction of DNA profiling methods for DUS testing.

43. The next session of the BMT is scheduled to take place under the extended chairmanship of Mr. Joël Guiard (France) in Beltsville, United States of America, from September 22 to 24, 1998. During that session, discussions are planned on the following subjects: (a) Short presentation for 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 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) the use of DNA profiling methods by expert witnesses in disputes on 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).

44. The experts from the United Kingdom and from Denmark who had attended the last BMT session confirmed that in the session there had been too many presentations of papers by scientists with little knowledge of the UPOV philosophy. Many crop experts when asking question had been left without an answer as the scientists were unable to give an answer. The research results were mostly scientific results only to identify varieties. The BMT should nevertheless continue its discussions to avoid only big firms using developments in that field. However, more should be done to improve knowledge of crop experts in the Technical Working Parties on those methods.

45. The Working Party agreed especially to the last remark and asked that for its next session either an expert in these new methods from the country where the session would take place or even better in addition to him the Chairman of the BMT should be asked to explain those methods and the problems involved. Reference was also made to document BMT/3/2 prepared by experts from Belgium which gave summary information on different methods.

#### Central Computerized Database

46. 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 2554 dated July 16, 1997, distributing the third disc in 1997. The Office of UPOV aimed at issuing an updated disk every second month. Discussions were under way to include in the UPOV-ROM the OECD List, the European Union Catalogue and the List of Varieties from the Community Plant Variety Office of the European Union. Discussions with respect to the OECD List had been completed, and the UPOV-ROM to be distributed in October 1997 would contain the whole OECD List. It was expected that the UPOV-ROM would comprise several improvements before the end of the year and especially enable its use on a local network. It was also expected that at the beginning of 1997 it would be offered to the private sector at an annual subscription price of 750 CHF.

47. Several experts had had a chance to study the UPOV-ROM and expressed their satisfaction. The Working Party invited all the experts to contact their respective colleagues at the national level for them to also see and assess the information on the disc and make any comments for further improvement. As several experts had not seen the UPOV-ROM, Mr. Thiele-Wittig gave a short demonstration of the content of the UPOV-ROM with its three parts, the combined database with the taxon information, the text part in pdf (portable document file) format with information from the member States on their data, all texts of the different Acts of the UPOV Convention, the Recommendations on Variety Denominations, the General Information Brochure, the lists of addresses of national PVR Offices, the list of UPOV publications and various other information and the part containing the original data from each member State in a password protected version.

48. Several experts expressed the wish that, once the periodic publication was well under way, possible improvements helpful in the ornamental sector should also be considered. The expert from Israel agreed to prepare for the next session a document on possible future steps and invited all experts to send him any comments or wishes to be included in that document. At present the use of different Latin names was very confusing. The Office of UPOV explained that that confusion would be solved as soon as the UPOV Code was ready, hopefully in the near future. The Working Party also invited more States to include trade names which as present was done only by very few States.

49. List of varieties under test: The expert from New Zealand referred to a former decision to exchange tables with lists of varieties under test in the individual member States. He questioned whether, in view of the UPOV-ROM, that exchange of lists still served a purpose. It appeared that several experts were not at all aware of the existence and exchange of such lists. The Working Party finally proposed to the Technical Committee to consider abandoning such exchange as most of the information could be obtained from the UPOV-ROM. If

needed, UPOV should increase the number of copies given free of charge to each member State.

### Discussion on Working Papers on Test Guidelines

#### Test Guidelines for Chrysanthemum (Revision)

50. The Working Party noted documents TG/26/4 and TWO/30/8 prepared by experts from the United Kingdom and made the following main changes in document TWO/30/8:

(i) Subject of these Guidelines: To have the author “Des Moul.” corrected.

(ii) Conduct of Tests: To have in paragraph 3 the reference to the schedules and the growing schemes placed in an Annex and the growing conditions reworded as “should.”

(iii) Methods and Observations: To have paragraph 1 copied from Bouvardia; paragraph 2 to refer to “20 mother plants” with “one off-type.” For uniformity assessments, the whole submitted sample should always be used. In paragraph 4 the last sentence should refer to “floral” characteristics and thereafter the second sentence of paragraph 6 should be added while its first sentence should be deleted.

(iv) Technical Questionnaire: To have in paragraph 4 the request on GMO varieties added and in paragraph 4.3(b) the words “Stopped (pinched)” replaced by “Multisystem (stopped or self stopping)” and in paragraph 5 the characteristic 5.4 split into the characteristic on ray floret with RHS and on the color grouping and paragraphs 7.2.1 and 7.2.2 included under paragraph 5.4 whereby “Natural Season Varieties” would include “directed culture” and paragraph 7.3 would be deleted. The virus situation has still to be clarified.

(v) Table of Characteristics:

#### Characteristics

- 2, 3 To have the word “pot” inserted before “varieties”
- 11 To have the states from “very small” to “very large”
- 12 To have the states “small, medium, large”
- 14 To read: “Leaf: number of incisions of margin” with the states from “very few” to “very many”
- 15 To read: “Leaf: depth of incisions of margin”
- 17 To have the drawings amended
- 18 To have “green” from the states included in the characteristic

- 26 To have the states “absent or very few (1), few (2), many (3)”
- 28 To have state 3 read: “between semi-double and double”
- 29 To have the states “fully incurved (1), incurved (2), skirted incurved (3), reflexed (4), fully reflexed (5), brushed (straight florets) (6), semi-pompon (7), pompon (8)”
- 31 To have state 2 read: “light yellow,” state 14: “purple with gold reverse,” state 15: “red or purple and white bicolor,” state 16 “red or purple and yellow bicolor,” state 17: “brown,” state 18: “green”
- 34 To read: “Flower head: length of peduncle”
- 35 To read: “Flower head: color of papery margin of involucre bract”
- 36 To be limited to “Semi-double and between semi-double and double varieties only,” with the states “few, medium, many”
- 37 To have state 1 read: “absent or very few”
- 39 To read: “Flower head: attitude of basal part of ray florets” with the states “very strongly ascending (1), moderately ascending (3), horizontal (5), moderately descending (7), very strongly descending (9)”
- 47 To read: “Ray floret: size of projections at mouth of corolla tube”
- 48 To have the states “very strongly concave (1), moderately concave (3), approximately flat (5), moderately convex (7), very strongly convex (9)”
- 50 to 52 To have the words “of margin” added
- 51 To have “strength” replaced by “degree”
- 52 To have state 2 placed at the end
- 55 To have the words “excluding outer rows” added
- 56 To read: “Excluding straight ray florets: Ray floret: proportion of longitudinal axis which is not straight”
- 57 To read: “Excluding straight ray florets: Ray floret: degree of curvature of longitudinal axis”
- 58 To read: “Ray floret: longitudinal axis of outer rows (if different to 55)” and to have the asterisk deleted
- 59 To read: “Excluding straight ray florets: Ray floret: proportion of longitudinal axis of outer rows which is not straight (if different from 56)”

- 60 To read: “Excluding straight ray florets: Ray floret: degree of curvature of longitudinal axis of outer rows (if different to 58)”
- 63 To have the states from “very small” to “very large”
- 64 To have “mid point” replaced by “middle”
- 67 To have the words “on lower side” added and the first state read: “bristles and/or hairs”
- 67, 70 To have the words “of ray florets” added
- 73 To be split into: “73.1 Daisy-type, excluding double varieties” and “73.2 Anemone-type, excluding double varieties”
- 74 To read: “Excluding double varieties: Disc: diameter: relative to flower head” with the states “small, medium, large”
- 75 to 77, 79, 81 to 84: To be limited to “Daisy-type only”
- 75 To read: “Daisy-type only: Disc: surface” with the states: “smooth, bumpy”
- 76 To have state 2 read: “weakly conical”
- 78, 80 To be limited to “Varieties with brown or brownish-black discs only”
- 78 To read: “Disc: color before anther dehiscence”
- 80 To read: “Disc: color at anther dehiscence”
- 81 to 84 To be limited to “Daisy-type only”
- 82 To read: “Disc: size of dark spot at centre relative to disc”
- 83 To read: “Disc: color of dark spot at centre”
- 84 To read: “Disc: pollen” with state 3 to read: “abundantly present”
- 85, 86, 88, 89 To be limited to “Anemone-type only”
- 85, 86 To have the characteristic start with “Disc: .....”
- 87 To have the states: “small tubular, large tubular, tunnel-shaped, quilled, petaloid”
- 90 To receive explanations
- 91 To read: “Natural season varieties only: Time of full flowering”



Test Guidelines for *Cymbidium*

51. The Working Party noted document TWO/29/2 prepared by experts from Japan and that in a Subgroup further changes have been made. It agreed to send the document containing the results of the Subgroup meeting to the professional organizations for comments.

Test Guidelines for *Limonium*

52. The Working Party noted document TWO/29/4 prepared by experts from the Netherlands and that in a Subgroup some further changes had been made. It agreed to send the document to the professional organizations for comments.

Test Guidelines for Weeping Fig

53. The Working Party noted document TWO/29/6 prepared by experts from the Netherlands and made the following main changes in that document:

(i) Material Required: To have the last sentence of paragraph 1 deleted.

(ii) Methods and Observations: To have the words “of 6 to 8 months old” added to paragraph 1; paragraph 3 to apply to the “young leaf” and paragraph 4 to the “mature leaf”; both paragraphs to receive the additional sentence: “The color should be observed on the upper side.”

(iii) Technical Questionnaire: To have in paragraph 4 the request on GMO varieties and the paragraph 7.3, and in paragraph 7 the request for a photo.

(iv) Table of Characteristics:

Characteristics

- 1 To have the states: “upright, semi-upright, horizontal, semi-drooping”
- 2 To have the states: “narrow acute, broad acute, approximately right angle, obtuse”
- 3 To read: “Plant: attitude of tip of shoot” with the state 7 to read: “semi-drooping”
- 5 To have states 2 and 3 read: “medium green (2), greyish green (3)”
- 6 To have state 4 read: “medium brown”
- 7 To read: “Stem: torsion”
- 10 To have state 2 read: “yellowish white”
- 10 to 12 To put “Stipules” into the singular

- 12 To read: “Stipule: hue of color flush”
- 10 to 40 To have the order of characteristics “stipule, leaf blade, petiole”
- 16 To read: “hue of color flush in young stage”
- 17 To be split into “length” and “width”
- 18 To have state 3 read: “broad-elliptic and broad ovate”; the drawings amended and the example variety “Vivian” deleted twice
- 19 To have the states “asymmetric (1), symmetric (2)”
- 20 To have state 3 read “three or more”
- 21, 22 To have the bracketed content deleted
- 25, 26, 31 To have the words “on upper side” deleted and state 1 read: “yellowish white”
- 28 To be placed before characteristic 27
- 29 To have “third” replaced by “tertiary” and the first state read: “yellowish white”
- 30 To have “ratio of ... to ...” replaced by “... compared to ...”
- 32 To have “color” added before “contrast” and the Notes changed into “3, 5, 7”
- 34 To have the states “short, medium, long” and the drawing turned upright by 45 degrees
- 35 To have the first state read: “absent or very weakly present”
- 36 To read: “Leaf blade: shape in cross section” with the Notes “1, 2, 3”
- 37 To have the Notes “1, 2, 3”
- 39, 40 To receive drawings and explanations
- 39 To have the bracketed addition “number”
- 40 To have the bracketed addition “height”

Test Guidelines for *Zantedeschia* (Calla Lilly)

54. The Working Party noted document TWO/30/2 prepared by experts from South Africa and made the following main changes in that document:

(i) Material Required: The plant material recommended to be 20 tubes of flowering size or 20 young plants of flowering size; in paragraph 3 there should be no treatment, “especially not with giberillic acid”

(ii) Conduct of Tests: In paragraph 3 in the first line the words “shade netting (40%) under” to be deleted, under “Planting time” the words “to October” to be added, under “Fertilization” the words “organic fertilization” to be deleted and under “Shading” to read: “Without shading or with 40% shade cloth, depending on local conditions.”

(iii) Methods and Observations: Paragraph 1 to be limited to measurements, in paragraph 2 the figure to be “20.”

(iv) Literature: To have additional literature added.

(v) Grouping of Varieties: To have characteristic 14 added.

(vi) Technical Questionnaire: To have under paragraph 4 the request for the method of reproduction added (*in vitro*, tuber, seed), under paragraph 5 the characteristics 1 and 14, and under paragraph 7 the use of the variety (garden, cut flower, pot plant).

(vii) Table of Characteristics:

### Characteristics

3 To have after this characteristic three additional characteristics added:

- (a) Plant: total number of shoots (few, medium, many)
- (b) Plant: number of shoots with flowers (few, medium, many)
- (c) Plant: ratio total number of shoots/total number of shoots with flowers (small, medium, large)

18 To be deleted and replaced by a new characteristic reading: “Petiole: color at lower part (RHS)”

19 to 21 To have “Peduncle” replaced by “Scape”

23, 24 To receive a drawing to be prepared by New Zealand

26(a) To have a new characteristic inserted reading: “Spathe: secondary color of inner side (RHS)”

28-30 To be observed at “inner side of throat”

34-36 To receive explanations

35 To have the word “predominant” added

- 36 To have the same states as in characteristic 48 of chrysanthemum (see paragraph 50 above)
- 40 To have states as yet to be indicated by New Zealand
- 41 To have “greening excluded”
- 44 To read: “Time of full flowering”

#### Status of Test Guidelines

55. The Working Party agreed that the draft Test Guidelines for Bouvardia should be sent to the Technical Committee for final adoption. It agreed that the draft Test Guidelines for Cymbidium, *Limonium* and Weeping Fig 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.

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

56. At the invitation of the expert from New Zealand, the Working Party agreed to hold its thirty-first session in Christchurch, New Zealand, from November 16 to 21, 1998. It was planned that the following items would be discussed during the forthcoming session:

- (a) Short reports on special developments in plant variety protection in ornamental plants and forest trees;
- (b) The use of image analysis in the DUS testing of ornamental plants;
- (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) Special cases in new species;
- (f) Harmonization of Test Guidelines
- (g) Final discussions on draft Test Guidelines for
  - Cymbidium
  - Weeping Fig
  - *Limonium*
- (h) New methods, techniques and equipment in the examination of varieties (an expert from the BMT to be invited to explain the new methods);

- (i) Central computerized database (Israel to prepare a working paper on possible future steps);
- (j) Discussion on working papers on Test Guidelines:
  - Chrysanthemum (Revision) (TG/26/4, TWO/30/8; the United Kingdom to prepare a new draft before March 1, 1998)
  - *Cupressus* (France to prepare a draft before April 1, 1998, in cooperation with New Zealand)
  - Geraltion Wax Flower (TWO/30/9)
  - Guzmania (TWO/29/9)
  - *Hippeastrum* (TWO/30/6)
  - Iris (TWO/29/3)
  - Kangaroo Paw (TWO/30/10)
  - Lavender and Lavendine (TWO/29/14; France to prepare a new draft before March 1, 1998)
  - *Nerium* (France to prepare a draft before November 1, 1997)
  - Ornamental Apple (Revision) (TG/14/5; United Kingdom to prepare a new draft before March 1, 1998)
  - Pentas (TWO/29/10)
  - Petunia (Israel to prepare a draft before April 1, 1998, in cooperation with Australia, Germany and New Zealand)
  - Rubber (TWO/30/3)
  - Tagetes (France to prepare a draft before April 1, 1998)
  - Thymus (France to prepare a draft before March 1, 1998)
  - *Zantedeschia* (TWO/30/2; South Africa to prepare a draft before April 1, 1998)
  - *Osteospermum* (TWO/30/5)
  - Poinsettia (Revision, TG/24/5; Denmark to prepare a new draft before April 1, 1998)

- Gerbera (Revision, TG/77/6; the Netherlands to prepare a new draft before September 1, 1998)
- *Eustoma* (Japan to prepare a draft before April 1, 1998).

57. In view of the long list of Test Guidelines planned, the Working Party agreed to request more advanced documents before their discussion in the session. It therefore selected for each of the species in the above planned list one leading expert and asked the other countries whether they have 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 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. The expert from South Africa offered to do that check if so required by the leading expert as long as not everyone would require her to do so. It would be aimed at sending the final document to the Office of UPOV at least two months before the next session. The Office of UPOV was asked to prepare a Circular inviting experts from States which had not participated in the session to express their interest and send comments and remarks to the leading expert.

58. A Subgroup on Image Analysis will meet at Antibes, France, at the end of 1998 after the results of the ongoing ring test on roses are available. The final date will be chosen by the Subgroup.

### Visits

59. In the morning of September 3, 1997, the Working Party visited the station of the Department of Ornamentals at Aarslev where it visited the trial fields and glasshouse trials and received information on the research work of the Research Group on Nursery Stock on different species, of the Research Group for Plant Breeding and Propagation, on the research on secondary metabolites and their use in the breeding of ornamentals and on the DUS tests on Poinsettia. The report on the research on the reduction of allergens in *Alstroemeria* to better protect the producer was of special interest to the group.

60. In the afternoon of September 4, 1997, the Working Party visited the D' hnfeldt establishment where it received information on the breeding of ornamentals. So far, only a few varieties were protected. As the business moved very fast, protection was very expensive. In addition, many varieties were hybrids and thus had a certain "inbuilt protection."

61. At the D' hnfeldt establishment, the Working Party also visited the Fleuroselect trials and received explanations on the different new entries in those trials.

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

[Six annexes follow]



ANNEX I

LIST OF PARTICIPANTS

I. MEMBER STATES

AUSTRALIA

Nik HULSE, Plant Variety Rights Office, Department of Primary Industries and Energy, P.O. GPO Box 858, Canberra, ACT 2601 (tel. +61-6-272 6476, fax +61-6-272 3650, e-mail: nik.hulse@dpi.gov.au, internet homepage: <http://www.dpie.gov.au/agfor/pbr/pbr.html>)

CANADA

Sandy MARSHALL (Ms.), Plant Breeders' Rights Office, Canadian Food Inspection Agency (CFIA), Camelot Court, 59 Camelot Drive, Nepean, Ontario, K1A 0Y9 (tel. +1-613-225 2342 ext. 4392, fax +1-613-228 6629, e-mail: smarshall@em.agr.ca (or vsisson@em.agr.ca))

CZECH REPUBLIC

Jiri SOUCEK, Head, Central Institute for Supervising and Testing in Agriculture (UKZUZ), Plant Variety Rights Department, Sedlec, 250 65 Libeznice (tel./fax +420-2-685 7681)

DENMARK

Jutta RASMUSSEN (Miss), Department of Variety Testing, Teglvaerksvej 10, 4230 Skaelskoer (tel.: +45-53-596 141, fax: +45-53-590 166)

Birthe HØEGH (Ms.), Department of Variety Testing, Teglvaerksvej 10, 4230 Skaelskoer (tel.: +45-53-596 141, fax: +45-53-590 166)

Lars H. JACOBSEN, Ministry of Agriculture, Danish Institute of Plant and Soil Science, Department of Ornamentals, Kirstinebjergvej 10, 5792 Arslev (tel. +45-65-99 1766, fax +45-65-99 25 66, e-mail: lhj@afp.sp.dk)

FRANCE

Richard BRAND, GEVES, B.P. 1, Les Vignères, 84300 Cavaillon (tel. +33-4-90 78 66 60, fax +33-4-90 78 01 61)



GERMANY

Ulrike LÖSCHER (Mrs.), Bundessortenamt, Postfach 61 04 40, 30604 Hannover  
(tel. +49-511-95 66 725, fax +49-511-95 66 719)

Andrea MENNE (Ms.), Bundessortenamt, Postfach 61 04 40, 30604 Hannover  
(tel. +49-511-95 66 723, fax +49-511-95 66 719)

ISRAEL

Baruch BAR-TEL, Plant Breeders' Rights Council, Agricultural Research Organization, The  
Volcani Centre, P.O.B. 6, Bet Dagan 50 250 (tel./fax +972-3-968 3458 669)

JAPAN

Koji KANAZAWA, National Center of Seeds and Seedlings, Ministry of Agriculture,  
Forestry and Fisheries, 2-2 Fujimoto, Tsukuba, Ibaraki 305 (tel. +81-298-38 6584,  
fax +81-298-38 6583, e-mail: kanazawa@mcss.go.jp)

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

NETHERLANDS

Joost BARENDRECHT, CPRO-DLO, P.O. Box 16, 6700 AA Wageningen  
(tel. +31-317-4768 93, fax: +31-317-418 094, e-mail: C.J.Barendrecht@crpo.agro.nl)

Jan Wouter VAN ECK, CPRO-DLO, Droevendaalsesteeg 1, PO Box 16,  
6700 AA Wageningen (tel. +31-317-47 6842, fax +31-317-418 094, e-mail:  
j.w.vaneck@cpro.dlo.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: barnaby@pvr.govt.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, e-mail: elise@itsc.agric.za)

UNITED KINGDOM

Elizabeth SCOTT (Miss), Ornamental Plants Section, NIAB, Huntingdon Road, Cambridge CB3 0LF (tel. +44-1223-342 399, fax +44-1223-342 229, e-mail: e.scott@maff.gov.uk)

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: +40-1-1590 66, fax: 40-1-312 38 19)

III. OBSERVER ORGANIZATION

EUROPEAN UNION

Antonius KWAKKENBOS, Community Plant Variety Office, B.P. 2141, F-49021 Angers, France (tel. +33-241 36 84 50, fax +33-241 36 84 60)

IV. EXPERT

Marcel J. BARTELS, ASSINSEL, Parallel Boulevard 214<sup>d</sup>, 2202 HT Noordwijk, Netherlands (tel. +31-71 364 9101, fax: +31-71 364 9102)

IV. OFFICER

Joost BARENDRECHT, Chairman

V. OFFICE OF UPOV

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

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