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# INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

## TECHNICAL COMMITTEE

**Thirty-Eighth Session  
Geneva, April 15 to 17, 2002**

### PUBLICATION OF VARIETY DESCRIPTIONS

*Document prepared by the Office of the Union*

1. At its thirty-seventh session, held in Geneva from April 2 to 4, 2001, the Technical Committee (hereinafter referred to as “the Committee”) discussed various aspects concerning the publication of variety descriptions. In particular, it highlighted the practical difficulties in considering varieties of common knowledge in the DUS test and noted the potential benefits of inclusion of variety description information on the UPOV -ROM. It requested that these aspects be considered by the Administrative and Legal Committee (hereinafter referred to as “the CAJ”) during its discussions on this matter.
2. At its forty-third session held on April 5, 2001, the CAJ considered document CAJ/43/5, together with the comments of the Committee, and agreed that, in conjunction with additional comments at the session, this formed an appropriate basis on which the Office of the Union (hereinafter referred to as “the Office”), with the help of the *Ad hoc* Working Group on the Publication of Variety Descriptions (hereinafter referred to as “the Working Group”), should proceed.
3. The Office, in conjunction with the Working Group, prepared a project proposal for consideration by the CAJ at its forty-fourth session held on October 22 and 23, 2001 (documents CAJ/44/4 and CAJ/44/4 Add.). The project, as agreed by the CAJ in the session, is presented as an Annex to this document.

4. The project identifies two main aspects to be developed. Firstly, it establishes the need for a model study to investigate and develop solutions to the technical issues concerning the possible development and publication of variety descriptions, at the international level, in an effective way. Secondly, it notes that there are important legal, administrative and financial issues which would need to be resolved, by the CAJ, before considering the possible introduction of an international system for the publication of variety descriptions. Regarding the model study, the proposal is that the Committee and its Technical Working Parties (hereinafter referred to as “the TWPs”) should be invited to develop the technical aspects, whilst the Working Group has been requested to develop a “test publication” of standardized variety description produced in the model study.

5. The particular technical aspects which would need to be developed for the model study have been identified as (see Annex: section 6.1.1, “Technical Aspects”):

(a) propose a short list of species, according to need (see Annex: section 3.1, “Prioritization of Species”) and ability to develop effective harmonized variety descriptions (see Annex: section 3.2, “Nature of Variety Descriptions”), on which the model study would be based;

(b) identify which members of the Union and other interested parties (see Annex: section 4.1.2, “Access to ‘Published’ Variety Descriptions”) would wish to contribute to the model study for each species;

(c) identify those UPOV Test Guidelines characteristics which may have useful discriminatory power from documented descriptions produced at different locations (see Annex: section 3.2.2, “Influence of the Environment on the Expression of a Characteristic”);

(d) consider the possibility of developing standardized states of expression (i.e. standardized descriptions) for UPOV Test Guidelines characteristics with useful discriminatory power (see Annex: section 3.2.1, “Harmonized Examination and Recording of Characteristics”), for all varieties of a species, or a defined group of varieties within a species. As far as possible, this standardization should encompass all contributors to the study, including non-members of the Union. In the case of a variety grouping, the group should be clearly defined;

(e) consider how standardization of variety descriptions can be maintained over time;

(f) consider what, and how, other relevant information (see Annex: section 3.4, “Inclusion of Information Related to the DUS Examination”) might be provided with a variety description.

*6. The Committee is invited to consider how to address these aspects in the development of a model study.*

[Annex follows]

ANNEX

**PROJECT TO CONSIDER**

**THE PUBLICATION OF VARIETY DESCRIPTIONS**

as agreed by the Administrative and Legal Committee at its forty -fourth session  
on October 22, 2001

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## 1. AIM OF THE PROJECT

The aim of the project is:

- (a) to increase the availability of variety description information to interested parties (i.e. DUS examiners, breeders and maintainers of varieties of common knowledge) and thereby to maximize the effectiveness of the examination of distinctness; and
- (b) to use appropriate elements of the variety description, in the process of examining distinctness, to eliminate varieties which do not require further comparison and to identify those varieties against which a further comparison is required.

## 2. BACKGROUND

1. The discussions in the Administrative and Legal Committee (hereinafter referred to as “the CAJ”) identified the need for a model study to investigate and develop solutions to the technical issues concerning the possible development and publication of variety descriptions, at the international level, in an effective way. At the same time, it was noted that there were important legal, administrative and financial issues which would need to be resolved before considering the possible introduction of an international system for the publication of variety descriptions. This proposal seeks to develop an approach for both the model study and these wider issues. However, to clarify the issues and aid discussion, these two aspects are developed separately, whilst recognizing that all aspects must be resolved before any proposal can be considered for introduction.

## 3. MODEL STUDY

2. In developing the model study, it is necessary to address all important aspects in the establishment and publication of variety descriptions which are meaningful at an international level. As explained in document CAJ/43/5, the study will need to address the species for which there is a highest priority, the nature of the variety description, method of publication and inclusion of information related to the DUS examination.

### 3.1 Prioritization of Species

3. Prioritization of species should first take account of whether effective descriptions can be developed. Whilst it would be preferable to select species for which descriptions could be compared on a global basis, it may also be appropriate to work on some species where the descriptions would only be effective for comparisons at a regional level.

4. Those species where there is greatest need for publication of internationally harmonized descriptions are, in general, those where it is difficult and/or costly to maintain all varieties of common knowledge in physical collections, e.g. where

- (a) varieties are grown in many countries;
- (b) there are a large number of varieties of common knowledge;
- (c) varieties of common knowledge are not easily accessible, e.g.
  - (i) varieties which are only known at a local or regional level,
  - (ii) quarantine restrictions prohibit the introduction of test material into the DUS testing location,
  - (iii) applicants place restrictions on the distribution of material, submitted for DUS testing, to other authorities;
- (d) there is no comprehensive, internationally centralized DUS testing system in place at present.

### 3.2 Nature of Variety Descriptions

5. In order to clearly distinguish a candidate variety from a variety of common knowledge, on the basis of a documented description of the variety of common knowledge, it is important that the characteristics recorded in the description would have the same states of expression when produced by separate examinations, or that the variation in the states of expression would be within a range which would allow discrimination with the application of a suitable safety margin. For example, the expression of a certain characteristic may vary between states 2 and 4, when examined by separate authorities, as a result of environmental variation. However, despite this variation, it may be possible to use this characteristic for identifying varieties which may not be clearly distinguishable. In this case, any variety with a state of expression not more than two states different for that characteristic may be considered not to be clearly distinguishable and would be subject to further consideration for distinctness.

6. The variation in states of expression for a characteristic can result from two main sources. Firstly, the expression of the characteristic may be influenced by the environment and, secondly, the characteristic might not be examined or recorded in a harmonized way.

#### 3.2.1 *Harmonized Examination and Recording of Characteristics*

7. The most important means of ensuring that a characteristic is examined and recorded in a harmonized way is to require that this is done in accordance with the relevant UPOV Test Guidelines (“Test Guidelines”). It should also be remembered that only asterisked characteristics in the Test Guidelines can, in general, be assumed to be recorded by all UPOV testing authorities.

8. Furthermore, it is important that the example varieties used in the Test Guidelines are used as the reference for standardizing states of expression or, if these are not currently appropriate, they should be updated, or alternatively, a separate set of reference varieties agreed. It should be recognized that there is a high probability that the UPOV Test Guidelines’ example varieties have not been used universally as the reference for states of expression and one necessary step in the model study may be to identify the individual

reference varieties used by the testing authorities and then to calibrate the states of expression to produce harmonized descriptions.

9. In some cases it is recognized that there are fundamental differences between varieties, of the same species, which have been developed for different regions or purposes. In such circumstances it would not be necessary to seek to standardize descriptions through common example, or reference varieties, since the different varieties within these groups could be considered to be distinct without the need for individual comparison. However, it would be important to be able to clearly define such groups to allow this judgement on distinctness.

10. In order for Test Guidelines to address distinctness as effectively as possible, it is important to seek to harmonize characteristics with organizations, such as the International Plant Genetic Resources Institute (IPGRI), which may also produce descriptions for varieties of common knowledge.

### *3.2.2 Influence of the Environment on the Expression of a Characteristic*

11. The potential influence of the environment on the expression of a characteristic depends on the type of expression of the characteristic.

#### 3.2.2.1 Qualitative Characteristics

12. Qualitative characteristics are those whose expression is independent of the environment. On this basis, they are ideal for use in published variety descriptions. However, it should be noted that there are, in general, very few of these characteristics and, therefore, reliance on qualitative characteristics alone would not produce effective descriptions.

#### 3.2.2.2 Quantitative and Pseudo-Quantitative Characteristics

13. The expression of quantitative and pseudo-quantitative characteristics will be influenced by the environment. This means that it will not be possible to compare varieties directly using the states of expression in such characteristics, where these have been determined at different locations, without considering the variation due to environment. However, it might be possible to investigate the degree of variation due to environment and on this basis introduce a suitable margin to ensure that any differences in states of expression between variety descriptions could not be due, entirely, to environmental effects. Clearly, an investigation of each characteristic and the degree of environmental influence would be an important pre-requisite for the use of these characteristics in comparing candidates with varieties of common knowledge. It should also be recognized that the influence of the environment, for the same characteristic, may vary between varieties. It is possible that investigations could be undertaken within the UPOV Technical Working Party structure and perhaps such information might be taken into account when producing, or revising, UPOV Test Guidelines and, in particular, for selecting asterisked characteristics. Ultimately, the results might be annexed to the relevant Test Guidelines. The Technical Working Party for Agricultural Crops (TWA) is currently conducting an investigation on spring barley, winter wheat and oilseed rape.

### 3.3 Method of Publishing and Using Variety Descriptions

14. The method of publishing variety descriptions will need to enable the information to be easily input by contributors and equally easily accessed internationally in a way which enable the user to process the information effectively.

*Illustrative Example:*

This section is only intended to provide an illustration of how descriptions produced from UPOV characteristics have potential to be used in a database. It would be premature to anticipate how the information might be used until the model study had been conducted.

(i) Perhaps the most obvious way of publishing variety descriptions, for ease of processing, is to record the state of expression for each selected characteristic using the 1-9 scale produced in the Test Guidelines. It is acknowledged that many authorities use actual recorded data, or a direct visual comparison, for comparing varieties and the 1-9 scale is produced solely for the purpose of establishing a variety description. However, this variety description is presented in a standardized way and, therefore, does provide a sensible starting point. Furthermore, if this would significantly improve the value of the description, it may also be possible in some characteristics to refine the 1-9 scale to 1 decimal point, but only if the raw measured data, and reliability of the characteristic, made this appropriate.

(ii) The advantage of the 1-9 scale is that the description of a variety, using the selected characteristics, could be represented digitally in a single field and even as a bar code. For example, if it was agreed that descriptions would be developed using 8 characteristics and the state of expression presented on the 1-9 scale for each variety was as follows:

UPOV Test Guidelines Characteristic Number (TG/XX/Y)							
1	3	5	6	14	15	20	32

	State of Expression (1-9)							
Variety A	8	7	6	6	1	2	7	5
Variety B	5	2	4	*	8	9	5	4
etc.								

\* Characteristic not recorded.

then the varieties could be simply described as:

- Variety A: 87661275
- Variety B: 524\*8954.

(iii) This approach may be particularly useful when considering the mechanism for publishing variety descriptions. The UPOV -ROM already has a field created for variety description and the use of such a code might allow a description to be introduced without the development of a new system. However, there may be more effective means of providing variety descriptions and in the medium to long term, it is clear that it would be important to investigate a web-based system for publication of variety descriptions to ensure the most effective means of access.



15. In theory it might be possible for UPOV to develop specific guidance on the level of difference in the description of a characteristic which could be used to consider two varieties to be distinct. However, whilst this would be straightforward for a qualitative characteristic, it is unlikely to be achievable for most other characteristics, because of the variables described above.

16. The decision on how, and whether, to use the variety descriptions in the examination of distinctness would be a matter for each Testing Authority. For example, a Testing Authority might choose to place more reliance on descriptions produced in locations with similar geographical climatic conditions, or produced most recently. Furthermore, it is likely that more than one description will be available for the same variety, requiring a decision on whether to choose a selected description(s) or combine descriptions. For these reasons it would be important for each description to be provided and published with supplementary information such as the origin of the data and date of description.

17. Notwithstanding the need for each Testing Authority to make its own decision on how to utilize the information, it may be possible, within UPOV, on the basis of methods developed in response to the results of the questionnaire envisaged in section 6.2.1, to develop a framework system for handling the information based on customized decisions for each Testing Authority. This might then be available to those Testing Authorities, or other users, who did not wish to develop their own system.

### 3.4 Inclusion of Information Related to the DUSE Examination

18. In addition to the publication of the variety description, it may also be appropriate to consider providing other relevant information, such as the criteria used for variety grouping/ selecting the most similar varieties, together with the most similar variety(ies) and basis for distinctness for each new variety.

## 4. ADMINISTRATIVE, LEGAL AND FINANCIAL CONSIDERATIONS

19. Discussions within the CAJ have highlighted a number of administrative, legal and financial aspects which must be addressed before a system of publishing variety descriptions could be introduced. Possible approaches for addressing these aspects are developed below.

### 4.1 Administrative and Legal Considerations

#### 4.1.1 *Legal Impediments*

20. It is clear that the possibility of legal difficulties to the publication of variety descriptions will depend on the circumstances for each member of the Union; however, there is no provision in the UPOV Convention which prevents the publication of descriptions, and some members of the Union have already adopted this approach. Therefore, it will be a matter for each member of the Union to consider if they have any legal impediment (e.g. issues surrounding “ownership” of the variety description) to the publication of variety descriptions, at a national or international level. Such consideration may depend on the scope of access.

#### 4.1.2 Access to "Published" Variety Descriptions

21. The purpose of the publication of descriptions is to provide all interested parties, in the international community, with an opportunity to ensure that a variety, considered eligible for protection, is clearly distinguishable from all varieties whose existence is a matter of common knowledge. Such parties will include other authorities (i.e. those not conducting the DUS examination on the candidate variety), breeders, genetic resource centers and the maintainers of "landrace" varieties. The contribution of variety descriptions for international publication would, therefore, need to be on this basis.

#### 4.1.3 Responsibility for Accuracy of Published Variety Descriptions

22. Where variety descriptions are published in a centralized or coordinated way, for example a central database published by UPOV, it would be important to be clear that, as is currently the case with the UPOV -ROM, the contributors of the data would be responsible for the accuracy of the data they provided.

23. In the case of the existing information on the UPOV -ROM there are no particular technical difficulties with the interpretation of data. However, as explained in section 3.2, "Nature of Variety Descriptions," in order for descriptions to be effective, there is a need to understand the variations in descriptions which can arise due to environmental variables. The responsibility for use of published variety descriptions would need to remain with the users. However, it may be appropriate to consider a mechanism for annexing information on the level of variation, within individual characteristics, to the relevant Test Guidelines.

## 4.2 Financial considerations

24. It is recognized that there is significant cost in the development and operation of a database of variety descriptions and it might be appropriate to charge a fee for access to a variety description. In considering this, it will be necessary to establish the basis of the fee.

#### 4.2.1 Basis for Access Fee

25. It is clear that the development of variety descriptions is work which is a part of the DUS examination. In many cases, the cost of the DUS examination is entirely covered by the fees paid by the applicant and, in such cases, it may be inappropriate to charge other applicants for developing the same description. Nevertheless, regardless of whether the cost of producing the description has already been covered, there will be some administrative costs in submitting the data for publication. It will be necessary to decide whether such administrative costs should be covered by an access charge, whether it could be accepted that the costs and benefits for each participant would be sufficiently balanced that no charge be required, or whether an additional benefit may be expected which is available to cover the operation cost of the database.

#### 4.2.2 Mechanism for Charging Access Fee

26. Regardless of the basis for any possible fee (i.e. the cost of producing the descriptions or the cost of administering the system), it would be necessary to have a practical mechanism for levying this fee without a heavy administrative burden and cost.

27. The nature of a fee might be an initial charge for access to the entire database, such as the subscription charge to the UPOV -ROM. This would be simple to administer but would fail to make any discrimination between subscribers making heavy use of the data and those only very occasional users. If the fee was substantial, it might also inhibit access by interested parties, which would not be consistent with the overall intention of the publication.

28. A more appropriate basis for a fee might be to charge users each time they “use” a variety description. This would be possible if the database of variety descriptions did not, initially, identify the variety with its description. For example, a user would probably be searching to see if there are any varieties which are not clearly distinguishable from a variety of interest (e.g. a candidate variety for an authority, or in the case of a breeder, one of his own protected varieties). The user would only be interested in those varieties which could not be clearly distinguished from the variety of interest. Those varieties which were clearly distinguishable would be of no interest and it would not even be necessary to know the identity (name) of these varieties. However, the user would need to know the identity of similar varieties in order that he could investigate these further, e.g. to obtain a seed sample for direct comparison with his variety of interest. It would therefore be effective to charge a fee for naming the varieties with descriptions of interest. This approach would be difficult to develop where the descriptions were provided in the form of a UPOV -ROM, but would be possible for a web -based system by using an automated “downloading” charge.

## 5. PUBLICATION OF VARIETY INFORMATION

29. The development of a centralized database of variety descriptions would also establish a base for providing other forms of variety information which might be of value for breeding progress. For example, inclusion of the agronomic performance of varieties may offer a valuable service to the breeding community.

## 6. CONCLUSIONS AND WORK PLAN

30. Consideration of the various aspects concerning the publication of variety descriptions has identified a number of issues which need to be addressed. It is proposed that these might be addressed according to the work plan proposed below.

### 6.1 Development of a Model Study

#### 6.1.1 *Technical Aspects*

31. The main purpose of the model study would be to address the technical difficulties in developing and publishing variety descriptions in an effective way. It is, therefore, proposed that the Technical Committee and its Technical Working Parties be asked to develop the following aspects of a model study:

(a) Propose a short list of species, according to need (see section 3.1, “Prioritization of Species”) and ability to develop effective harmonized variety descriptions (see section 3.2, “Nature of Variety Descriptions”), on which the Model Study would be based.

(b) Identify which members of the Union and other interested parties (see section 4.1.2, “Access to ‘Published’ Variety Descriptions”) would wish to contribute to the model study for each species.

(c) Identify those UPOV Test Guidelines characteristics which may have useful discriminatory power from documented descriptions produced at different locations (see section 3.2.2, “Influence of the Environment on the Expression of a Characteristic”).

(d) Consider the possibility of developing standardized states of expression (i.e. standardized descriptions) for UPOV Test Guidelines characteristics with useful discriminatory power (see section 3.2.1, “Harmonized Examination and Recording of Characteristics”), for all varieties of a species, or a defined group of varieties within a species. As far as possible, this standardization should encompass all contributors to the study, including non-members of the Union. In the case of a variety grouping the group should be clearly defined.

(e) Consider how standardization of variety descriptions can be maintained over time.

(f) Consider what, and how, other relevant information (see section 3.4, “Inclusion of Information Related to the DUSE Examination”) might be provided with a variety description.

### 6.1.2 Test Publication

32. At the same time, the *Adhoc* Working Group on the Publication of Variety Descriptions (hereinafter referred to as “the Working Group”) <sup>1</sup> should develop a “test publication” of these standardized variety descriptions, produced in the model study, to address the issues raised in section 3.3, “Method of Publishing and Using Variety Descriptions.” This test publication would be only for contributors to the model study or other authorized participants, for example, in the form of a special edition UPOV-ROM or restricted access site on the UPOV Website. However, it should be used to test the usefulness of the descriptions and to identify the appropriate method of publication (i.e. UPOV-ROM, web-based system, etc.) prior to the introduction of any UPOV approved system.

### 6.1.3 Systems for Utilizing Variety Descriptions

33. The Working Group should also be invited to explore possible systems for utilizing published variety descriptions in the process of examining distinctness (see section 3.3, “Method of Publishing and Using Variety Descriptions,” paragraph 17) and report on their merits.

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<sup>1</sup> Members of the *Adhoc* Working Group on the Publication of Variety Descriptions:

Chairman CAJ	
Ms. Bustin	(France)
Mr. Deneken	(Denmark)
Mr. Guiard	(France)
Mr. Kiewiet/Mr. Elena	(CPVO)
Mr. Waterhouse	(Australia)
Mr. Button	(Office of the Union)

## 6.2 Administrative, Legal and Financial Considerations

34. The following proposal is made for consideration of administrative, legal and financial issues:

### 6.2.1 *Questionnaire*

35. The Working Group should develop a questionnaire for members of the Union, to be issued by the Office, relating to information on legal and administrative issues. This questionnaire, for example, might include a request for members of the Union to advise if:

(a) they currently publish variety descriptions and, if so, by what means and whether a fee is charged;

(b) they would have any legal difficulties associated with the publication of variety descriptions via a centralized international database, with access for all interested parties as identified in section 4.1.2 “Access to ‘Published’ Variety Descriptions”;

(c) the cost of the production of a variety description, for a variety submitted for DUS examination, is entirely borne by the applicant;

(d) they decided to contribute their variety descriptions to a centralized database, the member of the Union would wish to charge a fee for access to their variety description and if so, on what basis;

(e) they might be prepared to accept an access fee to the database with a view to potential economies in the maintenance of reference collections.

### 6.2.2 *Responsibility for Submitted Data*

36. The CAJ is to consider if the responsibility for the accuracy and formatting of data submitted to a central database would be the sole responsibility of the contributor.

### 6.2.3 *Responsibility for Use of Data*

37. The CAJ is to consider if the use of the data would be the sole responsibility of the user, whilst accepting that a model system might be developed within UPOV.

### 6.2.4 *Inclusion of Other Variety Information*

38. The CAJ is to consider if the Working Group should be asked to consider the possibility of including other variety information in any centralized database (see section 5, “Publication of Other Variety Information”).

[End of Annex and of document]