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

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UPOV INFORMATION DATABASES

Document prepared by the Office of the Union

1. The purpose of this document is to provide an update on developments concerning the GENIE database, the UPOV Code System and the Plant Variety Database (UPOV-ROM).

GENIE DATABASE

2. The GENIE database has been developed to provide, for example, online information on the status of protection (see document C/40/6), cooperation in examination (see document C/40/5), experience in DUS testing (see document TC/43/4), and existence of UPOV Test Guidelines (see document TC/43/2) for different GENera and specIEs (hence GENIE), and will also be used to generate the relevant Council and Technical Committee (TC) documents concerning that information. In addition, the GENIE database is the repository of the UPOV codes and also provides information concerning alternative botanical and common names.

3. The GENIE database was initially developed in Microsoft Access format, but the design of the web-based version (in Oracle) is now well underway, which will allow the GENIE database to be launched on the freely accessible area of the UPOV website. At its forty-second session, held in Geneva, from April 3 to 5, 2006, the TC agreed that the following additional features should be introduced into the GENIE database when available on the UPOV website:

- (i) a link from the Test Guidelines references in the GENIE database to the relevant UPOV Test Guidelines on the UPOV website;
- (ii) a link to the relevant e-mail or website address for authorities in relation to experience and protection information;
- (iii) a field for “Family”;
- (iv) attribution of each genus to a “Category”: Plant; Plant/Fungus; or Plant/Algae within the administrative features of the database;
- (v) the possibility for a UPOV code to have more than one denomination class; and
- (vi) the variety denomination classes to be updated according to any revision of document UPOV/INF/12 Rev. [document UPOV/INF/12 Rev. has since been replaced by document UPOV/INF/12/1]

4. A report on the plans to launch the GENIE database on the freely accessible area of the UPOV website will be made at the Technical Working Party sessions in 2007.

UPOV CODE SYSTEM

Explanation of the UPOV Code System

5. At its forty-third session, held in Geneva, from March 26 to 28, 2007, the TC agreed to an explanation of the UPOV Code System (“Guide to the UPOV Code System”) to be posted on the freely accessible area of the UPOV website. In the first instance, that explanation has been posted on the “UPOV-ROM / UPOV Code” section of the first-restricted area (see http://www.upov.int/restrict/en/upov_rom_upov_code_system/index.htm); however, that section will be moved to the freely accessible area of the UPOV website in conjunction with the posting of the GENIE database on the freely accessible area of the UPOV website. A copy of the Guide to the UPOV Code System is attached as the annex to this document.

Updating of GRIN database in response to UPOV requests

6. The procedure for the introduction and amendment of UPOV codes in the Guide to the UPOV Code System, explains that, in the first instance, the Office of the Union (Office) will create a UPOV code on the basis of the Germplasm Resources Information Network (GRIN) database¹, or other suitable references if the species concerned are not included in the GRIN database (see Section 3.3 (a)). In that respect, the Office noted that GRIN has immediately updated its database in response to any matters which have been raised by UPOV. Therefore, the Office now contacts GRIN with regard to requests for new UPOV codes for genera and species which are not included in the GRIN database with the aim of GRIN updating its database before the Office creates the UPOV code. This minimizes the possibility of there

¹ USDA, ARS, National Genetic Resources Program. *Germplasm Resources Information Network - (GRIN)* [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland.
URL: http://www.ars-grin.gov/cgi-bin/npgs/html/tax_search.pl.

being a later classification within GRIN which is not coherent with the UPOV code. In cases where the GRIN database cannot be updated in a timely fashion, or where the genera and species are not covered by the GRIN database (e.g. fungi), other suitable sources will be used according to the procedure for the introduction and amendment of UPOV codes, as set out in Section 3.3 (a) of the Guide to the UPOV Code System.

Proposals to amend the procedure for the introduction and amendment of UPOV codes

7. The UPOV code is constructed on the basis of a genus element, species element and sub-species element (see Guide to the UPOV Code System, Section 2.1.1). In the case of the sub-species element, the UPOV code is used in a more flexible way to contain more than one level of ranking, thereby avoiding the need for extra elements in the UPOV code (see Guide to the UPOV Code System, Section 2.1.5). Discussions in relation to the development of Test Guidelines for *Camellia* (see document TWA/35/12 “Report”, paragraph 45 “Cover page”) and *Eucalyptus* (see document TG/EUCAL(proj.3), Chapter 1) have indicated that it may become necessary to also allow flexibility in the species element of the UPOV code in order to cover a classification into, for example, subgenera and/or sections, between the genus and species levels of classification. For example, GRIN classifies *Eucalyptus* into Subgenus and Section between the genus and species levels. The UPOV code could then be, for example:

Example: *Eucalyptus acaciiformis* H. Deane & Maiden

Genus: Eucalyptus (UPOV code / genus element: EUCAL)

Sub-genus: Symphyomyrtus (UPOV code / species element: first letter)

Section: Exsertaria (UPOV code / species element: second letter)

Species: acaciiformis (UPOV code / species element: third letter)

UPOV code: EUCAL_SEA

8. *The TC requested the TWPs to consider the possibility of allowing flexibility in the species element of the UPOV code in order to cover a classification into, for example, subgenera and/or sections, between the genus and species level of classification, taking into account the example in paragraph 7 above and the grouping classification for Brassica and Beta, set out in the Guide to the UPOV Code System, Section 2.3.*

Checking of UPOV codes

9. For each of the TWP sessions in 2006, the Office prepared tables of UPOV code amendments for checking by the relevant authorities, according to the procedure set out in Section 3.3 (f) to (h) in the Guide to the UPOV Code System. The Office also provided an explanation of the information provided and some guidance on how to check the code amendments. A similar procedure will be followed for the TWPs in 2007. However, at the time of the TWP sessions, the data in the GENIE database will be in the process of migration from the Access format to the Oracle format and it will not be practical to generate the usual

reports on amendments. Therefore, it is proposed that the tables of UPOV code amendments will be circulated to the TWPs later in 2007, after the migration of data has been completed.

PLANT VARIETY DATABASE

Improvements to the UPOV-ROM

10. At its forty-second session, the TC noted that, with regard to the program to improve the Plant Variety Database, priority was focused on improvements which could equally be realized in both the UPOV-ROM and web-based formats, namely:

(a) introduction of the UPOV code;

(b) improving the ease of contributing data to the UPOV-ROM through the development of a data submission table allowing data to be provided without the use of TAG format;

(c) providing training in the use of the UPOV-ROM.

11. In relation to the UPOV code, some members of the Union have already started to introduce the UPOV codes into their UPOV-ROM data, using spreadsheets containing UPOV codes provided by the Office. A report on the use of UPOV codes in the UPOV-ROM data will be made at the TWP sessions.

12. The Office plans to launch a program encouraging all contributors to start using the UPOV codes in their data and encouraging all members of the Union who do not currently contribute data to start contributing data. The starting point for that program will be the following synchronized actions:

(a) the posting on the first restricted area of the UPOV website of spreadsheets containing all UPOV codes and related names, together with guidance notes, in all UPOV languages, on how to use those spreadsheets for identifying the correct UPOV code (the spreadsheets will, thereafter, be updated on a regular basis);

(b) the posting on the first restricted area of the UPOV website of a data submission table allowing data to be provided without the use of TAG format, together with guidance notes, in all UPOV languages, on how to use the data submission table. The data submission table will be linked to the tables for identifying the appropriate UPOV code (see (a) above) and will require all entries to be provided with a UPOV code;

(c) the issuing of a circular to UPOV-ROM contributors encouraging them to start including UPOV codes in their UPOV-ROM entries and notifying them of (a) and (b) above. The circular will invite contributors to contact the Office if they require assistance in starting to use the UPOV codes. With regard to assistance in starting to include UPOV codes, the circular will explain that particular assistance can be provided in conjunction with the Community Plant Variety Office (CPVO): CPVO is obliged to enter a UPOV code for all data in their own database. For that reason, CPVO has reviewed all varieties in the UPOV-ROM (not just the data from the countries of the European Community) and has allocated what it considers to be appropriate UPOV codes for those varieties. Contributors

wishing to receive a list of the UPOV codes allocated to their data by CPVO (for the CPVO database) will be invited to contact the Office; and

(d) the issuing of a circular to members of the Union who do not contribute data to the UPOV-ROM, or who do not contribute data on a regular basis, informing them of the introduction of the data submission table (see (b) above) and inviting them to contact the Office if they require particular assistance in submitting data.

13. In relation to improving the completeness of data in the UPOV-ROM, certain States (Cyprus, Greece, Luxembourg, Malta), which are not members of UPOV, are members of the European Community and, as such, may provide data to CPVO. Consequently, data from those States provided to CPVO will be included in the UPOV-ROM.

14. With regard to providing training in the use of the UPOV-ROM, the Office ensures that information on the UPOV-ROM is included in relevant UPOV workshops and has integrated an explanation of the UPOV-ROM in the Distance Learning Course DL-205 "Introduction to the UPOV System of Plant Variety Protection under the UPOV Convention". DL-205 participants are issued with a sample UPOV-ROM and are required to undertake searches using the UPOV-ROM as a part of the exam.

Development of a web-based Plant Variety Database

15. At its forty-second session, the TC was informed that the schedule for the development of an initial prototype of the web-based Plant Variety Database would depend on the resources needed to advance the three priorities set out in paragraph 12, above. The Office explained that the prototype web-based Plant Variety Database, once developed, would be presented with proposals concerning the fields to be included and proposals for which fields might be considered to be mandatory, as requested by the TC at its fortieth session. The frequency of updating of the web-based Plant Variety Database would be considered in conjunction with the presentation of the prototype together with consideration of the establishment of links to relevant websites for variety denomination checking purposes.

16. The Office has started to investigate the potential for the development of a common searching platform to be provided for certain databases relevant for variety denomination searching purposes and plans to make a report on that matter at the forty-fourth session of the TC.

17. At the forty-third session of the TC, the representative of the Organisation for Economic Co-operation and Development (OECD) explained the interest of the OECD in the UPOV-ROM Plant Variety Database and invited the UPOV Office to make a presentation on the UPOV-ROM and the GENIE database at the annual meeting of the OECD Seed Schemes in July 2007.

[Annex follows]

ANNEX

GUIDE TO THE UPOV CODE SYSTEM

1. Purpose

1.1 The main purpose of the UPOV Code System is to enhance the usefulness of the UPOV-ROM Plant Variety Database (“UPOV-ROM”) by overcoming the problem of synonyms for plant taxa. That is achieved by attributing each taxa a code according to the UPOV Code System (“UPOV code”); synonyms for the same plant taxa are attributed the same UPOV code.

1.2 The UPOV Code System is employed in the GENIE database, which has been developed to provide, for example, online information on the status of protection (see document C/40/6), cooperation in examination (see document C/40/5), experience in DUS testing (see document TC/43/4), and existence of UPOV Test Guidelines (see document TC/43/2) for different GENera and specIEs (hence GENIE), and is also used to generate the relevant Council and Technical Committee (TC) documents concerning that information.

2. UPOV code construction

2.1 General basis

2.1.1 In general, the following UPOV code construction is used for the UPOV Code System:

(a) an alphabetic element of five letters (e.g. XXXXX) indicating the genus (“genus element”);

(b) a three-letter element (e.g. YYY) indicating the species (“species element”);

(c) where relevant, a further element of up to three characters (e.g. ZZ1) indicating a sub-specific unit (“sub-species element”);

thus,

XXXXX_YYY_ZZ1

2.1.2 In all cases, the five-letter genus element is to be provided, but the three-letter species element and the sub-specific element are only provided where necessary.

2.1.3 As far as possible, the elements try to follow the first letters of the botanical name of that element, e.g.:

<i>Prunus</i>	PRUNU_
<i>Prunus armeniaca</i>	PRUNU_ARM

2.1.4 In some cases, it is necessary to improvise to ensure that similar taxa have different UPOV codes (e.g. *Platycodon* = “PLTYC_” and *Platymiscium* = “PLTYM_”). In cases where the name is shorter than the UPOV code, the last letter of the name is repeated e.g. *Poa* = POAAA.

2.1.5 In the case of the sub-specific element, the UPOV code is used in a more flexible way to contain more than one level of ranking, thereby avoiding the need for extra elements in the UPOV code.

2.2 Inter-generic and inter-specific hybrids

2.2.1 The letter “x” is not used in the UPOV code to indicate hybrids.

(Background note: the multiplication sign ‘x’ is used in botany as an optional device to indicate hybridity, but is not part of a name in any sense and may or may not be applied according to the wishes and opinions of a botanical author or editor. What one person considers a hybrid, may not be so considered by another, thus we may see *Solanum tuberosum* or *Solanum x tuberosum* if the writer of the second version understands the potato species to be of hybrid origin.)

2.2.2 In the case of a genus which is formed as a hybrid between other genera, but which is taxonomically recognized in its own right (e.g. \times *Triticosecale* [= *Triticum x Secale*]), the “genus element” of the UPOV code is based on the taxonomically recognized “hybrid” genus. For example, \times *Triticosecale* has the UPOV code “TRITL”.

2.2.3 In the case of a genus which is formed as a hybrid between two genera and which is not taxonomically recognized as a genus in its own right (“hybrid genus”), a UPOV code is created for the new “hybrid genus”. The genus element of the UPOV code is produced by combining the first two letters of the female parent genus and the first three letters of the male parent genus. For example, a “hybrid genus” which was formed as a hybrid between *Carlus* (UPOV code: CARLU) x *Phillipus* (UPOV code: PHILL) would have the UPOV code “CAPHI”.

2.2.4 In the case of a species which is formed as a hybrid between two species and which is not taxonomically recognized as a species in its own right (“hybrid species”), a UPOV code is created for the new “hybrid species”. The species element of the UPOV code is produced by combining the first letter of the female parent species and the first two letters of the male parent species. For example, a “hybrid species” which was formed as a hybrid between *Alpha one* (UPOV code: ALPHA_ONE) x *Alpha two* (UPOV code: ALPHA_TWO) would have the UPOV code “ALPHA_OTW”.

2.2.5 In the case of a hybrid genus (or species) which is formed as a hybrid between more than two genera (or species) and which is not taxonomically recognized as a genus in its own right, the same general approach is followed as for a hybrid between two genera (or species); the sequence of letters used in the UPOV code is based on the order of female parent followed by male parent.

2.2.6 The approach for introducing UPOV codes for hybrid genera and species, as set out in paragraphs 2.2.3 to 2.2.5, means that the UPOV code will distinguish between two hybrids produced using the same parents, but with the male and female parents reversed, e.g.:

ALPHA_OTW: *Alpha one* (ALPHA_ONE) x *Alpha two* (ALPHA_TWO)

ALPHA_TON: *Alpha two* (ALPHA_TWO) x *Alpha one* (ALPHA_ONE)

2.2.7 In the case of “hybrid” genus (or species) (i.e. which is not taxonomically recognized as a genus (or species) in its own right), the GENIE database contains a link between the “parent” genera (or species) and the “hybrid” genus or species. Thus, when searching in GENIE, it is possible to search on a UPOV code, but to choose to also receive the results on all “linked” UPOV codes:

Example: Hybrid genus formed between *Carlus* x *Phillipus*

<u>Genus</u>	<u>UPOV Code</u>
<i>Carlus</i>	CARLU_(linked to CAPHI_)
<i>Phillipus</i>	PHILL_(linked to CAPHI_)
<i>Carlus</i> x <i>Phillipus</i>	CAPHI_(linked to CARLU_ and PHILL_)

A search on “CARLU” (*Carlus*) could be made to provide all varieties of *Carlus* and the hybrid genus *Carlus* x *Phillipus*. A search on “PHILL” (*Phillipus*) could be made to provide all varieties of *Phillipus* and the hybrid genus *Carlus* x *Phillipus*. A search on “CAPHI” (*Carlus* x *Phillipus*) could be made to provide all varieties of *Carlus*, *Phillipus* and the hybrid genus *Carlus* x *Phillipus*.

2.3 Grouping classification: *Brassica* and *Beta*

A grouping classification is used for UPOV codes within *Beta vulgaris* and part of *Brassica oleracea*. To indicate that a grouping classification is being used for those two species, the first letter of the third element of the UPOV code starts with “G”. A summary of the structuring of the species is presented below:

<i>UPOV code</i>	<i>Botanical name</i>	<i>Common name</i>
BETAA_VUL	Beta vulgaris L.	
BETAA_VUL_GV	Beta vulgaris L. ssp. vulgaris	Beet
BETAA_VUL_GVA	Beta vulgaris L. ssp. vulgaris var. alba DC.	Fodder beet
BETAA_VUL_GVC	Beta vulgaris L. ssp. vulgaris var. conditiva Alef.	Beetroot
BETAA_VUL_GVF	Beta vulgaris L. ssp. vulgaris var. flavescens DC.	Leaf beet
BETAA_VUL_GVS	Beta vulgaris L. ssp. vulgaris var. saccharifera Alef.	Sugar beet
BRASS_OLE_GA	Brassica oleracea L. convar. acephala (DC.) Alef.	Kale
BRASS_OLE_GAM	Brassica oleracea L. convar. acephala (DC.) Alef. var. medullosa Thell.	Marrow-stem kale
BRASS_OLE_GAR	Brassica oleracea L. var. ramosa DC.	Catjang
BRASS_OLE_GAS	Brassica oleracea L. convar. acephala (DC.) Alef. var. sabellica L.	Curly kale
BRASS_OLE_GAV	Brassica oleracea L. convar. acephala (DC.) Alef. var. viridis L.	Fodder kale
BRASS_OLE_GB	Brassica oleracea L. convar. botrytis (L.) Alef.	
BRASS_OLE_GBB	Brassica oleracea L. convar. botrytis (L.) Alef. var. botrytis	Cauliflower
BRASS_OLE_GBC	Brassica oleracea L. convar. botrytis (L.) Alef. var. cymosa Duch.	Broccoli
BRASS_OLE_GC	Brassica oleracea L. convar. capitata (L.) Alef. var. capitata (L.) Alef.	Cabbage
BRASS_OLE_GCA	Brassica oleracea L. convar. capitata (L.) Alef. var. capitata L. f. alba DC.	White cabbage
BRASS_OLE_GCR	Brassica oleracea L. convar. capitata (L.) Alef. var. capitata L. f. rubra (L.) Thell.	Red cabbage
BRASS_OLE_GCS	Brassica oleracea L. convar. capitata (L.) Alef. var. sabauda L.	Savoy cabbage
BRASS_OLE_GGM	Brassica oleracea L. convar. oleracea var. gemmifera DC.	Brussels sprout
BRASS_OLE_GGO	Brassica oleracea L. convar. acephala (DC.) Alef. var. gongylodes L.	Kohlrabi

2.4 Variety Types

The basis of the UPOV code is a “vertical” botanical classification and, therefore, the UPOV code is limited in its scope to differentiate, in a “horizontal” way, types of variety (e.g. fruit varieties and ornamental varieties) which have the same botanical classification. However, it is possible to identify such “types” within the GENIE database. Thus, if types are created within a UPOV code within the GENIE database, it would be possible, for example, to search “MALUS” for all information related to apple, but also to refine the search, for example for all information which is specifically indicated as relating to fruit varieties only.

3. Procedure for the introduction and amendment of UPOV codes

3.1 Responsibility for the UPOV Code System

The Office of the Union (Office) is responsible for the UPOV Code System and the individual UPOV codes.

3.2 Repository of UPOV Codes

The definitive collection of UPOV codes exists exclusively in the GENIE database.

3.3 Introduction of New UPOV Codes / Amendments to UPOV Codes

(a) In the first instance, the Office will create a UPOV code on the basis of the Germplasm Resources Information Network (GRIN) database², or other suitable references if the species concerned are not included in the GRIN database.

(b) Where the Office is aware of relevant experts for the genus or species concerned, or is advised of such experts, for example by the proposer of a new UPOV code, it will, wherever possible, check its proposals with those experts before creating the UPOV code.

(c) New UPOV codes might be proposed by any party, but it is expected that the majority of proposals will be made by contributors to the Plant Variety Database. Where the Office receives such proposals, it will respond by updating the GENIE database with the new UPOV codes in a timely manner and, in particular, will seek to ensure that new UPOV codes are available to allow their use for the forthcoming edition of the Plant Variety Database. In addition, the Office will add new UPOV codes where it identifies a need.

(d) In general, amendments to UPOV codes will not be made as a result of taxonomic developments unless these result in a change to the genus classification of a species. The “Explanatory notes on variety denominations under the UPOV Convention” (document UPOV/INF/12/1) contain UPOV variety denomination classes; for genera and species not covered by the List of Classes in Annex I to document UPOV/INF/12/1, the general rule (“one genus / one class”) is that a genus is considered to be a class (see document UPOV/INF/12/1, Section 2.5.2 and its Annex I). Therefore, it is important that the first

² USDA, ARS, National Genetic Resources Program. *Germplasm Resources Information Network - (GRIN)* [Online Database]. National Germplasm Resources Laboratory, Beltsville, Maryland.

URL: http://www.ars-grin.gov/cgi-bin/npgs/html/tax_search.pl

element of the UPOV code can be used to sort species into the correct genus. The UPOV codes will also be amended if there are consequences for the content of a variety denomination class where the list of classes applies. Amendments to UPOV codes will be handled by the same procedure as the introduction of new UPOV codes as in paragraphs (a) and (b), above. However, in addition, all members of the Union and contributors of data to the Plant Variety Database will be informed of any amendments.

(e) New and amended UPOV codes will be presented to the relevant Technical Working Parties (TWP(s)) for comment at their first available session. If the TWP recommends any change, this will be treated as an amendment according to paragraph (d), above.

(f) *Checking by Technical Working Party(ies)*: the Office determines the relevant TWP(s) for checking each UPOV code on the basis of available information.

(g) *Checking by all authorities*: all the experts of the relevant TWP(s) to be invited to check the UPOV codes where:

- (i) many authorities (e.g. 10 or more) have practical experience in DUS testing (based on GENIE database / document TC/xx/4 (e.g. TC/43/4)), have provided interested experts in the drafting of relevant Test Guidelines and/or have protected varieties (based on Plant Variety Database (UPOV-ROM)); or
- (ii) they concern genera or species for which a wide review is considered appropriate by the Office (e.g. because it concerns a proposal for a species or sub-species not previously recognized within the genus, or a proposal for restructuring of the UPOV code).

(h) *Checking by specific authorities*: in cases not covered by (g) above, the experts of the relevant TWP(s) of specific authorities will be invited to check the UPOV codes. The specific authorities being those which have practical DUS testing experience, have provided interested experts in the drafting of relevant Test Guidelines, or which have granted protection for varieties covered by the relevant UPOV code.

3.4 Updating of Information Linked to UPOV Codes

(a) UPOV codes might need to be updated to take account of, for example, changes in taxonomic classification, new information on common names, etc. In the case of changes of taxonomic classification, this might, although it is emphasized that this is not necessarily the case (see section 3.3 (d), above), result in a need to change the UPOV code. In such cases, the procedure is as explained in section 3.3, above. In other cases, the Office will amend the information linked to the existing UPOV code as appropriate.

(b) The TC, the TWPs and individual communications from members and observers of these bodies will be the principal routes by which the Office will update its information.

4. Publication of UPOV Codes

4.1 As explained in Section 3.2, all UPOV codes can be accessed in the GENIE database, which is made available on the freely accessible area of the UPOV website.

4.2 In addition, the UPOV codes, together with their relevant botanical and common names, variety denomination class and linked hybrid/parent UPOV codes, as contained in the GENIE database, are published on the first restricted area of the UPOV website (see http://www.upov.int/restrict/en/upov_rom_upov_code_system/index.htm). That information is published in a form that facilitates electronic downloading of the UPOV codes for use by contributors to the UPOV-ROM.

[End of Annex and of document]