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GENEVA

Associated Document
to the
General Introduction to the Examination
of Distinctness, Uniformity and Stability and the
Development of Harmonized Descriptions of New Varieties of Plants (document TG/1/3)

DOCUMENT TGP/4

"CONSTITUTION AND MAINTENANCE

OF VARIETY COLLECTIONS"

adopted by the Council
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SECTION 1: INTRODUCTION

1.1 Article 7 of the 1991 Act of the UPOV Convention establishes that "a variety shall be deemed to be distinct if it is clearly distinguishable from any other variety whose existence is a matter of common knowledge at the time of the filing of the application."

1.2 The "General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants" (document TG/1/3), hereinafter referred to as the "General Introduction", states, with respect to common knowledge (see Chapter 5.2.2), that:

> "Specific aspects which should be considered to establish common knowledge include, among others:
>
> (a) commercialization of propagating or harvested material of the variety, or publishing a detailed description;
>
> (b) the filing of an application for the grant of a breeder's right or for the entering of a variety in an official register of varieties, in any country, which is deemed to render that variety a matter of common knowledge from the date of the application, provided that the application leads to the grant of a breeder's right or to the entering of the variety in the official register of varieties, as the case may be;
>
> (c) existence of living plant material in publicly accessible plant collections.
>
> Common knowledge is not restricted to national or geographical borders."

Further information on varieties whose existence is a matter of common knowledge ("varieties of common knowledge") is provided in document TGP/3 "Varieties of Common Knowledge" (document TGP/3).

1.3 Although not exhaustive, and taking into account that these aspects have to be considered on a worldwide basis, it is clear that the list of varieties of common knowledge for a given species can be very large. Therefore, it may be useful to employ a process to reduce the number of varieties of common knowledge which need to be included in growing trials or other tests for direct comparison against a variety which is the subject of an application for plant breeders' rights ("candidate variety"). That process can be summarized in the following steps:

Step 1: Making an inventory of the varieties of common knowledge;
Step 2: Establishing a collection ("variety collection") of varieties of common knowledge which are relevant for the examination of distinctness of candidate varieties according to Section 2 "Constitution of Variety Collections" of this document;
Step 3: Selecting the varieties from the variety collection which should be included in the growing trial or other tests for the examination of distinctness of a particular candidate variety.

The identification of varieties of common knowledge which should be included in the variety collection (Step 1) and the establishment of a variety collection (Step 2) are addressed below. The use of the variety collection to select varieties to be included in the growing trial or other

tests, is addressed in document TGP/9 "Examining Distinctness" (document TGP/9/1), Section 2: Selecting Varieties for the Growing Trial.

1.4 The following sections address two main aspects of variety collections. Section 2 "Constitution of Variety Collections", considers the identification of varieties of common knowledge for inclusion in the variety collection. Section 3 "Maintenance of Variety Collections" provides guidance concerning the maintenance of descriptions and living plant material in the variety collections and information on cooperation in the maintenance of variety collections. For the purposes of this document, maintenance of living plant material refers to the way the living plant material is maintained in storage (e.g. seed) or under cultivation (e.g. vegetatively propagated varieties).

1.5 The organizer of a variety collection is referred to as a "variety collector" in this document.

SECTION 2: CONSTITUTION OF VARIETY COLLECTIONS

2.1 Forms of variety collection

A variety collection may comprise variety descriptions and, where necessary, living plant material.

2.1.1 Variety Descriptions

2.1.1.1 The following forms of variety description might be included in the variety collection:

(i) a full description according to the UPOV Test Guidelines produced by the member of the Union establishing the variety collection: where used, this provides the possibility to detect the most similar varieties on the basis of the data, held in a database, which have all been collected from the same location. However, in the case of very similar varieties, it is still necessary to have a direct side-by-side comparison of the varieties;

(ii) a full description according to the UPOV Test Guidelines which has not been produced by the member of the Union establishing the variety collection: this might be a satisfactory basis on which to exclude varieties in the variety collection from a direct comparison against the candidate variety in a growing trial or other test, if the differences are sufficiently clear. In the case of similar varieties, the environmental effect on the expression of characteristics is such that, in general, this is likely not to be a satisfactory basis for excluding varieties from the growing trial or other tests;

(iii) a short description produced by another member of the Union where the variety is registered: in general, this type of description may be helpful for grouping of similar varieties in the growing trial or other tests where the description is based on grouping or Technical Questionnaire characteristics, but may not be very helpful for excluding varieties from the growing trial or other tests;

(iv) images (e.g. photographs, illustrations or digitalized images) of representative parts of the plants of each variety;

(v) relevant descriptive information from, for example, scientific publications, commercial catalogues, databases, etc.

2.1.1.2 Document TGP/9/1, Section 2 explains how descriptions of the varieties in the variety collection can be used for selecting varieties to be included in the growing trial. The source of the information, the completeness of the variety descriptions and the susceptibility of the characteristics to the environmental conditions will have a bearing on the usefulness of variety descriptions for that purpose. Consultation of plant experts may enable the completeness of the information to be improved.

2.1.2 Living Plant Material

2.1.2.1 As explained in Section 2.1.1 documented descriptions can provide information to assist with the grouping of varieties and reducing the number of varieties of common knowledge which need to be included in a growing trial. The most effective means of examining distinctness is to conduct a growing trial or other test containing the candidate

variety and the relevant varieties of common knowledge. This requires that living plant material is available.

2.1.2.2 In some cases, the variety collector may collect and maintain living plant material of varieties in the variety collection. However, in other cases, for example, the variety collector may only obtain living plant material of varieties as and when those varieties need to be included in growing trials or other tests.

2.1.2.3 There are several factors which may influence the choice of whether to establish a collection of living plant material for a given species. For example:

(i) the value of having a standard, verified source of living plant material ready for inclusion in the growing trial or other tests at the appropriate time;

(ii) the cost and facilities needed to store and maintain living plant material;

(iii) type of living plant material to be stored: seed is, in general, easier to maintain and to store for long periods than vegetatively propagated material;

(iv) type of species: in annual species it is necessary either to store propagating material or to renew it every year. The whole collection need not necessarily be grown every year; instead, only those varieties which are relevant for the candidate varieties under examination may be included in the growing trial or other tests. In perennial species, the collection of living plant material could be in the form of whole plants in the field;

(v) Government regulations concerning the movement of living plant material (e.g. phytosanitary regulations, legislation concerning the protection of the environment, human and animal health, etc.).

2.2 Factors to be considered for inclusion of a variety in a variety collection

When establishing a variety collection it is necessary to decide first on the range of the collection and then to identify the varieties of common knowledge which are covered by that range. It is important to note that a variety collection cannot be established definitively. The variety collection needs to be continuously updated taking into account the evolution of lists of varieties of common knowledge, the development of new types or groups of varieties and the introduction of new plant genetic material, and needs to be reviewed in relation to each new candidate variety. Candidate varieties should also be considered for inclusion in a variety collection (see Section 2.2.2.1 (ii)).

2.2.1 Range of the variety collection

2.2.1.1 A variety collection may encompass a whole species, or more than one species if there are interspecific hybrids, or may be limited to a subspecies or to types of varieties or groups of varieties within a species or subspecies. In this document, “type of variety” means that varieties of that type have a common trait, or traits, often physiological traits (e.g. long/short day varieties), by which they are recognized beyond the purposes of the examination of DUS. The term “group of varieties” means a grouping of varieties specifically for the purposes of the examination of distinctness (e.g. 2-row/6-row ear type in barley).

2.2.1.2 With regard to types of varieties, the following factors might be relevant:

(i) recognition of different types of varieties within the relevant UPOV Test Guidelines, or by the establishment of separate UPOV Test Guidelines for different variety types within, for example, the same species;

(ii) the variety collection might be limited by taking into account certain physiological traits of the varieties (e.g. earliness, day length susceptibility, frost resistance, etc.), for example according to the climatic conditions for which those varieties are adapted.

2.2.1.3 With regard to groups of varieties, the General Introduction, Chapter 5.3.1.1, states the following:

> "It is necessary to examine distinctness in relation to all varieties of common knowledge. However, a systematic individual comparison may not be required with all varieties of common knowledge. For example, where a candidate variety is sufficiently different, in the expression of its characteristics, to ensure that it is distinct from a particular group (or groups) of varieties of common knowledge, it would not be necessary for a systematic individual comparison with the varieties in that group (or those groups)."

2.2.1.4 The General Introduction, Chapter 8.1, states that "Different groups of varieties within a species can be dealt with in separate or subdivided Test Guidelines if the categories can be reliably separated on the basis of characteristics suitable for distinctness, or where an appropriate procedure has been developed to ensure that all varieties of common knowledge will be adequately considered for distinctness". Document TGP/7 "Development of Test Guidelines" (document TGP/7/1, Annex 3: GN 4) clarifies that this "explanation is provided to ensure that groups or types of varieties are only created where it is possible to ensure that a variety will be clearly placed into the appropriate group [or type], or if not, that other measures are taken to ensure that all varieties of common knowledge are considered for distinctness."

2.2.1.5 In the case of hybrid varieties, the examination of distinctness may include examination of the components and the formula of the hybrid (see document TGP/9/1). If it is decided to use this approach in the examination of hybrids, the variety collection should include all varieties used as components (generally inbred lines) of all the hybrid varieties included in the variety collection, as well as varieties of common knowledge in the variety collection in their own right.

2.2.2 Making an inventory of varieties of common knowledge for inclusion in the variety collection

2.2.2.1 The following should, in particular, be taken into account with regard to making an inventory of varieties of common knowledge for inclusion in the variety collection:

(i) the list of protected varieties and the official, or other, registers of varieties. The variety collection should include varieties in those lists and varieties previously included in those lists;

(ii) the list of varieties which are the subject of an application for protection or official registration. Article 7 of the 1991 Act of the UPOV Convention states that:

> " … In particular, the filing of an application for the granting of a breeder's right or for the entering of another variety in an official register of varieties, in any country, shall be deemed to render that other variety a matter of common knowledge from the date of the application, provided that the application leads to the granting of a breeder's right or to the entering of the said other variety in the official register of varieties, as the case may be."

Thus, varieties which are the subject of such an application should be included in the variety collection. In that respect, authorities should check information on varieties for which such an application has been filed with other authorities. It is of particular importance to facilitate the exchange between authorities of information contained in their publications, including by means of the UPOV-ROM Plant Variety Database;

(iii) any commercial document in which varieties are marketed as propagating or harvested material, especially when there is no official registration system;

(iv) any list including varieties which are publicly available within plant collections (varieties included in genetic resource collections, collection of old varieties, etc.);

(v) information provided by relevant plant experts;

(vi) relevant example varieties used for the examination of distinctness (for more information about example varieties see document TGP/7/1, Annex 3: GN 26.

2.2.2.2 As stated in Section 1.2, common knowledge is not restricted to national borders. In addition to the territory of the member of the Union concerned, particular consideration should be given to:

(i) territories where plant material of the type and species concerned is traded;

(ii) territories with which the member of the Union concerned has a relationship for breeding activities, seed trade or any exchange of plant products and which have similar climatic and growing conditions;

(iii) other territories where examination of distinctness is conducted for the type and species concerned.

2.2.2.3 The process of identifying varieties of common knowledge for inclusion in the variety collection requires appropriate knowledge of varieties of common knowledge and the requirements for distinctness and it is recommended that, where necessary, guidance is sought from relevant experts, particularly experienced DUS examiners.

2.3 Varieties of common knowledge not included in the variety collection or for which living plant material is not available

2.3.1 As explained in Section 2.2, a variety collection cannot be established definitively and may not contain all varieties of common knowledge which could be relevant for the examination of distinctness. In addition, there may be situations where the authority cannot obtain living plant material of a variety included in the variety collection. To address such situations the General Introduction, Chapter 5.3.1.2, states the following:

> "… certain supplementary procedures may be developed to avoid the need for a systematic individual comparison. For example, the publication of variety descriptions, inviting comment from interested parties, or cooperation between members of the Union, in the form of an exchange of technical information, could be considered as supplementary procedures. However, such an approach would only be possible where the supplementary procedures, in conjunction with the other procedures, provide an effective examination of distinctness overall. Such procedures may also be appropriate for consideration of varieties of common knowledge, for which living plant material is known to exist (see Section 5.2.2) but where, for practical reasons, material is not readily accessible for examination. Any such procedures are set out in document TGP/9, 'Examining Distinctness'."

2.3.2 In addition to the examples mentioned in the General Introduction, the making available of the list of varieties against which candidate varieties have been examined, and the making use of panels of experts, are other examples of supplementary procedures.

2.3.3 The UPOV Convention has a means to address situations where a candidate variety is incorrectly considered to be distinct, in that it requires a breeder's right to be declared null and void if the distinctness requirement was not complied with at the time of the grant of the breeder's right (see Article 21(1)(i) of the 1991 Act and Article 10(1) of the 1978 Act). However, in order to provide high quality protection, such cases should remain the exceptions and establishment of variety collections and supplementary procedures, for addressing distinctness with regard to varieties of common knowledge not included in the variety collection, should be as robust as possible. More information concerning supplementary procedures is provided in Document TGP/9/1, Section 6.

SECTION 3: MAINTENANCE OF VARIETY COLLECTIONS

3.1 General

As explained in Section 2.2, a variety collection cannot be established definitively**.** The variety collection needs to be continuously updated taking into account the evolution of lists of varieties of common knowledge, the development of new types or groups of varieties and the introduction of new plant genetic material, and needs to be reviewed in relation to each new candidate variety. It is necessary to establish contacts with the authorities in different territories to obtain information and to be able to obtain descriptions and living plant material as required. It is also important to complete the variety collection on a case-by-case basis considering the information provided by the applicant, particularly concerning the breeding scheme of the candidate variety. The purpose of the following subsections is to provide guidance on some specific aspects concerning the maintenance of variety collections in the form of variety descriptions and living plant material.

3.1.1 Variety descriptions

With regard to descriptions based on the relevant UPOV Test Guidelines, it is important to note that UPOV Test Guidelines may be revised (see document TGP/7), possibly leading to the introduction of some new characteristics and the deletion of some others from the table of characteristics. Furthermore, the states of expression of a characteristic may be amended. Therefore, descriptions which have been prepared using different versions of the UPOV Test Guidelines for the same species or group of species may not be fully compatible. In these cases, the descriptions should be aligned as far as possible.

3.1.2 Living plant material

3.1.2.1 Introduction

The maintenance of a variety collection of living plant material involves a number of activities, the aim of which is to enable a variety to be ready for inclusion in the growing trial or other tests when examination of distinctness renders it necessary. For the purposes of this document, maintenance of living plant material refers to the way the living plant material is maintained in storage (e.g. seed) or under cultivation (e.g. vegetatively propagated varieties).

3.1.2.2 Sources of living plant material

3.1.2.2.1 Some important potential sources of living plant material are as follows:

(i) Breeder / Maintainer / Applicant;
(ii) Variety collectors in other territories;
(iii) Authorities responsible for an official register (e.g. National List);
(iv) Market;
(v) Plant collections.

3.1.2.2.2 For the purposes of the examination of DUS, UPOV encourages cooperation between variety collectors (see Section 3.2) including, in particular, the exchange of information and living plant material for the examination of distinctness. However, in the particular case of parent lines submitted as a part of the examination of a candidate hybrid variety, living plant material should only be made available to other variety collectors in such

a way that the legitimate interests of the breeder would be safeguarded. Examples of policies and contracts for material submitted by the breeder are provided in document TGP/5 "Experience and Cooperation in DUS Testing" (document TGP/5).

3.1.2.2.3 Variety collectors are important sources of verified living plant material. However, in some circumstances there may be limitations in respect to the amount of material available from such sources. In these situations, small quantities of material can, nevertheless, enable the requesting authority to verify material from other sources before its incorporation in the variety collection.

3.1.2.2.4 Breeders are an important source of living plant material and cooperation with breeders is encouraged (see Section 3.2.3). In particular, for protected varieties, breeders have a particular incentive to maintain their varieties since lack of maintenance of a variety may lead to the cancellation of the plant breeder's right.

3.1.2.3 Verification

3.1.2.3.1 When new living plant material is introduced into the collection, it should, as appropriate, be verified that it conforms to the variety. Inadequate verification of the material of the varieties in the variety collection may lead to an incorrect conclusion on distinctness of candidate varieties, with negative consequences for the plant breeder's rights granted.

3.1.2.3.2 In seed-propagated varieties, for example, the identity of new living plant material can be verified by conducting side-by-side plot comparisons between the material in the collection and the new material. In vegetatively propagated species, the new material can be tested against the variety description and in cases where there are plants in the collection, the verification can be performed before the removal of those plants. In cases where the living plant material is not maintained by the variety collector, or where it is not possible to make a direct comparison with existing material in the variety collection, the material should, where possible, be checked against the description produced by the variety collector or the official description of the variety. In other cases, the material should be checked against other appropriate descriptions, for example plant registers or commercial catalogues.

3.1.2.3.3 It may be appropriate for other features of the new living plant material, apart from identity, to be tested, for example its phytosanitary status, or its viability and germination capacity.

3.1.2.4 Maintenance conditions

3.1.2.4.1 The maintenance requirements depend on the type of living plant material stored: seeds, whole plants, plant tissue in micro-propagation, etc. Appropriate measures should be taken to ensure that, as far as possible, the maintenance conditions do not influence the expression of the characteristics of the variety in the growing tests or other trials in such a way as to affect the assessment of distinctness. For example, in the case of plants maintained by micropropagation, it may be necessary to grow the plants for a sufficient period to ensure that the material of all the varieties in the growing test are at a comparable stage of development.

3.1.2.4.2 In variety collections of trees and non seed-propagated perennial varieties, the plants may be maintained under cultivation. Routine cultural practices, including the selection of rootstocks, should be standardized and applied to all the material in the collection

with the aim of ensuring that distinctness is based on differences in the genotype rather than on differences due to environmental conditions.

3.1.2.5 Updating/renewal

3.1.2.5.1 Keeping the variety collection up-to-date is necessary to ensure its usefulness, the effectiveness of the examination, and the consequent quality of protection granted to a variety. Where appropriate (see Section 2.1.2), living plant material of new varieties of common knowledge should be included in the collection. However, the reason for the inclusion of some varieties already in the collection may be no longer valid; for example, the application for a candidate variety may be withdrawn. In such cases, the varieties should be removed from the variety collection and the living plant material of those varieties should be eliminated.

3.1.2.5.2 With respect to the living plant material already included in the variety collection, there are situations which require the renewal of that material, such as:

(i) when the material originally provided by the applicant was in the quantity needed for DUS examination only, and more material is needed after the examination for long-term storage in the collection;

(ii) when the material in the collection has been depleted or has deteriorated;

(iii) in variety collections of trees and non seed-propagated perennial varieties (see Section 3.1.2.4.2). Observations should be made on plants at the same physiological stage, although the plants may be of different ages. Nevertheless, at some time, the plants may become over-mature (i.e. too old for observations) and need to be replaced.

3.1.2.5.3 A routine procedure for verifying material before its introduction in the collection, whether of new varieties of common knowledge or renewal of material of varieties already included in the variety collection, should be established (see Section 3.1.2.3).

3.1.2.6 Obtaining living plant material only when required for a particular growing trial or other tests

A variety collection may exist as a database of variety descriptions with the necessary living plant material being assembled when required, thus avoiding any need for living plant material to be maintained by the variety collector on an on-going basis. In such cases, the practice is to request material of the relevant varieties from the appropriate source each time it is necessary to conduct a specific examination of distinctness. In this way, varieties selected from the variety collection can be included in the growing trial or other tests to enable direct plant-to-plant comparisons. Where necessary, the material should be verified as set out above (see Section 3.1.2.3) and the physical status of the material should be such as to not influence the expression of the characteristics of the variety in the growing tests or other trials in such a way as to affect the assessment of distinctness. For example, the varieties may need to have been propagated in the same manner and be of similar maturity at establishment.

3.2 Cooperation in the maintenance of variety collections

3.2.1 Introduction

3.2.1.1 Article 12 of the 1991 Act of the UPOV Convention states:

> "… In the course of the examination, the authority may grow the variety or carry out other necessary tests, cause the growing of the variety or the carrying out of other necessary tests, or take into account the results of growing tests or other trials which have already been carried out. For the purposes of examination, the authority may require the breeder to furnish all the necessary information, documents or material."

3.2.1.2 Cooperation for DUS testing is encouraged. It may take different forms under the UPOV Convention (see General Introduction, Chapter 3), and can cover different aspects related to variety collections.

3.2.2 Cooperation between authorities

3.2.2.1 For the establishment of variety collections, the availability of information on varieties of common knowledge is a key requirement. Exchange of information between authorities, breeders, botanic gardens, gene banks, and any other possible source of information is very important to define the list of varieties to be included in the collection (see Section 2.2).

3.2.2.2 For the purposes of the examination of DUS, UPOV encourages cooperation between authorities/variety collectors including, in particular, the exchange of information and living plant material of varieties of common knowledge for the examination of distinctness. As explained in Section 3.1.2.2.2, in the particular case of parent lines submitted as a part of the examination of a candidate hybrid variety, living plant material should only be made available to other variety collectors in such a way that the legitimate interests of the breeder would be safeguarded. Under agreements for cooperation in DUS testing, authorities may agree on a common list of varieties to be included in the variety collection or on ways the holding of living plant material can be shared.

3.2.2.3 In the case of maintenance of living plant material collections, cooperation is also an important means of avoiding duplication of tasks and of making better use of the resources available in the territory of the authority.

3.2.2.4 Cooperation may exist between authorities in which one authority maintains the living plant material for a given species or a group of varieties within a given species, and the maintainer authority provides living plant material to the other(s) when required for the examination of distinctness. For territories which cover different agroclimatic conditions for a species, the maintenance can be made by means of cooperation with other official organizations located in the different regions. For some species, the living plant material collections can be maintained by another official organization (e.g. a national research institute).

3.2.3 Cooperation with breeders

3.2.3.1 Cooperation is a means by which authorities can increase the efficiency of the establishment and maintenance of variety collections, consequently strengthening plant breeders' rights.

3.2.3.2 Breeders are particularly encouraged to cooperate in the provision of living plant material, on the basis that the inclusion of varieties in the growing tests and other trials is important for the quality of the examination of distinctness and in consequence the quality of protection for a variety.

3.2.3.3 Cooperation with breeders can involve, for example, breeders or breeders' associations maintaining a collection of living plant material which is made available to the testing authority as required.

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