E

TWA/31/15
ORIGINAL: English
DATE: May 27, 2003

UPOV

# INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

# TECHNICAL WORKING PARTY FOR AGRICULTURAL CROPS

## Thirty-First Session
## Rio de Janeiro, Brazil, September 23 to 27, 2002

REPORT

*adopted by the Technical Working Party for Agricultural Crops*

Opening of the Session

*1. The Technical Working Party for Agricultural Crops (hereinafter referred to as "the TWA") held its thirty-first session in Rio de Janeiro, Brazil, from September 23 to 27, 2002. The list of participants is reproduced in Annex I to this report.

*2. The session was opened by Mrs. Françoise Blouet (France), Chairperson of the TWA, who welcomed the participants, and in particular new participants, to the TWA.

Adoption of the Agenda

*3. The TWA adopted the agenda as reproduced in document TWA/31/1 Rev.

*The asterisked paragraphs in this report are reproduced from document TWA/31/14 (Report on the Conclusions).

Short Reports on Developments in Plant Variety Protection

(a) Reports from members and observers

*4. The TWA received short reports on plant variety protection from a number of countries. The expert from the Russian Federation informed the TWA that it now offered protection to all plant genera and species. The expert from Hungary informed the meeting that Hungary planned to accede to the 1991 Act of the UPOV Convention. The expert from Romania reported that Romania had now started to contribute data to the UPOV-ROM. The representative from the Community Plant Variety Office (CPVO) reported that it had issued its 10,000th title of protection.

5. The TWA received a detailed report on the situation of plant breeders' rights in Brazil. A copy of the presentation is reproduced in Annex III to this document.

*6. The expert from Canada informed the meeting that a report on the impact of plant variety protection had been made to the Canadian Parliament, as part of the ten-year review of its plant variety protection legislation. This report is available on the Canadian Website (see Annex I). It showed an increase in the number of plant varieties since the introduction of the legislation and that there had also been an increase in productivity which, at least in part, was due to the introduction of the legislation.

7. The expert from Mexico informed the meeting that the offices of the National Service for Seed Inspection and Certification (SNICS) had moved to a new location. He reported that Mexico had hosted the Technical Working Party on Automation and Computer Programs (TWC) and a Training Course on Data Handling in 2002. It was explained that, at that moment, there were 362 applications for plant breeders' rights for agricultural crops, 134 for ornamentals, 87 for forage crops and 33 for vegetable crops.

(b) Report on developments within UPOV

8. The Office of the Union made an oral report on the latest developments on plant variety protection at the Council, the Administrative and Legal Committee (hereinafter referred to as "the CAJ") and the Technical Committee (hereinafter referred to as "the TC").

Molecular Techniques

(a) Report on developments

*9. The TWA received an oral report from the Office of the Union on the latest developments concerning biochemical and molecular techniques within UPOV, based on document TC/38/14 Add.-CAJ/45/5 Add.

10. The TWA noted that the Working Group on Biochemical and Molecular Techniques, and DNA-Profiling in Particular (BMT) had held its seventh session in Hanover, Germany, from November 21 to 23, 2001, under the Chairmanship of Mr. Michael Camlin (United Kingdom). It was reported that much of the meeting had focussed on the reports from the Crop Subgroups, which had been initiated at the previous BMT session and managed through the relevant Technical Working Parties (TWPs). The future role of the BMT was also discussed. The TWA noted that the BMT had considered it important for the *Ad hoc* Subgroup of Technical and Legal

Experts on Biochemical and Molecular Techniques (hereinafter referred to as "the BMT Review Group") to consider models for the use of biochemical and molecular techniques in DUS testing, and make recommendations on the acceptability of the following models, before further consideration of the technical aspects:

Option 1: Molecular characteristics as a predictor of traditional characteristics (Proposal 1):

(a) use of molecular characteristics which are directly linked to traditional characteristics (gene specific markers);

(b) use of a set of molecular characteristics which can be used reliably to estimate traditional characteristics; e.g. quantitative trait loci.

Option 2: Calibration of threshold levels for molecular characteristics against the minimum distance in traditional characteristics (Proposals 2 to 4).

Option 3: Development of a new system (Proposals 5 and 6).

11. It was reported to the TWA that the following recommendations were made by the BMT Review Group:

Option 1(a) (Proposal 1): For a gene specific marker of a phenotypic characteristic. This proposal was, on the basis of the assumptions in the proposal, acceptable within the terms of the UPOV Convention and would not undermine the effectiveness of protection offered under the UPOV system;

Option 2 (Proposals 2, 3 and 4): Calibration of threshold levels for molecular characteristics against the minimum distance in traditional characteristics for Maize, Oilseed Rape and Rose, respectively, where used for the management of reference collections, were, on the basis of the assumptions in the proposals, acceptable within the terms of the UPOV Convention and would not undermine the effectiveness of protection offered under the UPOV system; and

Option 3 (Proposals 5 (Rose) and 6 (Wheat): It noted there was no consensus on the acceptability of these proposals within the terms of the UPOV Convention and no consensus on whether they would undermine the effectiveness of protection offered under the UPOV system. Concerns were raised that, in those proposals, using that approach, it might be possible to use a limitless number of markers to find differences between varieties. The concern was also raised that differences would be found at the genetic level which were not reflected in morphological characteristics.

The TC had agreed with the conclusions that proposals 1, 2, 3 and 4 could be pursued on the basis of the assumptions, whilst recognizing the need for further work to examine these assumptions and, in the case of option 2, to improve the relationship between morphological and molecular distances. The TC had noted the divergence of views expressed regarding proposals 5 and 6. The CAJ agreed with the conclusions of the BMT Review Group and endorsed the opinion of the TC.

*12. The experts from France and the United Kingdom made presentations on the above-mentioned three options for the possible use of molecular techniques in DUS testing, as

they had been presented to the BMT Review Group during its meeting in April 2002. The expert from France confirmed that the GAÏA software, used in the French proposal for Option 2, would be made available for testing by members of the Union by the end of the year and should be ready for delivery by April 2003. The TWA noted the conclusions of the BMT Review Group, regarding these proposals, and the views of the TC and CAJ on these conclusions. It also noted the future role of the BMT as agreed by the TC.

13. In relation to Option 2, the Technical Director clarified that this option, subject to good calibration, was considered acceptable by the TC. Experts from New Zealand and the Community Plant Variety Office (CPVO) asked about the procedure for determining the level of "distinctness plus" mentioned in the presentation and about the role that molecular markers played in the option. An expert from France explained that the choice of the "distinctness plus" threshold for morphological characteristics was based on experience and that the choice of the threshold based on Roger's distance was more empirical and intended for discussion. She added that, for oilseed rape, the experience in her country using those values showed that it was very unlikely for a non-distinct variety to have been left out of the DUS field trials. She clarified that the system was set up in such a way that the assessment of distinctness by differences in molecular markers alone was not possible. The expert from Denmark asked about the assessment of uniformity. The French expert clarified that uniformity was assessed using morphological characteristics. Another expert from France added that they were using the concept of distance between varieties. In the case of a variety with a low level of uniformity, the calculated distance would be small, distinctness plus would not be achieved and therefore the variety should be included in the field trials. The expert from Israel considered that the level of uniformity for molecular markers could not be the same as for morphological characteristics, in particular because of the environmental influence on morphological characteristics. He considered that a good calibration was very important for that. An expert from the United Kingdom considered that uniformity was necessary to establish the description. The expert from Germany supported the expert from the United Kingdom. She considered that it would not be a problem to have different uniformity thresholds for morphological characteristics and for molecular markers. She added that it was necessary to obtain a stable description for molecular markers as well. The expert from CPVO supported the opinion of the German expert.

14. In relation to Option 3, experts from France asked about the criteria used to choose the eight markers used in the proposal presented on wheat. The expert from the United Kingdom explained that their markers had been selected following careful and detailed evaluation of their use for both distinctness, between varieties, and uniformity, within varieties. With this number of markers, they were able to achieve almost 100% discrimination between the 40 varieties studied, and furthermore they could handle the amount of uniformity data produced. In reply to a question from a German expert, he clarified that, under this option, the varieties should be sufficiently uniform in molecular markers, with an agreed standard, in the same way as for traditional characteristics. He added that it was a characteristic-by characteristic approach, in contrast to the distance approach in Option 2. The expert from Israel wondered whether it would lead to breeders claiming distinctness based on a gene without considering its expression and he also wondered whether that was the aim of UPOV. Experts from France and New Zealand considered that the use of this molecular markers technique should be combined with field trials. An expert from Denmark wondered about the consequence of the inclusion of more molecular markers in order to achieve a positive result on distinctness. The expert from the United Kingdom considered that it would be difficult to reject the inclusion of more molecular markers if they had good discrimination power but he added that the development and evaluation of suitable molecular markers was a lengthy and expensive procedure. He suggested that any additional markers would need to have undergone the same rigorous evaluation of both

their discriminatory power and uniformity, as the eight discussed, and to have been evaluated in different laboratories. He added that they were working on the relationship between the molecular distance and the morphological distance, to develop Option 2, and on the use of molecular markers for identification purposes. He also explained that eight molecular markers might not be enough in the context of Option 2 and it would be possible to combine them with other markers.

(b) *Ad hoc* Crop Subgroups

*15. The TWA noted the proposals, developed by the TC, regarding the program for the existing maize, oilseed rape and wheat crop subgroups and for the establishment of new crop subgroups for potato, soybean and sugarcane.

*16. The TWA noted that the soybean and sugarcane crop subgroups would be meeting immediately after the TWA session, but that the meeting of the potato crop subgroup had been postponed because of the absence of papers to be discussed. The TWA proposed that the oilseed rape, potato and wheat crop subgroups should meet consecutively, at the same venue, in May or June 2003, by which time papers should, in particular, be available from the United Kingdom for oilseed rape and wheat and from France for potato. It agreed that the maize crop subgroup should not meet at this time.

*17. The TWA noted that the interim chairpersons of the new crop subgroups agreed between the Chairman of the TC and the Chairperson of the TWA were as follows:

| | |
|---|---|
| Potato | Mrs. Beate Rücker (Germany) |
| Soybean | Marcelo Labarta (Argentina) |
| Sugarcane | Luis Salaices (Spain). |

*18. The TWA supported the proposals for the chairpersons of the new crop subgroups.

Plant Variety Description and Environmental Effects

*19. The expert from Germany introduced document TWA/31/9.

*20. The TWA agreed that this document demonstrated the need for greater care when selecting and describing grouping characteristics in the Test Guidelines, in order to reduce observer error. In addition, it noted that consideration needed to be given to the conversion of recorded data into variety descriptions. It was agreed that the results of this study should be presented to the TC and CAJ to demonstrate the difficulties in harmonizing variety descriptions.

*21. The expert from the United Kingdom introduced document TWA/31/7.

22. The expert from Israel considered that having an even distribution was not necessary for a grouping characteristic and that a clear division of groups was more important. The Technical Director noted that the General Introduction did not request any special type of distribution for grouping characteristics. The expert from the United Kingdom explained that he had mentioned it as a “desirable” characteristic and not as a requirement. The expert from the United Kingdom also pointed out that the words that he had used, relating to distribution, were taken from the text of existing UPOV Test Guidelines and were also included in CPVO protocols. Experts from France and Spain noted that they had considered the possibility of including gliadin composition

in the Test Guidelines for wheat, but the TWA had decided against this because of the problems in obtaining agreement between laboratories. The experts from France and Spain highlighted the need to define the method very precisely, but supported the idea of combining data expressed by the author. The expert from France added that it would be useful to compare differences in the "phenotypic distance" measurements between varieties obtained from different countries. An expert from Denmark reported that in his country they had tried to do a similar test in barley and found that it was possible to declare a variety different from itself. The expert from Israel noted that grouping characteristics were not meant for description but for reducing the number of varieties to be included in the growing trial. The expert from the United Kingdom pointed out that grouping characteristics were nevertheless part of the variety description. Experts from France and the United Kingdom considered that plant varieties were living material and interacted with the environment which, together with the effect of the examiner, resulted in different descriptions for the same variety. They considered that this aspect should be recognized by the TC. An expert from Denmark supported this proposal because it would help the TC to assess the extent to which the publication of variety descriptions could be useful. The expert from the United Kingdom suggested that the use of biochemical and/or molecular characteristics would avoid this problem, because they are not affected by the environment.

Project to Consider the Publication of Variety Descriptions

23. The Technical Director introduced document TC/38/10 Add.

24. The Chairperson highlighted the discussions concerning the previous agenda item and, in particular, that it would not be possible for most agricultural crops to obtain the same description from a particular variety throughout the world. An expert from Denmark proposed also to discuss the validation of data before it was included in the database. An expert from France considered that, in principle, descriptions of protected varieties should be published but this brought up the issue of how to publish them and how to deal with different descriptions of the same variety. He proposed to include information on the conditions where the description was recorded. Experts from Israel and New Zealand considered that having different descriptions of the same variety was not a problem. The expert from Israel thought that limitations on the use and background information on the description should be included.

*25. It was agreed that, for agricultural crops, it would not be possible to harmonize variety descriptions to the extent that it would be possible to obtain a single variety description. Thus, the project on such crops could only proceed on the basis that different descriptions for the same variety could be accommodated. It was noted that, as discussed in relation to documents TWA/31/7 and TWA/31/9, more care would need to be given to the selection and description of grouping characteristics. Furthermore, it was suggested that consideration should be given to the possible use of "phenotypic distance" measurements in the project.

*26. The TWA proposed the following short list of species for consideration by the TC:

(a) Barley

It was noted that a substantial amount of work on the comparison of barley variety descriptions had already been undertaken by an expert from Denmark and had been reported to the TWA at its previous session. Furthermore, it noted that a ring-test for the development of variety descriptions was underway within Europe and that the

results of this study, which would be available in July 2003, could be considered in the UPOV project.

(b) Potato

(c) Soybean.

*27. It was noted that the Test Guidelines for Barley and Soybean and the draft of the revised Test Guidelines for Potato all contained electrophoretic characteristics, which might be considered in the project.

*28. The TWA agreed that the coordinators for these species should be Denmark for Barley, the Netherlands and CPVO jointly for Potato, and France for Soybean. The following countries/organization expressed their wish to contribute to the study:

Barley: AR, CA, CL, CZ, DE, DK, EE, ES, FI, FR, GB, HU, NL, NZ, RO, SE

Potato: CA, CL, CZ, DE, EE, GB, IL, NL, NZ, CPVO

Soybean: AR, BR, CA, FR, HU.

29. Some experts were unable to make a commitment at the meeting and proposed to advise the Office of the Union by the end of October 2002 if they wished to participate.

*30. It was agreed that it would be useful for a list of varieties to be provided by each contributing country in order to assess the degree of overlap. The Office of the Union was requested to issue a questionnaire seeking this information, the results of which could then be presented to the *Ad hoc* Working Group on the Publication of Variety Descriptions and the TC, to help in its decision on how to proceed.

Project for Exchanging Seed of Selected Varieties Between Interested Countries

*31. An expert from Sweden introduced document TWA/31/2.

32. An expert from Japan reported that only six countries had provided seed for the project on rice. The expert from South Africa reported on lupin trials made with seed sent from Germany and Poland. She had found it very interesting to see the different features of materials coming from different regions. The expert from Sweden clarified that the original idea had been to see to what extent a variety could be moved from the country where it was bred, whilst still retaining the same state of expression for the grouping characteristics. Some experts considered that it would be useful to exchange seed when developing the Test Guidelines for a given crop. Experts from France, New Zealand and the United Kingdom noted the usefulness of the exchange of seed of selected varieties during the development or the revision of Test Guidelines. An expert from France added that it might help the development of regional sets of example varieties. The Chairperson suggested focusing on grouping characteristics.

*33. After discussion, it was agreed that this project should be aimed at improving the development of suitable grouping and asterisked characteristics in the Test Guidelines and, as such, should become a part of the process of revising or developing Test Guidelines described in document TGP/7 “Development of Test Guidelines.” It should also seek to identify the extent to which the example varieties would be appropriate within, or beyond, a region.

*34. It was agreed that the project should continue on lupin, rice and white clover and that a report on progress would be made at the next TWA session.

UPOV Databases

*35. The TWA received an oral report from the Office of the Union on the latest developments in the UPOV databases.

36. It noted that, in order to construct a single database of information based on species/taxonomic groups, which would be used to generate different reports, it would be necessary to use a "unique identifier" which would be, at least for the time being, the code developed in document TC/35/16 "Revised Working Paper for a UPOV Taxon Code for Use in the UPOV-ROM Plant Variety Database." It also noted that a copy of the consolidated database of taxa would be presented to the TC in April 2003.

TGP Documents

*TGP/3.2 Draft 1 "Developments and Explanations Regarding Varieties of Common Knowledge"*

*37. The document was introduced by an expert from Germany.

38. The TWA noted the discussions which had taken place in the CAJ concerning the interpretation of a variety whose "existence" was a matter of common knowledge. In particular, it noted that the interpretation in the draft of the General Introduction, that "living plant material must be in existence for a variety to be taken into account for distinctness," had not been acceptable and had been deleted from the adopted version.

39. The expert from New Zealand said that he found it difficult to reject an application on the basis that he suspected that the candidate variety was not different from another variety for which he was not able to obtain plant material for the examination. This position was supported by an expert from the CPVO who explained that, in his office, there was concern about this situation, especially in the ornamental sector, and that for the time being his office was reluctant to reject an application when plant material of a variety of common knowledge was not accessible for the examination. He further noted that it was possible to declare the plant breeders' rights null if it had been wrongly granted. An expert from France considered that the way to solve the problem was to speak of the practical notion of 'collections of varieties' instead of the theoretical notion of 'varieties of common knowledge', knowing that these collections of varieties would never include every variety of common knowledge in the world. He added that that issue was the subject of TGP/4. An expert from the United Kingdom clarified that it was a legal problem which could not be solved by technical means. This was supported by an expert from France, who added that the technical experts could only give a technical report. Experts from Spain considered that it was not always possible to obtain plant material of varieties of common knowledge, even when it was known that they existed, and they considered it necessary to agree on what to do when plant material was not available, in order to provide similar decisions for similar situations arising in other countries. An expert from France clarified that paragraph 4.7 of document TGP/3.2 Draft 1 clearly indicated that varieties of common knowledge included those for which plant material was not available.

40. Taking into account the discussions, the expert from Germany proposed to delete Section 4 of document TGP/3.2 Draft 1 and to make a brief reference in Section 3.

41. Conclusion: In recognition of the difficulty in clarifying this matter, it was agreed that section 4 of the document TGP/3.2 Draft 1 "Aspects Concerning the Existence of Living Plant Material" should be deleted. It was also agreed that section 3.1.2 should be deleted and that section 3.2.5 should be modified to refer to comparisons in a growing trial.

*42. The TWA agreed that the way forward on the problem of obtaining material of varieties of common knowledge was for the technical experts to clarify the practical basis on which variety collections were established and highlight the differences between these collections and the potential collection of all varieties of common knowledge. This would then allow the Testing Authorities to evaluate the risks of possible wrong decisions on distinctness and decide, if this risk was unacceptable, what supplementary procedures it should take to address the problem. It noted that the General Introduction made reference to such supplementary procedures in section 5.3.1.2. Furthermore, it noted that the issues concerning the development of variety collections would be handled in document TGP/4.1 "General Guidance for the Management of Variety Collections." It proposed that a reference to this document should be made in document TGP/3.1 and the difference between all varieties of common knowledge and variety collections highlighted.

*TGP/4.1 Draft 2 General Guidance for the Management of Variety Collections*

*43. The document was introduced by the expert from France.

44. An expert from Spain considered that the document was very useful and thanked the French expert for its preparation. He added that the origin of the standard samples used in the variety collections was very important because working with the wrong sample would lead to serious problems. In his opinion, testing authorities should be the main source of the samples. This opinion was supported by the expert from CPVO especially for the case of seed-propagated species. Nevertheless, the expert from the CPVO noted that for some vegetatively propagated varieties there were no variety collections and breeders were requested to provide plant material every year. He added that, in his office, they experienced some problems with plant material obtained from the market. In response to a request from the Chairperson for information on the breeder testing system, the expert from Canada explained that, in her country, the examiners checked the breeder's field trials and that seed samples were stored in a gene bank. For vegetatively propagated species, she explained that the breeder was responsible for maintaining the samples for protected varieties. The expert from New Zealand also explained that, in his country, there was no national list and, therefore, they had to obtain samples from the market. Experts from Israel and the United Kingdom noted that the coverage of vegetatively propagated crops was missing in the documents. The expert from France agreed with the comment made by the Spanish expert with regard to the origin of the samples, but he clarified that in the case of samples from inbred lines, the breeders provided the samples subject to some restrictions, which did not allow the testing authority to distribute seed samples. He also recalled that, in some countries, the marketing of a hybrid rendered its parental lines a matter of common knowledge. The Technical Director noted that the inclusion of a parent line in a collection of varieties held by a testing authority for the examination of DUS did not, in itself, make this parent line a matter of common knowledge, since such a collection was not "publicly accessible" (Section 5.2.2.1(c) of the General Introduction). However, he also noted that parent lines would, in some members of the Union, lose their novelty by commercialization of the hybrid.

*45. The TWA proposed the following changes to the document:

Paragraph 9: In the last sub-paragraph of paragraph 9(a) and in 9(b)(i), rather than to supra-national organizations, it should refer to certain territories or countries, where the variety collection might be limited, by taking into account some physiological traits of the variety.

Paragraph 9(b): The heading should refer to other territories, rather than countries.

Paragraph 13(c)(i): Indicate that, wherever possible, the representative seed sample should be obtained from the Testing Authority to which the initial application was made. In addition, a separate section on the difficulties of maintaining a collection of vegetatively propagated varieties (e.g. cost, virus infection and risk of mutation) should be added, indicating that this would make it impractical for Testing Authorities to establish such collections.

Paragraph 13(iv): " … can only be based ... " should be replaced by " … may be possible … " and

Paragraph 13(v): a reference should be made to document TGP/9.5 "Use of the Parental Formula for Examining Distinctness in Hybrids."

Paragraph 14: to read " … and also, *in most cases*, unnecessary … ".

*46. It was agreed that a separate section should be included on the benefits of cooperation between testing authorities, for improving the efficiency of managing variety collections.

*47. The TWA also noted that the CAJ was considering certain issues concerning the use of material submitted for DUS examination, including the ability of testing authorities to exchange parent lines submitted for DUS examination of hybrid varieties.

*48. The TWA noted that the comments made by the TWC had already been addressed in document TGP/4.1 draft 2 and that the comments made by the TWV would be addressed with the changes proposed above.

*TGP/6.1.2 Draft 1 "Examples of Arrangements for DUS Testing"*

*49. The TWA considered that this document provided a useful explanation of the different arrangements for DUS testing in the countries concerned. It agreed that further elaboration of certain aspects would be helpful. The expert from New Zealand proposed to prepare an example of the system used in his country. The TWA proposed that the document should be presented as illustrative examples of systems and not primarily as the system of a particular country.

*TGP/7.1 Draft 1 "Guidance for Drafters of Test Guidelines"*

50. The Technical Director introduced the document. He highlighted the purpose of two sections, the one containing additional standard wording (ASW) and the other containing guidance notes for TG drafters (GN). The TWA proposed the following changes to the document:

ASW 3(d)

*51. To read "A: spaced plants"

ASW 5(e)

52. Several experts noted that the value of the recommended acceptance probability was already included in TGP/10.3.1 and wondered whether it was necessary to repeat this value in the ASW (e). The TWA agreed that the expert from Germany would draft appropriate wording after consultation with the Chairman of the TWC.

ASW 9

53. Experts from France, Germany and Spain considered that it should be clarified that in the case of an application for a hybrid variety, the Technical Questionnaire should also be completed with information concerning its parental lines. It was proposed that, where appropriate, additional standard wording should be provided for the title box of the Technical Questionnaire, to read: "Technical Questionnaire to be completed in connection with an application for plant breeders' rights and for the parent lines of hybrid varieties which are the subject of an application for plant breeders' rights."

ASW 10

*54. The TWA noted the objections of the International Seed Federation (ISF) to the requirement for a photograph to accompany the Technical Questionnaire. The TWA also proposed that the sentence should be reworded as follows: "A representative color photograph of the relevant characteristics of the variety should accompany the Technical Questionnaire."

GN 6

*55. The TWA considered that it would be practically impossible to create a detailed formula and proposed that Option 2 should be presented first, to indicate that this would be the most suitable approach. Regarding Option 1(b), it proposed to replace the word "should" with "may." In Option 2(b), it proposed that the word "proportion" should be replaced by "quantity."

GN 10

56. Some experts considered that the examples provided an idealistic and theoretical situation. An expert from France considered that, in those cases where the expression of a characteristic could be described by drawings, or when there was a strong influence by the environment, it was not necessary to have example varieties. He added that, even though that it was clear that the main objective of example varieties was to develop harmonized descriptions, the growing membership of UPOV rendered example varieties less useful and it should be accepted that it might be possible to have different descriptions obtained in different places for the same variety. He concluded that paragraph (d) of GN 10 highlighted this situation. Experts from Israel and Sweden considered that the information provided in GN 10 was good but it would also be useful for new members to understand the function of example varieties. The Chairperson suggested that it was important to be more realistic about what could be achieved with example varieties.

*57. The TWA proposed that this section should be redrafted to emphasize that there were relatively few characteristics where harmonized variety descriptions could be developed. It also proposed that the examples in (a) should be more realistic to reflect the interaction of characteristics with the environment.

*58. Regarding the presentation of multiple sets of example varieties the TWA proposed that the example varieties should be presented in an Annex to the Test Guidelines. Following a proposal made by the expert from the Netherlands, the TWA agreed that these could be presented in a tabulated format as follows:

| | Country A | | | | | |
|---|---|---|---|---|---|---|
| Example varieties | Ch. 1 | Ch. 2 | Ch. 3 | Ch. 4 | Ch. 5 | Ch. 6 |
| Variety A | 3 | 1 | 3 | | 3 | 7 |
| Variety B | 5 | 2 | 7 | 1 | 1 | 5 |
| Variety C | 7 | 3 | 5 | 9 | 2 | |
| Variety D | | 4 | | | 4 | 3 |

| | Country B | | | | | |
|---|---|---|---|---|---|---|
| Example varieties | Ch. 1 | Ch. 2 | Ch. 3 | Ch. 4 | Ch. 5 | Ch. 6 |
| Variety I | 3 | 4 | 5 | | 1 | 3 |
| Variety II | 5 | 2 | 3 | 1 | 2 | 5 |
| Variety III | 7 | 1 | 7 | 9 | 3 | |
| Variety IV | | 3 | | | 4 | 7 |

*59. It was agreed that a column for example varieties should be retained in the Table of Characteristics, but this would be left blank for each Testing Authority to complete as appropriate. This blank column would be of a reduced width to reduce the size of the Test Guidelines as far as possible.

GN 14

60. The expert from Israel noted that, at the Technical Working Party for Fruit Crops (TWF), Test Guidelines were developed with around 100 characteristics whilst at the TWA this number could be around 30 to 40. He thought that this showed that there was no problem with handling tables with a large number of characteristics. An expert from the United Kingdom noted that two options were possible: one was to work with an agreed table and to leave each country to include additional characteristics in its national test guidelines; the other was to include all the characteristics used by the different countries. He considered that the first one should be the one to follow. An expert from France explained that, on the one hand, he saw no reason to reject a characteristic that fulfilled the requirements of GN 11, but, on the other hand, he recognized that it might be difficult to come to a full agreement in the list of characteristics to be included in

Test Guidelines. An expert from Spain proposed to include only those characteristics that proved useful in a given minimum number of countries and to put characteristics used by one or very few countries in an annex or on the UPOV Website. The expert from CPVO supported the idea of providing information on the countries where the different characteristics were used. Experts from Germany and New Zealand expressed concern about having an extra list of characteristics. An expert from the United Kingdom noted that a long list of characteristics incorporated in full into national test guidelines might create a burden for the testing authority. The Technical Director noted that the General Introduction in Section 4.8 "Functional Categorization of Characteristics" had already set out the criteria for the inclusion of characteristics in the UPOV Test Guidelines. The Chairperson said that, from the technical discussions which had recently taken place between experts working on specific test guidelines, she did not feel any major difficulty with the length of the table of characteristics, which mainly depended upon the crop.

*61. Conclusion: The TWA noted that it was important for all the criteria set out in GN 11 to be checked before including a characteristic in the Test Guidelines. It noted that, at present, there were no problems with the size of the Table of Characteristics in the Test Guidelines developed by the TWA and proposed that it would be more appropriate to consider any schemes for indicating the extent of use of a characteristic if this became a real issue.

GN 21

*62. It was proposed that the title of part (b) should be deleted and the text should refer to the recognition of independent characteristics.

GN 22 and 23

*63. The TWA noted that these sections would be superceded by document TGP/7.3 "Standardized UPOV Terms and Explanations." However, with regard to GN 23, it noted the value of retaining the "1-5" scale for quantitative characteristics.

GN 24

*64. It was proposed that the text following (b) should read "unless it is considered unrealistic to expect breeders to describe these characteristics."

*TGP/7.2 Draft 1 "TG Template"*

65. The Technical Director introduced the document. Comments focused on specific points of the TG Template where the standard wording would not be suitable for some crops. The TWA proposed the following changes to the document:

Section 3.5 "Number of Plants / Parts of Plants to be Examined":

*66. The existing standard wording should be omitted and introduced as additional standard wording using the following revised wording:

"Unless otherwise indicated, all observations on single plants should be made on {xx} plants or {xx} parts taken from each of {xx} plants."

Section 6.5 "Legend":

*67. The legend indicating QL, QN and PQ to be omitted and introduced as additional standard wording.

Section 10.1 “Subject of the Technical Questionnaire”:

*68. In the case of Test Guidelines covering more than one species, the template should provide for applicants to indicate to which species the application applied.

Section 10.6 “Similar varieties and differences from these varieties”

*69. The examples given should be omitted and suitable examples could be provided for individual Test Guidelines.

*TGP/7.4 Draft 1 “Procedures for the Introduction and Revision of Test Guidelines”*

*70. The TWA did not have time to consider this document and experts were invited to send written comments to the Office of the Union. It also agreed that the next draft should incorporate a step for the exchange of seed of varieties in order to develop good grouping and asterisked characteristics.

*TGP/9.1.1 Draft 1”General Procedures for Determining Distinctness: Official Testing”*

*71. The document was introduced by experts from France and the Netherlands.

72. The expert from Germany asked whether the table included in page 3 was really necessary and if it was, she considered that further explanations should be added. The Chairperson also wondered whether that table should be included in the document. She added that the issues covered by the table were developed in other TGP documents. The expert from the Netherlands clarified that the document was supposed to cover different crops and different approaches to the assessment of distinctness and that it was very difficult to include all these aspects in one document. The expert from France added that the aim of the document was to describe the process of assessing distinctness and not to explain how to take decisions. Several experts considered that the document would be useful for new members. The expert from Germany considered that the document dealt with official testing only and it was worthwhile developing the document to include examples of other approaches. She proposed moving this part to TGP/6, where the assessment of uniformity could also be included. The Chairperson explained that the breeder testing system was described in TGP/9.1.2.1.

73. Conclusion: After the above discussions, it was agreed that it would be very difficult to develop a generalized approach to the examination of distinctness. It was, therefore, agreed that different examples of approaches to the examination of distinctness should be provided in the same way as adopted for document TGP/6.1.2 “Examples of Arrangements for DUS Testing” and the merging of these two documents should be considered. It was also agreed that the title of the document should be changed accordingly.

*TGP/9.1.2.1 Draft 1 “General Procedures for Determining Distinctness: Breeder Testing (Australia)”*

*74. The TWA agreed that this document presented a clear explanation of the Australian system of breeder testing. It noted that this document addressed the overall examination of DUS

and not just distinctness and should, therefore, be incorporated in document TGP/6.1.2 "Examples of Arrangements for DUS Testing."

*TGP/9.1.2.2 Draft 1 "General Procedures for Determining Distinctness: With the Participation of Breeders (France)"*

*75. It was proposed that this document should be covered within a new draft of document TGP/6.1.2 "Examples of Arrangements for DUS Testing," explaining the French arrangements for DUS testing.

*TGP/9.1.3 Draft 1"General Procedures for Determining Distinctness: General"*

*76. It was noted that this document was very similar to document TGP/9.1.1 and would be covered by the proposals concerning that document and its merging with document TGP/6.1.2 "Examples of Arrangements for DUS Testing."

*TGP/9.3.1 Draft 1 "Consideration of All Varieties of Common Knowledge in the Examination of Distinctness"*

*77. The TWA noted that issues raised in this document were addressed more to document TGP/3.2 "Developments and Explanations Regarding Varieties of Common Knowledge." It noted the difficulties there had been in discussions on document TGP/3.2 when trying to elaborate the term "varieties whose existence is a matter of common knowledge," beyond that agreed in Section 5.2 of the General Introduction. It proposed that the CAJ should be invited to comment on whether it would be appropriate to try to elaborate this matter further. If the CAJ considered this to be appropriate, the TWA proposed that the drafters of document TGP/3.2 draft 1 and document TGP/9.3.1 draft 1, should collaborate to produce a new draft of document TGP/3.2, taking into account the comments made on their respective documents.

*TGP/10.2 Draft 1 "Assessing Uniformity According to the Features of Propagation"*

78. The expert from Germany introduced the document. She explained that the TWC had agreed that the statistical documents should refer to the type of variation rather than to the features of propagation. Experts from France and New Zealand asked for some clarifications on paragraph 4 (b), especially on the last sentence. The expert from Germany explained that, on one side, there was the fixed population standard and, on the other side, the relative uniformity standard. She added that a document on relative tolerances for uniformity assessment on cross-pollinated species would be prepared for the next session of the TWC as part of TGP/10 "Examining Uniformity". Finally she agreed to seek to explain the issue in a clearer way. The expert from France suggested that some examples be included.

*79. It was agreed that paragraph 4(b) of TGP/10.2 Draft 1 would be elaborated, perhaps with examples, to clarify the proposed approach, it was proposed that the document should avoid the use of the term "type."

*80. The TWA did not have time to consider the following documents at its thirty-first session and requested that written comments be sent to the Office by the end of November 2002.

| | |
|---|---|
| TGP/9.3.2 Draft | Consideration of All Varieties of Common Knowledge in the Examination of Distinctness: The Use of 'Phenotypic Distance' for Examining Distinctness (see paragraph 8 concerning GAÏA software) |
| TGP/9.4.1 Draft 1 | Examining Distinctness in Different Types of Variety: General |
| TGP/9.5 Draft 1 | Use of the Parental Formula for Examining Distinctness in Hybrids |
| TGP/8.6 Draft 1 | Examining DUS in Bulk Samples |
| TGP/8.4 Draft 1 | Types of Characteristics and Their Scale Levels |
| TGP/12.1.1 Draft 1 | Characteristics Expressed in Response to External Factors: Disease Resistance. |
| TGP/12.1.2. Draft 1 | Characteristics Expressed in Response to External Factors: Chemical Response (Australia) |
| TGP/12.1.3 Draft 1 | Characteristics Expressed in Response to Living Organisms: Insect Resistance (France). |

Discussions on Draft Test Guidelines (Subgroups)

*Rice (TG/16/8(proj.1) and documents TWA/31/8 and TWA/31/8 Add.)*

*81. The TWA agreed the following changes to document TG/16/8(proj.1):

3. Method of Examination

*Section 3.1 "Duration of Tests"*

Replace "a single growing cycle" by "two independent growing cycles."

5. Grouping of Varieties and Organization of the Growing Trial

*Section 5.3*

Delete (a) Basal leaf: sheath color.

7. Table of Characteristics

It was agreed that separate sets of example varieties should be provided for the European, South East Asia (including Southern China) and Northern Asia regions. The leading expert explained that the current example varieties provided by Spain were being updated with more widely available varieties.

Char. 1 Japan to provide example varieties
Leading expert to check if this characteristic is linked to Char. 2

Char. 9 Leaf auricles. To be deleted (only 51 IRRI accessions have the state "absent")

Char. 11 Leaf collar. To be deleted (only 5 IRRI accessions have the state "absent")

Char. 13 Leaf: ligule. To be deleted (only 5 IRRI accessions have the state “absent”)

Char. 14 Leaf: shape of ligule. To indicate that it should be examined at growth stage 40

Char. 15 Leaf: color of ligule. To insert new state (1) “ colorless”

Char. 20 Culm: kneeing ability (for floating rice only). (+) to be added. Thailand to provide explanation

Char. 21 Culm: attitude. Japan to provide illustration

Char. 23 Male sterility. China to be asked to consider deleting the characteristic and introducing it in Section 4 of the Technical Questionnaire. If the characteristic is retained, China to provide their three states of expression, method of examination and example varieties.

Char. 24-26 These characteristics to be repeated at growth stage 92. Interested countries will check if these additional characteristics would provide useful additional discrimination.

Char. 35 Panicle: number per plant. Republic of Korea to provide explanation

Char. 36 Panicle: color of awns (early observation). Leading expert requested example varieties

Char. 41 Panicle: length of longest awns. To be recorded at growth stage 70-80 and moved to the correct place in the Test Guidelines

Char. 47 Time of maturity. State (5) to read “intermediate”. To delete example variety “Bahia” from state (5)

Char. 48 Leaf senescence. To check if state (5) should be medium or intermediate

New (after Char. 48)
Lemma: color. To have states: straw (1); straw with gold furrows (2); gold (3); brown furrows on straw (4); brown (tawny) (5); reddish to light purple (6); purple spots on straw (7); purple furrows on straw (8); purple (9); black (10)

Char. 54 Delete plural “s” from “absentes” and “presentes” in French version

Char. 56 & 57 Decorticated grain length / width: “MS” to be indicated as method of examination

Char. 59 Decorticated grain: color. State (9) to read “dark purple / black”. Leading expert requested example varieties for the state (9) black. To add (*)

Char. 60 Endosperm: presence of amylose. Replace “presence of amylose” with “type.” To add (*)

Char. 61 Endosperm: content of amylose. Japan to provide example varieties

Char. 62 To read: Polished grain: white core in endosperm, with states: less than 5% (1); 5-10% (3); 11-20% (5); 21-40% (7); over 40% (9). Republic of Korea to provide illustration

Char. 63 Decorticated grain: white belly in endosperm. To read: less than 5% (1); 5-10% (3); 11-20% (5); 21-40% (7); over 40% (9). Republic of Korea to provide illustration

Char. 63 Alkali digestion. Japan to provide explanation

Char. 64 Decorticated grain: aroma. Spain to provide explanation

Char. 65 Add (*)

8. Explanations on the Table of Characteristics

Ad.18 /19 "Reflexed" to be replaced by "Recurved"

Ad. 24-26 Add indication of palea

Ad. 43 /44 Legend for drawings to be corrected regarding states of expression

Ad. 64 Japan to provide improved explanation

9. Literature

Japan to advise correct reference. IRRI reference to be provided.

10. Technical Questionnaire

To be updated.

*82. The TWA agreed that a new document including the above-mentioned amendments be prepared for discussion at its thirty-second session.

*Lotus (document TWA/31/3)*

*83. The TWA agreed the following changes to be submitted to the leading expert for inclusion in the document:

General:

Title of the document to read: "Draft Test Guidelines for Lotus spp."

3. Method of Examination

Section 3.3.1.

To have “MG: single measurement of a group of plants or parts of plants” instead of “M: actual measurement”

Paragraph 3.4.2 :

To be modified following the text used in the Test Guidelines for White Clover.

7. Table of Characteristics:

To add example varieties to the table.

Char. 5: to add an explanation and (+)

Char. 9: to add explanation and (+)

Char. 12: to be moved before Char. 10.

Char. 16: to check with the leading expert whether “B” should be deleted or “VG” added.

Char. 17: to have “MG” instead of “M” and to clarify if the characteristic should be assessed on the seed submitted by the applicant or on harvested seed.

10. Technical Questionnaire

Section 1: to add boxes to mark the species of the variety and to add the text “please indicate”.

84. The TWA agreed that a new document including the above-mentioned amendments be prepared for discussion at its thirty-second session.

*White Clover (document TWA/31/4)*

85. The TWA agreed the following changes:

3. Method of Examination

Section 3.3.1

To add: “MG: single measurement of a group of plants or parts of plants”

Section 3.3.2 Type of observation

To read: “A: spaced plants” instead of “A: spaced plant”.

5. Grouping of Varieties and Organization of the Growing Trial

paragraph 5.3, sentence (b) to read:
“(b) Leaf: intensity of white marks (characteristic 4)”

6. Introduction to the Table of Characteristics

Section 6.5 Legend

To delete the reference (QL), (QN) and (PQ)

7. Table of Characteristics

Char. 1: to delete brackets in the number of the characteristic and to read: "Plant: tendency to form inflorescences before vernalization"

Chars. 2 and 4: to add B and VG

Char. 5: to add B and MG

Char. 6: to add B, MG, (+) and explanation on the timing for observation

Char. 7: to add (+) and explanation on the timing for observation

Char. 10: to delete the underlining in columns English and Example Varieties

Char. 15: to read "Inflorescence: length of peduncle" and to add (+) and the corresponding explanation

Char. 16: to add (+) and the corresponding explanation

New Char. 7(a): "Plant: growth habit" with states of expression "semi-erect (3)"; "intermediate (5)" and "prostrate(7)" and to have the legend "B–VG" and "A-VS"

New Char. 7(b): "Stem: internode length", states of expression to be agreed among the interested experts

New Char. 15(a): "Inflorescence: thickness of peduncule", states of expression to be agreed among the interested experts

New Char. 16(a): "Inflorescence: diameter", states of expression to be agreed among the interested experts

New Char. "Plant: foliage density", states of expression to be agreed among the interested experts.

8. Explanations on the Table of Characteristics

Ad. 1: to modify according to the table.

Ad. 3: to have a new explanation if it is possible to agree among interested experts

Ad. 4: to read: "The observation should be made ~~at beginning of~~ before flowering...."

Ad. 5: to have a new explanation

Ad. 8: second paragraph to read: "The thickness (diameter) of the stolon should be measured at a point midway between the third and the fourth node counted from the growing tip."

Ad. 9 and 10 to read: "The petiole of the third expanded leaf counted from the growing tip of the stolon should be selected for measurement. The thickness should be measured at the widest point of the petiole.

Ad. 13 and 14: to refer to characteristic number (11) instead of (10)

10. Technical Questionnaire

Section 5, characteristic "Plant: intensity of white leaf marks," example variety for state of expression (1) to read "Steinacher Weißklee"

*86. The TWA agreed that, if agreement on the new characteristics was achieved by the interested experts, the Test Guidelines for White Clover could be presented to the TC for adoption at its thirty-ninth session in April 2003.

Discussions on Working Papers on Test Guidelines (Subgroups)

*Potato (document TWA/31/6)*

*87. The TWA agreed the following changes to document TWA/31/6:

3. Method of Examination

Section 3.3.1 Remove boxes "a" and "b" (also from the Table of Characteristics for characteristics 3-11 and 32-34).
Section 3.3.1 Lightsprout: to read "All observations on the lightsprout should be made on a total of at least 6 tubers, about 12 weeks after starting the test. The method is provided in Chapter 8."

Section 3.4.2 Remove "," after "of"

Section 3.5 To read: "… total number of 60 plants"

Section 4.2.3 Change sample size to 6

5. Grouping of Varieties and Organization of the Growing Trial

Section 5.3 Delete proposal from Australia

6. Introduction to the Table of Characteristics

Section 6.5 Delete QL, QN, PQ

7. Table of Characteristics

Char. 3 (+) to be added

Char. 5 (+) to be added

Chars. 8-10 (+) to be added

Char./Ad. 12 To read “Plant: foliage structure”

Char./Ad. 13 States to be changed to 3, 5, 7.

Char./Ad. 14 To read “Stem: proportion of stems with anthocyanin coloration”
Char. 16 To read “Leaf: openness”

Char./Ad. 17 To read “Leaf: presence of secondary leaflets”

Char. 18 (+) to be added

Char./Ad. 19 To read “Leaf: proportion of anthocyanin coloration of midrib on upper side”

Chars. 23-25 (+) to be added

New Char. to read “Leaflet: pubescence of blade of young leaflets of apical rosette”. Russian Federation to provide several example varieties for the characteristic to be seen by other countries.

Char./Ad. 26 To read “Flower bud: proportion of anthocyanin coloration”

Char./Ad. 30 To read “Inflorescence: proportion of anthocyanin coloration of peduncle”
Char. 31, 32 (+) to be added

Char. 33 to read “Flower corolla: proportion of blue in anthocyanin coloration of inner side”

Char./Ad. 34 To read “Flower corolla: proportion of coloration”

Char. 38 Leading expert to check if the current wording is suitable for “russet” type varieties.

8. Explanations on the Table of Characteristics

Ad. 1-11 The wave-length of incandescent bulbs should be specified if this is kept as the method.

Ad. 13 to be updated re. Char. 13

Ad. 14, 30, 34 to be updated re. Char. 14, 30, 34

Ad. 15 to 25 to read “All observations on the leaf should be made on fully developed leaves from the center of the plant.”

Ad. 15-17 and 20 to read "For the observation of characteristics 15, 16, 17 and 20, leaves should be taken from the middle of a stem of each of 20 plants."

Ad. 22 to read "Proportion of coalescent leaves should be observed"

Ad. 36 to read "The average shape should be observed on the harvested sample from the whole plot." Index to be deleted.

Optimal Stage of Assessment of Characteristics: To read "1 = bud stage; 2 = flowering stage; 3 = ripening stage of tubers; 4 = after harvest"
Section 10.6 "Similar varieties and differences from these varieties" The examples given should be omitted and suitable examples provided.

Part III.1 Number of tubers for DUS to be changed to 6. Reference to checking identity to be deleted.

*88. The TWA noted that the ring-test on electrophoretic characteristics would be completed in early 2003.

*Lupins (document TWA/31/5)*

*89. The TWA agreed the following changes to document TWA/31/5 (file name TG/66/4(proj.1).doc)

Cover page: Additional English name of "Narrow leaf lupin" to be added for *Lupinus angustifolius* L.

1. Subject of the Test Guidelines

Section 1.1 Delete repeated "of"

2. Material Required

Section 2.3 To be changed to 2.5 kg for all types

3. Method of Examination

Section 3.3.1 To read "All observations on the grain should be made on grain of fully mature pods harvested from the plots, unless otherwise indicated."

Section 3.5 To be updated according to the changes to TGP/7.2 draft 1.

6. Introduction to the Table of Characteristics

Section 6.5 Delete QL, QN, PQ

7. Table of Characteristics

Char. 2 To read "Plant: height at vegetative stage. (+) to be added

Char. 3 Delete

Char. 4 To read “Leaf: green color prior to bud emergence”

Char. 5 To read “Stem: anthocyanin coloration prior to bud emergence”

Char. 11 Delete states “medium yellow (7)” and “orange (9)”

Char. 12 To delete state of expression “red purple”

Char. 17 and 18 To swap the order.

8. Explanations on the Table of Characteristics

Ad. 1 To read: “The bitter principle should be assessed on the seed submitted by the applicant. The Grain-Cut-Method after … The cut surfaces of the bitter grains discolor to brown, but those of the non-bitter grains remain yellow.”

Ad. 2 To read: “To be observed on the whole trial before bud emergence of the earliest variety”

Ad. 3 To be deleted

Ads. 9, 10 To read: “Central leaflet: length and width. All observations on the leaf should be made at the time of full flowering on a central leaflet of the leaf just below the uppermost branch carrying flowers.”

Ad. 11, 12 The wording to change to “Flower: color of wing” and “Flower: color of tip of carina”. Diagram for wings and carina to be provided.

The second sentence to read: “Observations should be made on the middle of the inflorescence on flowers at the stage of pollen release.”

Ad. 13 Explanation of determinate and indeterminate types to be provided. Drawing to be improved

Ad 18 To read “sparse” instead of “weak” and “dense” instead of “strong”, to delete ad. for characteristics

Ad. 20 to read: “Time of flowering”

10. Technical Questionnaire

To add box in Section 1 and to add a sentence with “Please indicate.”

Section 5.5: To read “Time of flowering (quote date of flowering of variety as well as of two well-known comparable varieties)”

Section 6. To delete the example.

*90. The TWA agreed that, if agreement was achieved by the interested experts, the Test Guidelines for Lupins could be presented to the TC for adoption at its thirty-ninth session in April 2003.

*Coffee (document TWA/31/11)*

91. The TWA agreed the following changes:

To delete the Annex to the document.

I. Subject of these Test Guidelines

The scientific names to read as follows: *Coffea arabica* L. (Arabica type) and *Coffea canephora* L. (Robusta type)

II. Material Required

To require 20 seedlings for *Coffea arabica* L.; 30 plants for seed-propagated varieties for *Coffea canephora* L. and 20 plants in the case of interspecific hybrids. In all cases, the plant should not be older than one year.

III. Conduct of Tests

Third sentence of paragraph 3 to read: "Each plot should include 5, 20 or 30 plants according to the species and the reproductive system as required in Section II."

IV. Methods and Observations

To specify the age of the trees on which observations will be made.

Paragraph 1 to read: Unless otherwise indicated, all observations should be made on 5 plants or parts taken from each of 5 plants.

Paragraph 2: to change the population standard to 5% in the case of *Coffea arabica* L. and 10% in the case of *Coffea canephora* L. and to refer the number of off-types to the samples size in Section III.

V. Grouping of Varieties

The interested experts to consider by e-mail the possible inclusion of example varieties.

VII. Table of Characteristics

To clarify that the example varieties are *Coffea arabica* L. only.

To have the following order: 1-2-3-34-16-5-6-7-8-9-10-11-12-13-14-15-32-17-18-19-20-21-22-23-24-31-36-25-26-27-28-29-30-35-37-38

Char.1 To check wording of stage of expression 4

Char. 3 To read: "Plant: diameter of canopy"

Char. 4 To read: "Stem (main and lateral): length of internodes"

Char. 5 To read: "Plagiotropic branch: attitude"

Char. 11 To read: “Leaf: ondulation of the margin”

Char. 12 To read: “Leaf: degree of ondulation of margin”

Char. 16 To read: “Plant: number of inflorescence per axil”

Char. 17 To read: “Inflorescence: number of flowers”

Char. 18 To read: “Flower: pollen fertility”

Char. 19 To be reworded

Char. 22 To read: “Fruit: color” and to add explanation

Char. 23 To read: “Sepal: type” with states of expression “dehiscent” (1) and “non-dehiscent” (2)

Char. 24 To add explanation

Char. 29 To read: “Seed: shade of suber skin”

Char. 30 To read: “Time of maturity (at 80% of mature fruits)

Char. 32 To read: “First flowering” and to add explanation

Char. 33 To read: “Plaguitropic branch: ramification” with states of expression “weak” (3), “medium” (5) and “strong” (7)

Char. 34 To read: “Plant: basal orthotropic branching” with states of expression “weak” (3), “medium” (5) and “strong” (7)

Char. 35 To be deleted

Char. 36 To read: “For *C. Canephora* L. only) Fruit: juiciness of mesocarp”

Char. 37 To read “Seed: caffeine content” and to add explanation

*92. The TWA agreed that a new document including the above-mentioned amendments to be prepared for discussion at its thirty-second session.

*Grain Amaranth (document TWA/31/12)*

*93. The Technical Working Party agreed the following changes:

I. Subject of these Test Guidelines

To mention the scientific names of the four species covered by these Test Guidelines and the phrase “excluding ornamental types”.

III. Conduct of Tests

Paragraph 2: the third sentence to read: "As a minimum each test should include a total of 50 plants in the case of inbred lines and 150 plants in the case of cross-pollinated varieties."

Paragraph 4: to be deleted.

IV. Methods and Observations

Paragraph 2 to add: "For the assessment of uniformity of inbred lines, a population standard ..."
To add a paragraph with standard wording for relative uniformity in the case of cross-pollinated varieties.

To add a paragraph: "Unless otherwise indicated all characteristics of the inflorescence should be observed in the main inflorescence."

Paragraph 5 to read: "When disease resistance characteristics are used ..."

VII. Table of Characteristics

To have the following order: 1-2-3-4-37-20-5-6-7-8-9-10-11-12-13-14-15-16-18-17-19-21-22-23-24-25-26-27-28-29-35-31-32-33-34-36-38-39-40-41-30-42-43-44-45-46-47-48-49-50-51-52-53-54-55

To delete the word "Main" in all the characteristics referring to main inflorescence.

Char. 1 To be deleted

Char. 2, 3, and 4 To add explanations and to check if they are not correlated.

Char. 6 To check states of expression

Char. 7 To divide into two characteristics:

"Leaf: incisions of margin" with states of expression "entire' (1) and "crenate" (2)

"Ondulation of margin" with states of expression "absent" (1) and "present" (9)

Char. 10 To read: "Anthocyanin pigmentation of blade"

Char. 11 To read: "Leaf: intensity of anthocyanin pigmentation of petiole"

Char. 14 To check and provide drawings

Char. 15 To read: "Leaf: basic color"

Char. 17 To add explanation

Char 19 To read: "Leaf: shape of spot"

Char. 20 To read: "Leaf: distribution of pigmentation at the beginning of the growth", to add explanation on the time of observation

Char. 21 To add explanation

Char. 23 To check with the experts whether it could be split into two characteristics: absence-presence and intensity and to provide explanation

Char. 24 To check with experts

Char. 26 To check with experts the states of expression

Char. 29 To look for a better wording that describes the best way of assessment

Char. 34 State 3 to read "loose" (3)

Char. 35 To check with the experts the way of assessment and the real need of these characteristics for DUS purposes

Char. 37 To read: "Plant: growth type"

Char. 39 To read: "Plant: presence of axilar inflorescence"

Char. 37 and 41 To check whether they are not the same assessment

Char. 43 To read: "Leaf: time of pigmentation at maturity of the grain"

Char. 44 To check time of observation

Char. 45 To add explanations

Char. 46 To add explanation on the way of assessment for the different types of plants

Char. 47 To check whether the different states of expression are not characteristics of the different species

Char. 48 State of expression 4 to read "light brown" and to delete stage 8

Char. 50 To read: "Seed: testa" and to check the wording of the states of expression

Char. 51 To add explanation on the way of assessment

Char. 52 To be deleted

Char. 53, 54 and 55 To add the explanations

VIII. Explanations on the Table of Characteristics

Ad. 6 and 7: To add more drawings

Ad. 36 To add examples for upright inflorescences also.

X. Technical Questionnaire

Refer to GRAIN AMARANTH and to include the four species in item 1.

*94. The TWA agreed that a new document including the above-mentioned amendments be prepared for discussion at its thirty-second session.

*Medicago (document TWA/31/10)*

*95. No record of the Subgroup discussions is available.

Recommendations on Draft Test Guidelines (Plenary)

*96. Draft Test Guidelines on the following crops will be sent to the professional organizations and then submitted to the TC for approval in April 2003, on the basis of the amendments presented in paragraphs 70, 71 and 74, 75 of this document.

– White Clover (TG/38/6; document TWA/30/4)
– Lupins (TG/66/3; document TWA/30/2).

*97. The TWA decided to discuss further the following draft Test Guidelines or working papers on draft Test Guidelines at its next session:

– Rice
– Lotus
– Potato
– Coffee
– Grain Amaranth
– Medicago (excl. sativa).

*98. The TWA agreed to prepare the following draft Test Guidelines for discussion at its next session:

– Sesame
– Ryegrass (Revision)
– Lucerne (Revision).

99. The list of leading experts and interested experts, countries and organization is reproduced in Annex II to this document.

Future Program, Date and Place of the Next Session

*100. At the invitation of the expert from Japan, the TWA agreed to hold its thirty-second session in Tsukuba, Japan, from September 8 to 12, 2003.

*101. The TWA noted that it had already received offers from the following countries to host future meetings:

| | |
|---|---|
| 2004 | Poland |
| 2005 | New Zealand |
| 2006 | South Africa. |

*102. The expert from Hungary offered to host the TWA in 2007.

*103. The TWA proposed to discuss the following items at its next session:

1. Short reports on developments in plant variety protection:
   (a) reports from members and observers (brief oral reports by the participants)
   (b) report on developments within UPOV (oral report by the Office of the Union)

2. Molecular techniques:
   (a) Report on the eighth session of the BMT
   (b) Reports from *Ad hoc* Crop Subgroups

3. Publication of Variety Descriptions

4. Project for exchanging seed of selected varieties between interested countries (report on the development of the project)

5. TGP documents

6. Discussions on draft Test Guidelines (Subgroups)

7. Discussions on working papers on draft Test Guidelines (Subgroups)

8. Recommendations on draft Test Guidelines (Plenary)

9. Date and place of next session

10. Future program.

Technical Visit

104. On September 25, 2002, the TWA visited the National Center for Agri-biological Research - *EMBRAPA Agribiologia* (*Centro Nacional de Pesquisa de Agrobiologia*). The TWA was welcomed by Dr. Maria Cristina Prata Neves, Director of EMBRAPA Agribiologia. She explained that the research center was responsible for coordinating research projects on sustainable agricultural based on biological process with the aim of replacing chemical fertilizer. She added that there were 57 research projects coordinated by the center at that moment. The TWA also received reports from the Brazilian Association of Seed Producers (ABRASEM) and the Brazilian Association of Plant Breeders (BRASPOV) and from the tobacco industry in Brazil. Afterwards, the TWA visited several field trials of biological agriculture at the organic farm *Fazendinha*.

Closing of the Meeting

105. Mrs. Françoise Blouet, Mr. Baruch Bar-Tel and Mr. Michael S. Camlin, were awarded UPOV medals in recognition of their chairmanship of UPOV Technical Working Parties as follows

Mrs. Françoise Blouet: a bronze medal for her chairmanship of the TWA for the period 1999-2002;

Mr. Baruch Bar-Tel: a bronze medal for each of the following chairmanships: the Technical Working Party for Ornamental Plants and Forest Trees (TWO) for the period 1985-1987; the Technical Working Party for Fruit Crops (TWF) for the period 1988-1990; and the Technical Working Party for Vegetables (TWV) for the period 1997-1999;

Mr. Michael S. Camlin: a bronze medal for his chairmanship of the TWA for the period 1990-1992.

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

[Annex I follows]

ANNEX I

# LIST OF PARTICIPANTS

## I. MEMBER STATES

### ARGENTINA

Marcelo LABARTA, Director de Registro de Variedades, ex-Instituto Nacional de Semillas, Secretaría de Agricultura, Ganadería, Pesca y Alimentación (SAGPYA), Paseo Colón 922, 3 piso, of. 347, 1063 Buenos Aires (tel.: +54 11 4349 2445, fax: +54 11 4349 2444, e-mail: mlabar@sagpya.minproduccion.gov.ar)

### AUSTRALIA

George PIPERIDIS, Research Scientist, Bureau of Sugar Experiment Stations, P.O. Box 86, 7 Romea Str., Queensland, The Gap Q4061 (tel.: +61 7 3331 3373, fax: +61 7 3871 0383, e-mail: gpiperidis@bses.org.au)

### BRAZIL

Ariete DUARTE FOLLE (Sra.), Coordenadora Geral, Serviço Nacional de Proteção de Cultivares (SNPC), Ministério da Agricultura, Pecuária e Abastecimento, Esplanada dos Ministérios, Bloco D, Anexo A, Térreo, Salas 1-12, Brasilia 70043-900 (tel.: + 55 61 2182163, fax: + 55 61 2242842, e-mail: ariete@agricultura.gov.br)

Álvaro Antônio NUNES VIANA, Coordenador de Análise, Cadastro e Proteção, Serviço Nacional de Proteção de Cultivares (SNPC), Ministério da Agricultura, Pecuária e Abastecimento, Esplanada dos Ministérios, Bloco D, Anexo A, Térreo, Salas 1-12, Brasilia 70043-900 (tel.: + 55 61 2182163, fax: + 55 61 2242842, e-mail: aviana@agricultura.gov.br)

George SIMON, Serviço Nacional de Proteção de Cultivares (SNPC), Ministério da Agricultura, Pecuária e Abastecimento, Esplanada dos Ministérios, Bloco D, Anexo A, Térreo, Salas 1-12, Brasilia 70043-900 (tel.: + 55 61 2182163, fax: + 55 61 2242842, e-mail: simon@agricultura.gov.br)

Leontino REZENDE TAVEIRA, Serviço Nacional de Proteção de Cultivares (SNPC), Ministério da Agricultura, Pecuária e Abastecimento, Esplanada dos Ministérios, Bloco D, Anexo A, Térreo, Salas 1-12, Brasilia 70043-900 (tel.: + 55 61 2182163, fax: + 55 61 2242842, e-mail: leontino@agricultura.gov.br)

Maria Celia SOÜB (Sra.), Serviço Nacional de Proteção de Cultivares (SNPC), Ministério da Agricultura, Pecuária e Abastecimento, Esplanada dos Ministérios, Bloco D, Anexo A, Térreo, Salas 1-12, Brasilia 70043-900 (tel.: + 55 61 2182163, fax: + 55 61 2242842, e-mail: mariacelia@agricultura.gov.br)

Maria Telza ÁVILA BASTOS (Sra.), Coordenadora do Laboratório de Diferenciação de Cultivares, Serviço Nacional de Proteção de Cultivares (SNPC), Ministério da Agricultura, Pecuária e Abastecimento, Esplanada dos Ministérios, Bloco D, Anexo A, Térreo, Salas 1-12, Brasilia 70043-900 (tel.: + 55 61 2182163, fax: + 55 61 2242842, e-mail: telza@agricultura.gov.br)

Roberto Lorena de BARROS SANTOS, Serviço Nacional de Proteção de Cultivares (SNPC), Ministério da Agricultura, Pecuária e Abastecimento, Esplanada dos Ministérios, Bloco D, Anexo A, Térreo, Salas 1-12, Brasilia 70043-900 (tel.: + 55 61 2182163, fax: + 55 61 2242842, e-mail: robertolbs@agricultura.gov.br)

Vera Lúcia DOS SANTOS MACHADO (Sra.), Serviço Nacional de Proteção de Cultivares (SNPC), Ministério da Agricultura, Pecuária e Abastecimento, Esplanada dos Ministérios, Bloco D, Anexo A, Térreo, Salas 1-12, Brasilia 70043-900 (tel.: + 55 61 2182163, fax: + 55 61 2242842, e-mail: veramachado@agricultura.gov.br)

CANADA

Valerie SISSON (Ms.), Commissioner, Plant Breeders' Rights Office, Canadian Food Inspection Agency (CFIA), Camelot Court, 59, Camelot Drive, Nepean, Ontario K1A OY9 (tel.: +1 613 225 2342, fax: +1 613 228 6629, e-mail: vsisson@inspection.gc.ca, http://www.cfias-acia.cg.ca)

CHILE

Enzo CERDA, Jefe Subdepartamento Registro de Variedades, Departamento de Semillas, Servicio Agrícola y Ganadero (SAG), Avda. Bulnes 140 - Piso 2, Santiago de Chile (tel: +56 2 696 2296, fax: + 56 2 697 2179, e-mail: enzo.cerda@sag.gob.cl.

CZECH REPUBLIC

Jiří SOUCEK, Head of Department, Central Institute for Supervising and Testing in Agriculture, Department of Plant Variety Rights and DUS Tests, Za opravnou 4, 150 06 Praha 5 - Motol (tel. +420 257 211 755; 420 257 277 752. fax +420-2-57211752, e-mail: jiri.soucek@ooz.zeus.cz, http://www.zeus.cz.)

DENMARK

Gerhard DENEKEN, Director, Danish Institute of Agricultural Sciences, Department of Variety Testing, Ministry of Food, Agriculture and Fisheries, Postbox 7, Teglvaerksvej 10, Tystofte, 4230 Skaelskoer (tel.: +45 58 160601, fax: +45 58 160606, e-mail: gerhard.deneken@agrsci.dk, http://plantseinfo.co.dk/SDB.)

Erik LAWAETZ, Department of Variety Testing, Postbox 7, Teglvaerksvej 10, 4230 Skaelskoer (tel.: +45 5816 06 03, fax: +45 5816 06 06, e-mail: erik.lawaetz@agrsci.dk)

ESTONIA

Pille ARDEL (Mrs.), Head of Department, Variety Control Department, Estonian Plant Production Inspectorate, 71024 Viljandi (tel.: +372 4 334 650, fax: +372 4 334 650, e-mail: pille.ardel@plant.agri.ee, http://www.plant.agri.ee )

FINLAND

Kaarina PAAVILAINEN (Ms.), Plant Production Inspection Centre, Seed Testing Department, P.O. Box 111, 32201 Loimaa (tel.: +358-2-760 56 247, fax: +358-2-760 506 222, e-mail: kaarina.paavilainen@kttk.fi)

FRANCE

Françoise BLOUET (Mrs.), Ingénieur de Recherches, GEVES, La Minière, 78285 Guyancourt Cedex (tel.: +33 1 3083 3582, fax: +33 1 3083 3678, e-mail: francoise.blouet@geves.fr)

Joël GUIARD, Directeur adjoint, Groupe d'étude et de contrôle des variétés et des semences (GEVES), La Minière, 78285 Guyancourt Cédex (tel.: +33 1 3083 3580, fax: +33 1 3083 3629, e-mail: joel.guiard@geves.fr, http://www.geves.fr)

GERMANY

Beate RÜCKER (Frau), Bundessortenamt, Osterfelddamm 80, 30627 Hannover (tel.: +49 511 956 6650, fax: +49 511 5633 62, e-mail: beate.ruecker@bundessortenamt.de, http://www.bundessortenamt.de)

HUNGARY

Tamás HARANGOZÓ, National Institute for Agricultural Quality Control, Keleti K. u. 24, 1024 Budapest (tel.: +36 1 225 7629, fax: +36 1 212 2673, e-mail: tharangozo@ommi.hu)

László LÁZÁR, Counsellor, National Institute for Agricultural Quality Control (NIAQC), P.O. Box 30.93, 1525 Budapest 114 (tel.: +36 1 212 31 27, fax: +36 1 212 58 00, e-mail: ommiszam@mail.datanet.hu; lazarl@ommi.hu, http://www.ommi.hu)

ISRAEL

Baruch BAR-TEL, Plant Breeders' Rights Testing Unit, Agricultural Research Organisation, The Volcani Center, P.O. Box 6, Bet-Dagan 50250 (tel.: +972 3 968 3458, fax: +972 3 968 3669, e-mail: ilpbr-tu@int.gov.il)

JAPAN

Chukichi KANEDA, Technical Counselor, Association for International Cooperation of Agriculture and Forestry (AICAF), Ichibancho 19, Chiyoda-ku, Tokyo 102-0082 (tel.: +81 3 32 63 73 77, fax: +81 3 32 34 51 37, e-mail: c.kaneda@aicaf.or.jp)

Toshiharu SHIMAZAKI, Examiner for Agricultural Crops, Seeds and Seedlings Division, Plant Variety Examination Office, Ministry of Agriculture, Forestry and Fisheries, 1-2-1 Kasumigaseki, Chiyoda-ku, 100-8950 Tokyo (tel.: +81 335 81 0518, fax: +81 335 02 65 72, e-mail: toshiharu_shimazaki@nm.maff.go.jp, http://www.hinsyu.maff.go.jp)

MEXICO

Aquiles CARBALLO CARBALLO, Professor-Investigator, Colegio de Postgraduados (CP), Km. 35.5 Carretera México-Texcoco, 56230 Montecillo (tel.: +52 55 5804 5900 ext. 1552, fax: +52 55 5804 5962, e-mail: carballo@colpos.colpos.mx)

NETHERLANDS

Henk BONTHUIS, Plant Research International, Postbox 16, 6700 AA Wageningen (tel.: +31 317 47 68 23, fax: +31 317 41 80 94, e-mail: h.bonthuis@plant.wag-ur.nl; www.plant.wag-ur.nl, http://www.kwekersrecht.nl)

NEW ZEALAND

Philip RHODES, Examiner, Agricultural & Vegetable Varieties, Plant Variety Rights Office, P.O. Box 130, Lincoln, Canterbury (tel.: +64 3 325 6356, fax: +64 3 783 3946, e-mail: phil.rhodes@pvr.govt.nz; pvr.pr.govt.nz)

ROMANIA

Adriana PARASCHIV (Mrs.), Head, Examination Department, State Office for Inventions and Trademarks, 5, Jon Ghica, Sector 3, 70018 Bucarest (tel.: +40 1 315 5698, fax: +40 1 312 3819, e-mail: adriana.paraschiv@osim.ro, http://www.office@osim.re.)

RUSSIAN FEDERATION

Tatiana NIKOLAEVSKAYA (Mrs.), State Commission of the Russian Federation for Selection Achievements Test and Protection, Orlicov per. 1/11, 107139 Moscow (tel.: +70 95 204 49 23, fax: +70 95 207 86 26, e-mail: desel@agro.aris.ru; statecommission@mtu-net.ru)

SOUTH AFRICA

Robyn HIERSE (Mrs.), Private Bag X5044, Stellenbosch 7599 (tel.: +27 21 809 1655, fax: +27 21 887 2264, e-mail: robynh@nda.agric.za)

SPAIN

Cecilio PRIETO MARTIN, Subdirección General de Investigación y Tecnología (INIA), Carretera de la Coruña km. 7.5, 28040 Madrid (tel.: +34 91 347 69 63, fax: +34 91 347 41 68, e-mail: prieto@inia.es)

Luis SALAICES, Jefe de Área del Registro de Variedades, Oficina Española de Variedades Vegetales (OEVV), Ministerio de Agricultura, Pesca y Alimentación (MAPA), Avda. de Ciudad de Barcelona No. 6, 28007 Madrid (tel.: +34 91 3476712, fax: +34 91 3476703, e-mail: lsalaice@mapya.es)

SWEDEN

Gunnar KARLTORP, Head of Office, National Plant Variety Board, Box 1247, 171 24 Solna (tel.: +46 8 7831260, fax: +46 8 833170, e-mail: karltorp@svn.se, http://www.svn.se)

Ulf KJELLSTRÖM, Swedish Seed Testing and Certification Institute, Onsjövägen, 26881 Svalöv (tel.: +46 41 667 407, fax: +46 41 667 408, e-mail: ulf.kjellstrom@su-kontroll.se)

UNITED KINGDOM

Michael S. CAMLIN, Department of Agriculture and Rural Development, Plant Testing Station, 50 Houston Road, Crossnacreevy, Belfast BT6 9SH (tel.: +44 2890 548000, fax: +44 2890 548001, e-mail: michael.camlin@dardni.gov.uk)

Robert J. COOKE, Head of Plant Variety Group, NIAB, Huntingdon Road, Cambridge CB3 0LE (tel.: +44 1223 342 331, fax: +44 1223 277 602, e-mail: robert.cooke@niab.com)

## II. OBSERVER

COMMUNITY PLANT VARIETY OFFICE (CPVO)

Dirk THEOBALD, Head of the Technical Unit, Community Plant Variety Office (CPVO), 3, boulevard Maréchal Foch, B.P. 2141, 49021 Angers Cedex 02 (tel.: +33 2 4125 6442, fax: +33 2 4125 6410, e-mail: theobald@cpvo.eu.int)

Anne WEITZ (Mrs.), Community Plant Variety Office (CPVO), 3, boulevard Maréchal Foch, B.P. 2141, 49021 Angers Cedex 02 (tel.: +33 2 4125 6442, fax: +33 2 4125 6410, e-mail: weitz@cpvo.eu.int)

INTERNATIONAL SEED FEDERATION (ISF)

Ivana VILELA (Sra.), SCS Q. 1 Ed. Baracat, sala 501, CEP 70309-900, Brasilia (tel.: + 61 226 90 22, fax: + 61 226 90 22, e-mail: ivanavilela@braspov.com.br)

## III. OFFICER

Françoise BLOUET (Mrs.), Chairperson

## IV. OFFICE OF UPOV

Peter BUTTON, Technical Director, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland (tel. +41-22-338 8672, fax +41-22-733 03 36, e-mail: peter.button@upov.int, Website: http://www.upov.int)

Raimundo LAVIGNOLLE, Senior Counsellor, 34, chemin des Colombettes, 1211 Geneva 20, Switzerland (tel. +41-22-338 9565, fax +41-22-733 0336, e-mail: raimundo.lavignolle@.upov.int)

[Annex II follows]

ANNEX II

LIST OF LEADING EXPERTS

| Species | Basic document | Leading experts | Interested experts (countries/ organizations) (for name of experts see List of Participants, Annex I) |
|---|---|---|---|
| Lotus | TWA/31/3 | Carlos Gómez - UY | DE, FR, NZ, UK |
| Rice | TG/16/8 (proj.1). | Luis Salaices - ES | BR, CN, FR, HU, IT, JP, KR, UY |
| Potato | TWA/31/6 | Beate Rücker - DE | AR, AU*, BR, CA, ES, FR, GB, IL, NL, NZ, RU, SE, UY, ZA, CPVO |
| Lucerne | TG/06/4 | Joël Guiard - FR | AR, AU*, CZ, DE, EE, ES, HU, ZA, CPVO |
| Medics (Medicago) spp. other than sativa | TWA/31/10 | Joan Sadie - ZA | AR, AU*, ZA |
| Coffee | TWA/31/11 | Alvaro Viana - BR | KE, MX |
| Grain Amaranth | TWA/31/12 | Aquiles Carballo Carballo - MX | BR, HU, ZA |
| Pearl Millet | - | - | FR |
| Ryegrass (Revision) | TG/04/7 | Michael Camlin - GB | AR, CPVO, CZ, DE, DK, FR, HU, NL, NZ, ZA |
| Sesame | First draft | Baruch Bar-Tel - IL | |

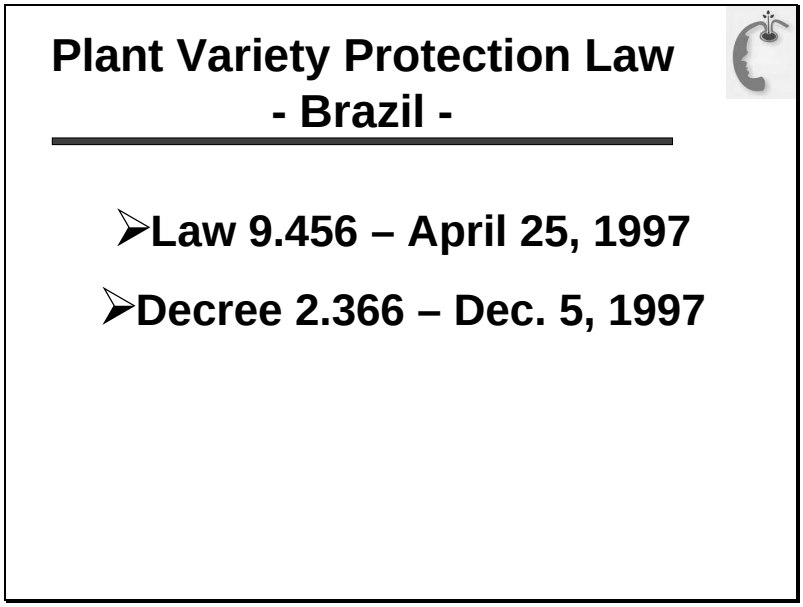
* The expert is Mr. Tanvir Hossain, Examiner, Plant Breeder's Rights Office, Department of Agriculture, Fisheries and Forestry, Edmund Barton Building, Barton ACT, GPO Box 858, Canberra 2601, Australia (tel.: + 61 2 6272 4228, fax: 61 2 6272 3650, e-mail: Tanvir.Hossain@affa.gov.au)

[Annex III follows]

ANNEX III

Slide 1


Slide 2



Slide 3

## Act 78

On the date of initial effectiveness of the law:

at least 5 species

After 3 years: at least 10 species

After 6 years: at least 18 species

After 8 years: at least 24 species

Slide 4

## SPECIES UNDER PROTECTION

- ✓ **Cotton**
- ✓ **Rice**
- ✓ **Potato**
- ✓ **Bean**
- ✓ **Sugar cane**
- ✓ **Corn**
- ✓ **Soybean**
- ✓ **Sorghum**
- ✓ **Wheat**
- ✓ **Coffee**
- ✓ ***Cajanus cajan***
- ✓ **Rose**
- ✓ **Onion**
- ✓ ***Stenophatum***
- ✓ **Grape**
- ✓ **Apple**
- ✓ **Apple Root Stock**
- ✓ ***B. brizantha, decumbens, humidicola,ruzizien-sis*/interspecific hybrids**
- ✓ **Penisetum**
- ✓ **Paspalum**
- ✓ **Lettuce**
- ✓ **Carrot**
- ✓ **Crisanthemun**
- ✓ **Mango**
- ✓ **Tomato**
- ✓ **Eucaliptus**
- ✓ ***Zoysia***

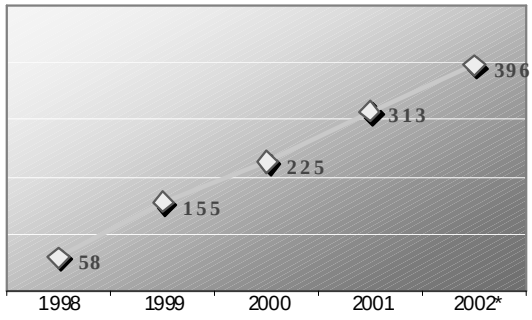
Slide 5

## Agricultural Varieties Protection 20/09/02

| Species | Number of entries | Status | | |
|---|---|---|---|---|
| | | In Analysis | Provisional Certificate | Certificate |
| Cotton | 36 | 2 | 12 | 17 |
| Rice | 31 | 1 | 3 | 25 |
| Potato | 44 | 2 | 7 | 22 |
| Sugar cane | 41 | 0 | 5 | 36 |
| Corn | 22 | 1 | 1 | 20 |
| Soybean | 217 | 6 | 13 | 170 |
| Sorghum | 8 | 0 | 3 | 5 |
| Wheat | 39 | 2 | 7 | 32 |
| TOTAL | 438 | 14 | 51 | 327 |

Slide 6

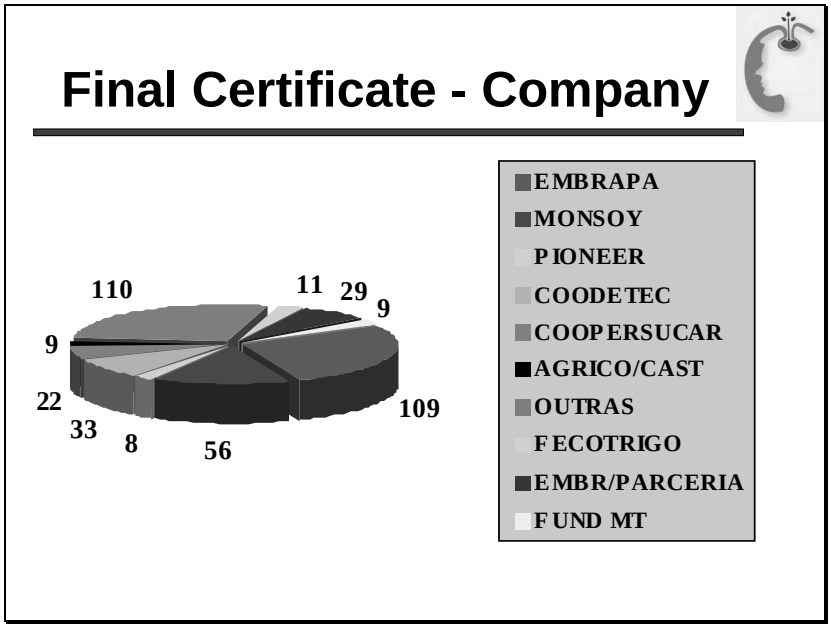
## Number of Protected Plant Varieties (1998 - 2002)



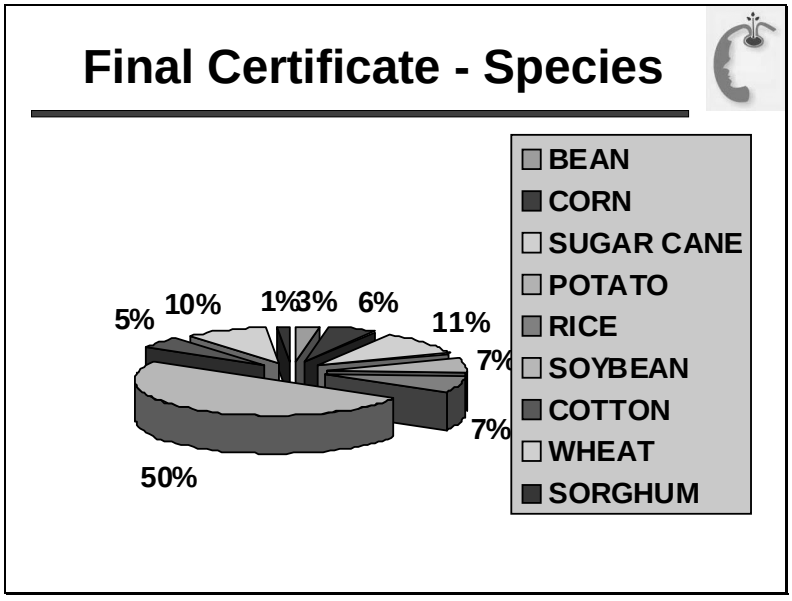

Fonte: SNPC/MAPA

Parcialaté 20/09/02

Slide 7

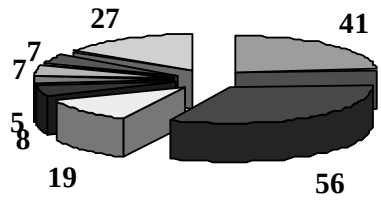



Slide 8



Slide 9

## SOYBEAN CERTIFICATES COMPANIES




- EMBRAPA
- MONSOY
- CODETEC
- PIONNER
- MILENIA
- FUND. MT
- COOPADAP
- EMBRAPA/PARCEIROS

Slide 10

## Productivity Growth for Selected Products

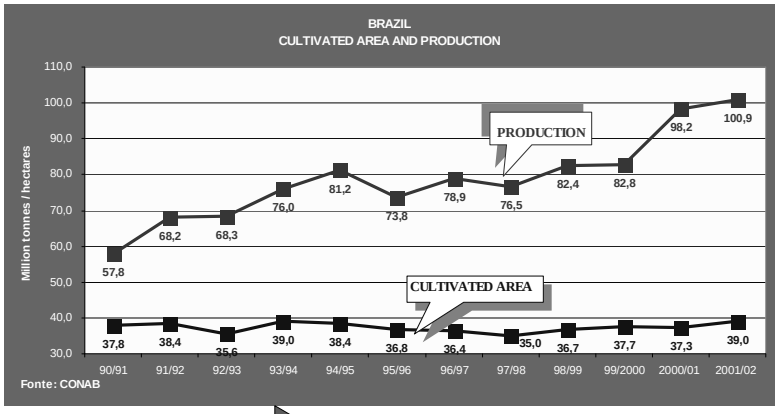
| CULTURES | 94/95 | 2001 / 2002 | variation (%) |
|---|---|---|---|
| COTTON | 1.249 | 2.757 | 121 |
| PEANUT | 1.497 | 2.147 | 43 |
| WHEAT | 1.474 | 1.867 | 27 |
| SOYBEAN | 2.221 | 2.679 | 21 |
| RICE | 2.633 | 3.376 | 28 |
| CORN | 2.622 | 3.226 | 23 |
| BEANS | 573 | 983 | 72 |
| Average | 2.115 | 2.587 | 22 |

kg/ha

SOURCE: CONAB - Dec, 2001.

Slide 11

## Evolution of Productivity in Grain Production




90-91/2001-2002 **Productivity : + 70%**

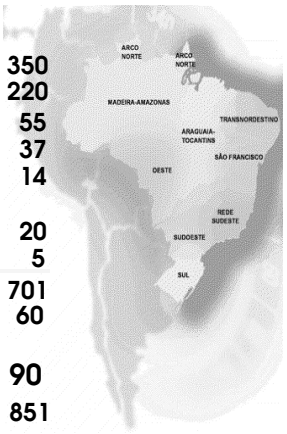
Slide 12

## Use of Land in Brazil - Potential

*TERRITORIAL DISTRIBUTION - ESTIMATE*

In million ha

| | |
|---|---|
| AMAZON RAIN FOREST | 350 |
| BREEDING PASTURES | 220 |
| PROTECTED AREAS | 55 |
| ANNUAL CULTURES | 37 |
| PERMANENT CULTURES | 14 |
| CITIES, TOWNS, LAKES, ROADS AND SWAMPS | 20 |
| CULTIVATED FORESTS | 5 |
| | 701 |
| Other uses | 60 |
| UNEXPLOITED AREA STILL AVAILABLE FOR AGRICULTURE | 90 |
| TOTAL | 851 |



Slide 13


[End of Annex III and of document]