UPOV

International Union for the Protection of New Varieties of Plants

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Technical Working Party for Agricultural Crops
Forty-Seventh Session
Naivasha, Kenya, May 21 to 25, 2018

Technical Working Party on Automation and Computer Programs
Thirty-Sixth Session
Hanover, Germany, July 2 to 6, 2018

Technical Working Party for Vegetables
Fifty-Second Session
Beijing, China, September 17 to 21, 2018

Technical Working Party for Fruit Crops
Forty-Ninth Session
Santiago de Chile, Chile, November 19 to 23, 2018

Technical Working Party for Ornamental Plants and Forest Trees
Fifty-First Session
Christchurch, New Zealand, February 18 to 22, 2019

TWP/2/4 Rev.

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UPOV INFORMATION DATABASES

Document prepared by the Office of the Union

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EXECUTIVE SUMMARY

1. The purpose of this document is to provide an update on developments concerning the GENIE database; UPOV Codes; and the PLUTO database.

2. The TWPs are invited to note:

(a) that 440 new UPOV codes were created in 2017 and a total of 8,589 UPOV codes are included in the GENIE database;

(b) that the Office of the Union received a request to create new UPOV codes for 191 forest tree species moving in international trade under the OECD certification schemes. The requested UPOV codes were introduced in GENIE by September 2017. DG SANTE has proposed the establishment of an administrative arrangement between the Office of the Union and the European Commission to cover collaboration in scientific names of plant species present in each other's databases and, in particular, regarding the attribution of UPOV codes to plant species in FOREMATIS;

(c) the summary of contributions to the PLUTO database from 2014 to 2017 and the current situation of members of the Union on data contribution, as presented in the Annex IV to this document; and

(d) that the WG-DEN, at its fourth meeting, held in Geneva on October 27, 2017, agreed that matters under agenda item 5 "Expansion of the content of the PLUTO database" would be considered at a later meeting on the basis of the document presented at the second meeting. It was agreed that the Office of the Union should propose how to progress the discussion on this matters.

3. The TWA, TWV, TWO and TWF are invited to:

(a) check the amendments to UPOV codes, the new UPOV codes or new information added for existing UPOV codes, and the UPOV codes used in the PLUTO database for the first time, which are provided in Annex V to this document; and

(b) submit comments on Annex V, part A “UPOV codes amendments to be checked”, part B “New UPOV codes or new information”, and part C “Crop type(s) of UPOV codes used in the PLUTO database for the first time” to the Office of the Union by March 31, 2019.

4. The TWA is invited to:

(a) consider the proposal to amend codes for ZEAAA, as set out in paragraph 23 of this document;

(b) consider the proposal to amend UPOV Codes for subspecies in the *Mucuna* genus, as set out in paragraph 26 of this document; and

(c) consider the proposal to amend the UPOV Code for *Sesbania sesban*, as set out in paragraph 29 of this document.

5. The TWV is invited to:

(a) consider the proposal to amend UPOV codes for *Brassica oleracea*, as set out in Annex II to this document, and the revision of the Section 2.3 of the “Guide to the UPOV Code System”, as set out in Annex III to this document; and

(b) consider the proposal to allocate the UPOV code BRASS_OLE to the hybrids between *Brassica oleracea* L. var. *acephala* and *Brassica oleracea* L. var. *botrytis*, as set out in paragraph 42, subject to agreement to the proposal provided in Annex II to this document;

(c) consider how to address the hybrids between *Brassica oleracea* L. var. *acephala* and *Brassica oleracea* L. var. *botrytis*, as set out in paragraph 43, in the case that the TWV rejects the proposal provided in Annex II to this document; and

(d) consider the proposal to amend UPOV Codes for *Epichloe* species and *Neotyphodium* species, as set out in paragraphs 46 and 47 of this document.

6. The TWF is invited to consider the proposal to delete the UPOV Code CITRU_LMT, as set out in paragraph 50 of this document.

7. The TWO is invited to:

(a) consider the proposal to delete the UPOV Codes ECSED and ECSED_EMO, as set out in paragraph 53 of this document;

(b) consider the proposal to delete the UPOV Codes CRTNT and CRTNT_CAL, as set out in paragraph 57 of this document; and

(c) consider the proposal to delete the UPOV Codes ISOPL, DGISO, ISOPL_CAN and DGISO_PCA, as set out in paragraph 61 of this document.

8. The following abbreviations are used in this document:

CPVO: Community Plant Variety Office
DG SANTE: Directorate General for Health and Food Safety - European Commission
FOREMATIS: Forest Reproductive Material Information System
GRIN : Germplasm Resources Information Network
OECD: Organization for Economic Co-operation and Development
TWA: Technical Working Party for Agricultural Crops
TWC: Technical Working Party on Automation and Computer Programs
TWF: Technical Working Party for Fruit Crops
TWO: Technical Working Party for Ornamental Plants and Forest Trees
TWP(s): Technical Working Party(ies)
TWV: Technical Working Party for Vegetables
WG-DEN: Working Group on Variety Denominations

9. The structure of this document is as follows:

GENIE DATABASE

Background

10. It is recalled that the GENIE database (http://www.upov.int/genie/en/) has been developed to provide, for example, online information on the status of protection (see document C/[session]/6), cooperation in examination (see document C/[session]/5), experience in DUS testing (see document TC/[session]/4), and existence of UPOV Test Guidelines (see document TC/[session]/2) for different GENera and specIEs (hence GENIE), and is used to generate the relevant Council and 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.

UPOV CODE SYSTEM

Guide to the UPOV Code System

11. The "Guide to the UPOV Code System" is available on the UPOV website (see http://www.upov.int/genie/en/pdf/upov_code_system.pdf).

UPOV code developments

12. In 2017, 440 new UPOV codes were created and amendments were made to one existing UPOV code. The total number of UPOV codes in the GENIE database at the end of 2017 was 8,589.

	Year								
	2009	2010	2011	2012	2013	2014	2015	2016	2017
New UPOV codes	148	114	173	212	209	577	188	173	440
Amendments	17	6	12	5	47*	37	11	16	1
Total UPOV Codes (at end of year)	6,582	6,683	6,851	7,061	7,251	7,808	7,992	8,149	8,589

* including changes to UPOV codes resulting from the amendment of the "Guide to the UPOV Code System" concerning hybrids (see document TC/49/6).

13. In March 2017, the Office of the Union received a request from the Directorate-General for Health and Food Safety of the European Commission (DG SANTE) to create UPOV codes for 191 forest tree species moving in international trade under the OECD certification scheme in the context of the extension of the European Commission Forest Reproductive Material Information System (FOREMATIS) to include data of the OECD Forest database. The requested UPOV codes were introduced in GENIE in September 2017. DG SANTE has proposed the establishment of an administrative arrangement between the Office of the Union and the European Commission to cover collaboration in scientific names of plant species present in each other's databases and, in particular, regarding the attribution of UPOV codes to plant species in FOREMATIS.

UPOV CODE AMENDMENTS

TWP checking

14. In accordance with the procedure set out in Section 3.3 of the Guide to the UPOV Code System, the Office of the Union will prepare tables of UPOV code additions and amendments, for checking by the relevant authorities, for each of the TWP sessions in 2018 and 2019.

15. The Excel files provided as Annex IV, part A "UPOV codes amendments to be checked", part B "New UPOV codes or new information", and part C "Crop type(s) of UPOV codes used in the PLUTO database for the first time" (available on the TWA/47, TWC/36, TWV/52, TWF/49 and TWO/51 website in excel file only) to this document provide information on new UPOV codes added to the GENIE database and UPOV code amendments that have not yet been checked by the relevant authorities, as follows:

"Part A, 'UPOV codes amendments to be checked':

for each change, the old entry is highlighted in the row in red and the changes to the entry are found in the line immediately below that highlighted row (they have the same number in the first column). All Technical Working Parties and Authority(ies) are requested to check the amendments whether the amendments follow UPOV code system, reflects authentic botanical names and/or common names (see "Guide to the UPOV Code System" http://www.upov.int/export/sites/upov/genie/en/pdf/upov_code_system.pdf).

"Part B 'New UPOV codes or new information':

contains the new UPOV codes or new information added for existing UPOV codes. Highlighting in grey indicates that the UPOV code or name has not been changed. In this spreadsheet, the column headers highlighted in yellow indicate the relevant Technical Working Party (TWP) and Authority(ies) of interest which are requested to check the correctness of the information."

"Part C 'Crop type(s) of UPOV codes used in the PLUTO database for the first time':

contains the new crop type allocation or amended allocation for new and existing UPOV codes. In this spreadsheet, the column headers highlighted in yellow indicate the relevant crop type(s) which are requested to check the correctness of the information."

16. Experts of the TWA, TWV, TWF and TWO are requested to check the amendments to UPOV codes and the new UPOV codes or new information added for existing UPOV codes and to submit comments by March 31, 2019.

Specific proposals

17. The following sections present proposals for amendments to UPOV codes for consideration by the TWPs at their session in 2018 (2019 for TWO).

18. Section 3.3 of the "Guide to the UPOV Code System" provides the following:

> "Amendments to UPOV codes will be handled by the same procedure as the introduction of new UPOV codes […]. However, in addition, all members of the Union and contributors of data to the Plant Variety Database will be informed of any amendments" .

19. Subject to agreement by the TWPs as indicated in the following sections, members of the Union and contributors of data to the PLUTO database would be informed of the changes and the date of the changes by means of a circular in advance. Contributors of data to the PLUTO database would be requested to use the amended UPOV codes when submitting their plant variety data to the Office of the Union.

UPOV code "ZEAAA_MAY_SAC", "ZEAAA_MAY_EVE" and "ZEAAA_MAY_MIC"

Background

20. The TWA, at its forty-sixth session, held in Hanover, Germany, from June 19 to 23, 2017, agreed that the UPOV Code ZEAAA_MAY_SAC should be combined with the UPOV Code ZEAAA_MAY_MAY under a single UPOV Code ZEAAA_MAY following the reclassification of Sweet Corn (*Zea mays* var. *saccharata*) as a subspecies of *Zea mays* subsp. *mays*..

21. The current entries in the GENIE database for "*Zea mays* L." and its subspecies, the taxa in the Germplasm Resources Information Network (GRIN) and the numbers of entries in the PLUTO database, are as follows:

UPOV code	Principal botanical name in GENIE	Botanical name(s) in GRIN	Common name(s) in GENIE	Numbers of Entries in PLUTO
ZEAAA_MAY	*Zea mays* L.	*Zea mays* L.	Corn; Maize	118,048
ZEAAA_MAY_SAC	*Zea mays* L. *saccharata* Koern.	*Zea mays* L. var. *saccharata* (Sturtev.) L. H. Bailey (as a synonym of *Zea mays* L. subsp. *Mays*)	Sweet Corn	757
ZEAAA_MAY_MAY	*Zea mays* L. subsp. *mays*	*Zea mays* L. subsp. *mays*	corn; maize; sweet corn etc.	803,853
ZEAAA_MAY_EVE	*Zea mays* L. var. *everta* (Praecox) Sturt.	[*Zea mays* L. var. *everta* (Praecox) Sturt. (as a synonym of *Zea mays* L. subsp. *Mays*)] [to be included in GRIN]	Popcorn	56
ZEAAA_MAY_MEX	*Zea mays* L. subsp. *mexicana* (Schrad.) H. H. Iltis	*Zea mays* L. subsp. *mexicana* (Schrad.) H. H. Iltis	Durango teosinte; Mexican teosinte; Rayana grass	0
ZEAAA_MAY_MIC	*Zea mays* L. convar. *microsperma* Koern.	[*Zea mays* L. convar. *microsperma* Koern. (as a synonym of *Zea mays* L. subsp. *Mays*)] [to be included in GRIN]	Popcorn	79

22. *Zea mays* L. and its subspecies, including *Zea mays* L. var. *saccharata*, are covered by the UPOV Test Guidelines for Maize (document TG/2/7).

Proposal

23. In accordance with the reclassification of *Zea mays* L. var. *saccharata* (sweet corn), *Zea mays* L. var. *everta* (Praecox) Sturt. and *Zea mays* L. convar. *microsperma* Koern (Popcorn) as synonyms of *Zea mays* L.subsp. *mays* in GRIN, the TWA might wish to consider deletion of the UPOV Codes ZEAAA_MAY_SAC, ZEAAA_MAY_EVE and ZEAAA_MAY_MIC. *Zea mays* L. var. *saccharata*, *Zea mays* L. var. *everta* (Praecox) Sturt. and *Zea mays* L. convar. *microsperma* Koern would be covered by the UPOV Code ZEAAA_MAY_MAY following the reclassification of *Zea mays* L. var. *saccharata* (sweet corn),

Zea mays L. var. *everta* (Praecox) Sturt. and *Zea mays* L. convar. *microsperma* Koern (Popcorn) as synonyms of *Zea mays* L. subsp. *mays*, as follows:

Current			Proposal		
UPOV code	Principal botanical name	Other botanical name(s)	UPOV code	Principal botanical name	Other botanical name(s)
ZEAAA_MAY_SAC	*Zea mays* L. *saccharata* Koern.	n.a.	[to delete]	n.a.	n.a.
ZEAAA_MAY_EVE	*Zea mays* L. var. *everta* (Praecox) Sturt.	n.a.	[to delete]	n.a.	n.a.
ZEAAA_MAY_MIC	*Zea mays* L. convar. *microsperma* Koern.	n.a.	[to delete]	n.a.	n.a.
ZEAAA_MAY_MAY	*Zea mays* L. subsp. *mays*	*Zea mays* var *ceratina* L.; *Zea mays* var. *indentata* (Sturtev.) L. H. Bailey; *Zea mays* var. *indurata* (Sturtev.) L. H. Bailey; *Zea mays* var. *saccharata* (Sturtev.) L. H. Bailey	ZEAAA_MAY_MAY	*Zea mays* L. subsp. *mays*	*Zea mays* var *ceratina* L.; *Zea mays* var. *indentata* (Sturtev.) L. H. Bailey; *Zea mays* var. *indurata* (Sturtev.) L. H. Bailey; *Zea mays* var. *saccharata* (Sturtev.) L. H. Bailey; *Zea mays* L. *saccharata* Koern.; *Zea mays* L. var. *everta* (Praecox) Sturt.; *Zea mays* L. convar. *microsperma* Koern.

Mucuna genus

Background

24. The Office of the Union was informed of the reclassification of species and subspecies in the *Mucuna* genus in GRIN.

25. The current entries in the GENIE database for species and subspecies in the *Mucuna* genus, the taxa in GRIN and the numbers of entries in the PLUTO database, are as follows:

UPOV code	Principal botanical name in GENIE	Botanical name(s) in GRIN	Common name(s) in GENIE	Numbers of Entries in PLUTO
MUCUN	*Mucuna*	*Mucuna Adans.*	n.a.	0
MUCUN_PRU	*Mucuna pruriens* (L.) DC.	*Mucuna pruriens* (L.) DC.	cow-itch; cowhage; velvet-bean	1
n.a.	n.a.	*Mucuna pruriens* (L.) DC. var. *utilis* (Wall. ex Wight) Baker ex Burck	n.a.	n.a.
MUCUN_PRU_ATE	*Mucuna aterrima* (Piper & Tracy) Holland.	*Mucuna pruriens* (L.) DC. var. *utilis* (synonym: *Mucuna aterrima* (Piper & Tracy) Holland)	n.a.	0
MUCUN_PRU_COC	*Mucuna cochinchinensis* (Lour.) A. Chev.	*Mucuna pruriens* (L.) DC. var. *utilis* (synonym : *Mucuna cochinchinensis* (Lour.) A. Chev.)	n.a.	0
MUCUN_PRU_DEE	*Mucuna deeringiana* (Bort) Merr.	*Mucuna pruriens* (L.) DC. var. *utilis* (synonym: *Mucuna deeringiana* (Bort) Merr.)	n.a.	0

Proposal

26. In accordance with the reclassification of species and subspecies in the *Mucuna* genus in GRIN, the TWA might wish to consider deletion of the UPOV codes MUCUN_PRU_ATE, MUCUN_PRU_COC and MUCUN_PRU_DEE. *Mucuna aterrima*, *Mucuna cochinchinensis* and *Mucuna deeringiana* would be covered by the new UPOV Code for *Mucuna pruriens* (L.) DC. var. *utilis*, which the Office of the Union would create (MUCUN_PRU_UTI), as follows:

Current			Proposal		
UPOV code	Principal botanical name	Other botanical names	UPOV code	Principal botanical name	Other botanical names
n.a.	n.a.	n.a.	MUCUN_PRU_UTI	*Mucuna pruriens* (L.) DC. var. *utilis* (Wall. ex Wight) Baker ex Burck	*Mucuna aterrima* (Piper & Tracy) Holland; *Mucuna cochinchinensis* (Lour.) A. Chev.) ; *Mucuna deeringiana* (Bort) Merr.; *Stizolobium deeringianum* Bort
MUCUN_PRU_ATE	*Mucuna aterrima* (Piper & Tracy) Holland.	n.a.	[to delete]	n.a.	n.a.
MUCUN_PRU_COC	*Mucuna cochinchinensis* (Lour.) A. Chev.	n.a.	[to delete]	n.a.	n.a.
MUCUN_PRU_DEE	*Mucuna deeringiana* (Bort) Merr.	*Stizolobium deeringianum* Bort	[to delete]	n.a.	n.a.

UPOV code for Sesbania sesban

Background

27. The Office of the Union was informed of the misallocation of the UPOV code for *Sesbania sesban* (L.) Merr. .

28. The current entries in the GENIE database for *Sesbania* species, the taxa in GRIN and the numbers of entries in the PLUTO database, are as follows:

UPOV code	Principal botanical name in GENIE	Botanical name(s) in GRIN	Common name(s) in GENIE	Numbers of Entries in PLUTO
SESBA	*Sesbania*	*Sesbania* Adans.	n.a.	0
SESBA_EXA	*Sesbania exaltata* (Raf.) Rydb. ex A. W. Hill	*Sesbania exaltata* (Raf.) Rydb.	n.a.	0
SENNA_SES	*Sesbania sesban* (L.) Merr.	*Sesbania sesban* (L.) Merr.	n.a.	0

Proposal

29. It is proposed to correct the UPOV Code SENNA_SES to SESBA_SES for *Sesbania sesban* (L.) Merr. , as follows:

Current			Proposal		
UPOV code	Principal botanical name	Other botanical name(s)	UPOV code	Principal botanical name	Other botanical name(s)
SENNA_SES	*Sesbania sesban* (L.) Merr.	n.a.	SESBA_SES	*Sesbania sesban* (L.) Merr.	n.a.

Brassica oleracea

Background

30. The Office of the Union was informed of the inconsistency between GENIE and GRIN with regard to the botanical names of *Brassica oleracea*.

31. The botanical names in GENIE are specified in the Section 2.3 of the "Guide to the UPOV Code System", which is reproduced as follows:

> "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:

UPOV code	*Botanical name*	*Common name*
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**
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.)**	**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**

32. Annex I to this document provides the current entries in the GENIE database for *Brassica oleracea* except hybrids, the taxa in GRIN and the numbers of entries in the PLUTO database.

33. There are differences between botanical names in GRIN and those in GENIE, which suggest that the groupings within *Brassica oleracea* group are not recognized within GRIN classification:

34. *Brassica oleracea* L. convar. *capitata* (L.) Alef. var. *alba* DC. (BRASS_OLE_GCA) and *Brassica oleracea* L. convar. *capitata* (L.) Alef. var. *rubra* (L.) Thell . (BRASS_OLE_GCR) are not recognized in GRIN.

Proposal

35. The TWV might wish to consider amending the botanical names of *Brassica oleracea* in accordance with GRIN, with the consequent changes to the UPOV codes in relation to groups, as provided in Annex II to this document, and the proposal on the revision of the Section 2.3 of the "Guide to the UPOV Code System", as provided in Annex III to this document.

36. With regards to the revision of the Section 2.3 of the "Guide to the UPOV Code System", if the TWV agrees with this proposal set out in paragraph 35, the proposal for the revision would be considered by the TC, at its fifty-fourth session. Subject to agreement by the TC and CAJ in 2018, the Council would be invited to approve the revision of the "Guide to the UPOV Code System".

Hybrids between *Brassica oleracea* L. var.*acephala* and *Brassica oleracea* L. var. *botrytis*

37. On June 27, 2018, the Office of the Union received a request from the Republic of Korea to allocate a UPOV code for a hybrid between *Brassica oleracea* L. var. *acephala* (UPOV code BRASS_OLE _GA) and *Brassica oleracea* L. var. *botrytis* (UPOV code BRASS_OLE _GB).

38. GRIN has advised that there is no binominal name for hybrids between *Brassica oleracea* L. var. *acephala* and *Brassica oleracea* L. var. *botrytis*.

39. The Office of the Union has allocated the UPOV code BRASS_OLE to the hybrid as an interim solution, pending consideration of an appropriate UPOV code by the TWV.

40. Section 2.2.4 of the "Guide to the UPOV Code System" provides the following:

> "In the case of a species which is formed as a hybrid between two species and for which there is no binomial name ('hybrid species') (e.g. Alpha one x Alpha two), 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'" .

41. GRIN recognizes that both *Brassica oleracea* L. var. *acephala* and *Brassica oleracea* L. var. *botrytis* are synonyms of *Brassica oleracea* L., as presented in Annex I to this document.

42. Therefore, subject to agreement to the proposal to change the UPOV codes in relation to *Brassica*, as provided in Annex II to this document, the UPOV code BRASS_OLE will be allocated to both parent species of the "hybrids". As a consequence, the "hybrids" will be covered by the UPOV code BRASS_OLE.

43. In the case that the TWV does not accept the proposal provided in Annex II to this document, the TWV is invited to consider how to address such hybrids, given that the taxa of the "parents" are not recognized as different taxa in GRIN.

UPOV codes for Epichloe species and Neotyphodium species

Background

44. The Office of the Union was informed of the reclassification of certain *Neotyphodium* species to *Epichloe* species.

45. In the case of fungi, the Guide to the UPOV Code System does not indicate a single source to be used for selecting the principal botanical name and synonyms. However, the Index Fungorum (http://www.indexfungorum.org/names/names.asp) provides the following information which is shown with the current entries in the GENIE database and the PLUTO database relevant for *Epichloe* species and *Neotyphodium* species:

UPOV code	Principal botanical name in GENIE	Scientific name in Index Fungorum	Synonym(s) in Index Fungorum	Numbers of Entries in PLUTO
EPICH	*Epichloe*	*Epichloe* (Fr.) Tul. & C. Tul.	*Neotyphodium* Glenn, C.W. Bacon & Hanlin; *Cordyceps* subgen. *Epichloe* Fr.	5
EPICH_COE	*Epichloe coenophiala*	*Epichloe coenophiala* (Morgan-Jones & W. Gams) C.W. Bacon & Schardl	*Acremonium coenophialum* Morgan-Jones & W. Gams; *Neotyphodium coenophialum* (Morgan-Jones & W. Gams) Glenn, C.W. Bacon & Hanlin; *Epichloe typhina sensu* Neill	7
EPICH_FES	*Epichloe festucae*	*Epichloe festucae* Leuchtm., Schardl & M.R. Siegel	*Epichloe typhina sensu auct.* NZ	14
EPICH_SIE	*Epichloe siegelii*	*Epichloe siegelii* (K.D. Craven, Leuchtm. & Schardl) Leuchtm.,	*Neotyphodium* ×*siegelii* K.D. Craven, Leuchtm. & Schardl	1
EPICH_UNC	*Epichloe uncinata*	*Epichloe uncinata* (W. Gams, Petrini & D. Schmidt) Leuchtm. & Schardl	*Acremonium uncinatum* W. Gams, Petrini & D. Schmidt; *Neotyphodium uncinatum* (W. Gams, Petrini & D. Schmidt) Glenn, C.W. Bacon & Hanlin	9
NEOTY	*Neotyphodium*	*Epichloe* (Fr.) Tul. & C. Tul.	*Neotyphodium* Glenn, C.W. Bacon & Hanlin; *Cordyceps* subgen. *Epichloe* Fr.	1
NEOTY_ACR	*Neotyphodium acremonium*	n.a. [This species is not registered in Index Fungorum.]	n.a.	6
NEOTY_COE	*Neotyphodium coenophialum*	*Epichloe coenophiala* (Morgan-Jones & W. Gams) C.W. Bacon & Schardl	*Acremonium coenophialum* Morgan-Jones & W. Gams; *Neotyphodium coenophialum* (Morgan-Jones & W. Gams) Glenn, C.W. Bacon & Hanlin; *Epichloe typhina sensu* Neill	6
NEOTY_LOL	*Neotyphodium lolii*	[*Neotyphodium lolii* (Latch, M.J. Chr. & Samuels) Glenn, C.W. Bacon & Hanlin] [This scientific name is valid until the new scientific name *Elsinoe lolii* is published in a Code compliant form.]	n.a.	5
NEOTY_UNC	*Neotyphodium uncinatum* (W. Gams, Petrini & D. Schmidt) Glenn, C.W. Bacon & Hanlin	*Epichloe uncinata (*W. Gams, Petrini & D. Schmidt) Leuchtm. & Schardl	*Acremonium uncinatum* W. Gams, Petrini & D. Schmidt; *Neotyphodium uncinatum* (W. Gams, Petrini & D. Schmidt) Glenn, C.W. Bacon & Hanlin	3

Proposal

46. In accordance with the reclassification of certain *Neotyphodium* species to *Epichloe* species, the TWV might wish to consider deletion of the UPOV codes NEOTY_ACR, NEOTY_COE and NEOTY_UNC. *Neotyphodium coenophialum* would be covered as a synonym of *Epichloe coenophiala* under the UPOV Code EPICH_COE, and *Neotyphodium uncinatum* would be covered as a synonym of *Epichloe uncinata* under the UPOV Code EPICH_UNC.

47. With regards to NEOTY and NEOTY_LOL, the TWV might wish to consider deletion of these UPOV codes, after a new scientific name for *Neotyphodium lolii* is published in a Code compliant form. *Neotyphodium* would be covered as a synonym of *Epichloe* under the UPOV Code EPICH, and *Neotyphodium lolii* would be covered as a synonym of the *Elsinoe* species under the new UPOV Code for *Elsinoe lolii,* which the Office of the Union would create:

Current			Proposal		
UPOV code	Principal botanical name	Other botanical name(s)	UPOV code	Principal botanical name	Other botanical name(s)
NEOTY	*Neotyphodium*	n.a.	EPICH	*Epichloe* (Fr.) Tul. & C. Tul.	*Neotyphodium* Glenn, C.W. Bacon & Hanlin; *Cordyceps* subgen. *Epichloe* Fr.
NEOTY_ACR	*Neotyphodium acremonium*	*Acremonium*	[to delete]	n.a.	n.a.
NEOTY_COE	*Neotyphodium coenophialum*	n.a.	EPICH_COE	*Epichloe coenophiala* (Morgan-Jones & W. Gams) C.W. Bacon & Schardl	*Acremonium coenophialum* Morgan-Jones & W. Gams; *Neotyphodium coenophialum* (Morgan-Jones & W. Gams) Glenn, C.W. Bacon & Hanlin; *Epichloe typhina sensu* Neill
NEOTY_LOL	*Neotyphodium lolii*	n.a.	[ELSIN_LOL]	*Elsinoe lolii* [once published in a Code compliant form]	*Neotyphodium lolii* (Latch, M.J. Chr. & Samuels) Glenn, C.W. Bacon & Hanlin
NEOTY_UNC	*Neotyphodium uncinatum* (W. Gams, Petrini & D. Schmidt) Glenn, C.W. Bacon & Hanlin	n.a.	EPICH_UNC	*Epichloe uncinata* (W. Gams, Petrini & D. Schmidt) Leuchtm. & Schardl	*Acremonium uncinatum* W. Gams, Petrini & D. Schmidt; *Neotyphodium uncinatum* (W. Gams, Petrini & D. Schmidt) Glenn, C.W. Bacon & Hanlin

UPOV code for Citrus limettioides

Background

48. The Office of the Union was informed of a duplication of UPOV codes for *Citrus limettioides* Tanaka.

49. The current entries in the GENIE database for *Citrus limettioides*, the taxa in GRIN and the numbers of entries in the PLUTO database, are as follows:

UPOV code	Principal botanical name in GENIE	Botanical name(s) in GRIN	Common name(s) in GENIE	Numbers of Entries in PLUTO
CITRU_LMT	*Citrus limettioides* Tanaka	*Citrus limettioides* Tanaka	Indian sweet lime, Palestine sweet lemon, Palestine sweet lime, sweet lime	0
CITRU_LIT	*Citrus limettioides* Tanaka	*Citrus limettioides* Tanaka	Indian sweet lime; Palestine sweet lemon	0

Proposal

50. The TWF might wish to consider deletion of the UPOV Code CITRU_LMT, as follows:

Current			Proposal		
UPOV code	Principal botanical name	Other botanical name(s)	UPOV code	Principal botanical name	Other botanical name(s)
CITRU_LMT	*Citrus limettioides* Tanaka	n.a.	[to delete]	n.a.	n.a.

UPOV code for inter-generic hybrids between Echeveria and Sedum

Background

51. The Office of the Union was informed of the duplication of UPOV codes for inter-generic hybrids between *Echeveria* and *Sedum*.

52. The current entries in the GENIE database for inter-generic hybrids between *Echeveria* and *Sedum*, the taxa in GRIN and the numbers of entries in the PLUTO database, are as follows:

UPOV code	Principal botanical name in GENIE	Botanical name(s) in GRIN	Common name(s) in GENIE	Numbers of Entries in PLUTO
ECSED	*Echeveria* DC. x *Sedum* L.	×*Sedeveria* E. Walther (with a comment "= Sedum × Echeveria")	n.a.	0
ECSED_EMO	*Echeveria elegans* Rose. *x Sedum morganianum* E. Walther	n.a.	n.a.	0
SEDEV	×*Sedeveria* spp.	×*Sedeveria* E. Walther (with a comment "= Sedum × Echeveria")	n.a.	1

Proposal

53. The TWO might wish to consider deletion of the UPOV Codes ECSED and ECSED_EMO. *Echeveria elegans* Rose. x*Sedum morganianum* E. Walther would be covered by the new UPOV Code SEDEV_EMO, which the Office of the Union would create. The principal botanical name of the UPOV Code SEDEV would include the wording "(hybrids between *Echeveria* DC. and *Sedum* L.)" after "×*Sedeveria* E. Walther". *Echeveria lilacina* Kimnach & R. C. Moran x *Sedum suaveolens* Kimnach would be covered by the the new UPOV Code SEDEV_LSU, which the Office of the Union would create, as follows:

Current			Proposal		
UPOV code	Principal botanical name	Other botanical name(s)	UPOV code	Principal botanical name	Other botanical name(s)
ECSED	*Echeveria* DC. x *Sedum* L.	n.a.	[to delete]	n.a.	n.a.
ECSED_EMO	*Echeveria elegans* Rose. x *Sedum morganianum* E. Walther	n.a.	SEDEV _EMO	*Echeveria elegans* Rose. x *Sedum morganianum* E. Walther	n.a.
SEDEV	×*Sedeveria spp.*	*Echeveria lilacina* Kimnach & R. C. Moran x Sedum suaveolens Kimnach; Sedeveria	SEDEV	×*Sedeveria* E. Walther (hybrids between *Echeveria* DC. and *Sedum* L.)	n.a.
n.a.	n.a.	n.a.	SEDEV_LSU	Echeveria lilacina Kimnach & R. C. Moran x Sedum suaveolens Kimnach	n.a.

UPOV codes for Platostoma and Platostoma calcaratum

Background

54. The Office of the Union was informed of the duplication of UPOV codes for *Platostoma* and *Platostoma calcaratum*.

55. The current entries in the GENIE database for *Platostoma* and *Platostoma calcaratum*, the taxa in GRIN and the numbers of entries in the PLUTO database, are as follows:

UPOV code	Principal botanical name in GENIE	Botanical name(s) in GRIN	Common name(s) in GENIE	Numbers of Entries in PLUTO
PLATO	*Platostoma* P. Beauv.	*Platostoma* P. Beauv.	n.a.	0
CRTNT	*Ceratanthus*	*Platostoma* P. Beauv. (synonym: *Ceratanthus* F. Muell. ex G. Taylor)	n.a.	0
PLATO_CAL	*Platostoma calcaratum* (Hemsl.) A. J. Paton	*Platostoma calcaratum* (Hemsl.) A. J. Paton	n.a.	0
CRTNT_CAL	*Ceratanthus calcaratus* (Hemsl.) G. Taylor	*Platostoma calcaratum* (Hemsl.) A. J. Paton (synonym: *Ceratanthus calcaratus* (Hemsl.) G. Taylor)	n.a.	1

56. The deletion of the UPOV Codes CRTNT and CRTNT_CAL was presented in Annex III, part A "UPOV codes amendments to be checked" to document TWO/48/5 "UPOV Information Databases" but has not yet been implemented.

Proposal

57. The TWO might wish to consider deletion of the UPOV Codes CRTNT and CRTNT_CAL. *Ceratanthus* F. Muell. ex G. Taylor would be covered by the UPOV Code PLATO and *Ceratanthus calcaratus* (Hemsl.) G. Taylor would be covered by the UPOV Code PLATO_CAL, as follows:

Current			Proposal		
UPOV code	Principal botanical name	Other botanical name(s)	UPOV code	Principal botanical name	Other botanical name(s)
CRTNT	*Ceratanthus*	n.a.	[to delete]	n.a.	n.a.
PLATO	*Platostoma* P. Beauv.	*Ceratanthus*	PLATO	*Platostoma* P. Beauv.	*Ceratanthus* F. Muell. ex G. Taylor
CRTNT_CAL	*Ceratanthus calcaratus* (Hemsl.) G. Taylor	n.a.	[to delete]	n.a.	n.a.
PLATO_CAL	*Platostoma calcaratum* (Hemsl.) A. J. Paton	Ceratanthus calcaratus (Hemsl.) G. Taylor	PLATO_CAL	*Platostoma calcaratum* (Hemsl.) A. J. Paton	*Ceratanthus calcaratus* (Hemsl.) G. Taylor

UPOV codes for Digitalis, Isoplexis and hybrids between Digitalis and Isoplexis

Background

58. The Office of the Union was informed of the duplication of UPOV codes for *Digitalis*, *Isoplexis* and hybrids between *Digitalis* and *Isoplexis*.

59. The current entries in the GENIE database for *Digitalis*, *Isoplexis* and hybrids between *Digitalis* and *Isoplexis* and their species, the taxa in GRIN and the numbers of entries in the PLUTO database, are as follows:

UPOV code	Principal botanical name in GENIE	Botanical name(s) in GRIN	Common name(s) in GENIE	Numbers of Entries in PLUTO
DGTLS	*Digitalis* L.	*Digitalis* L.	Foxglove	26
ISOPL	*Isoplexis* (Lindl.) Loudon	*Digitalis* L. (synonym: *Isoplexis* (Lindl.) Loudon)	n.a.	0
ISOPL_CAN	*Isoplexis canariensis* (L.) Lindl.	*Digitalis canariensis* L. (synonym: *Isoplexis canariensis* (L.) Lindl.)	n.a.	0
DGISO	*Digitalis* L. × *Isoplexis* (Lindl.) Loudon	n.a.	n.a.	0
DGISO_PCA	*Digitalis purpurea* L. × *Isoplexis canariensis (L.) Lindl.*	n.a.	n.a.	8
DGTLS_PUR	*Digitalis purpurea* L.	*Digitalis purpurea* L.	Common Foxglove; Purple Foxglove; digitalis; foxglove	6

60. The deletion of the UPOV Codes ISOPL, DGISO and DGISO_PCA was presented in Annex III, part A “UPOV codes amendments to be checked” to document TWP/1/4 “UPOV information databases” but has not yet been implemented.

Proposal

61. The TWO might wish to consider deletion of the UPOV Codes ISOPL, DGISO, ISOPL_CAN and DGISO_PCA. *Isoplexis* (Lindl.) Loudon would be covered by the UPOV Code DGTLS as a synonym of *Digitalis* L. and *Isoplexis canariensis* (L.) Lindl. would be covered by the new UPOV Code DGTLS_CAN, which the

Office of the Union would create. *Digitalis purpurea* L. × *Isoplexis canariensis (L.) Lindl.* would be covered by the new UPOV Code DGTLS_PCA, which the Office of the Union would create, as follows:

Current			Proposal		
UPOV code	Principal botanical name	Other botanical name(s)	UPOV code	Principal botanical name	Other botanical name(s)
DGTLS	*Digitalis* L.	*Digiplexis* ined.?; *Isoplexis* (Lindl.) Loudon	DGTLS	*Digitalis* L.	×*Digiplexis* ined.; *Isoplexis* (Lindl.) Loudon ; *Digitalis* L. × *Isoplexis* (Lindl.) Loudon
ISOPL	*Isoplexis* (Lindl.) Loudon	n.a.	[to delete]	n.a.	n.a.
ISOPL_CAN	*Isoplexis canariensis* (L.) Lindl.	n.a.	DGTLS _CAN	*Digitalis canariensis* L.	*Isoplexis canariensis* (L.) Lindl
DGISO	*Digitalis* L. × *Isoplexis* (Lindl.) Loudon	n.a.	[to delete]	n.a.	n.a.
DGISO_PCA	*Digitalis purpurea* L. × *Isoplexis canariensis (L.) Lindl.*	n.a.	DGTLS _PCA	*Digitalis purpurea* L. × *Digitalis canariensis* L.	*Digitalis purpurea* L. × *Isoplexis canariensis (L.) Lindl.*

62. The TWPs are invited to note that:

(a) 440 new UPOV codes were created in 2017 and a total of 8,589 UPOV codes are included in the GENIE database; and

(b) the Office of the Union received a request to create new UPOV codes for 191 forest tree species moving in international trade under the OECD certification schemes. The requested UPOV codes were introduced in GENIE by September 2017. DG SANTE has proposed the establishment of an administrative arrangement between the Office of the Union and the European Commission to cover collaboration in scientific names of plant species present in each other's databases and, in particular, regarding the attribution of UPOV codes to plant species in FOREMATIS.

63. The TWA, TWV, TWF and TWO are invited to:

(a) check the amendments to UPOV codes, the new UPOV codes or new information added for existing UPOV codes, and the UPOV codes used in the PLUTO database for the first time, which are provided in Annex V to this document; and

(b) submit comments on Annex V, part A "UPOV codes amendments to be checked", part B "New UPOV codes or new information", and part C "Crop type(s) of UPOV codes used in the PLUTO database for the first time" to the Office of the Union by March 31, 2019.

64. The TWA is invited to:

(a) consider the proposal to amend codes for ZEAAA, as set out in paragraph 23 of this document;

(b) consider the proposal to amend UPOV Codes for subspecies in the Mucuna genus, as set out in paragraph 26 of this document; and

(c) consider the proposal to amend the UPOV Code for Sesbania sesban, as set out in paragraph 29 of this document.

65. The TWV is invited to:

(a) consider the proposal to amend UPOV codes for Brassica oleracea with the consequent changes to the UPOV codes, as set out in Annex II to this document, and the revision of the Section 2.3 of the "Guide to the UPOV Code System", as set out in Annex III to this document;

(b) consider the proposal to allocate the UPOV code BRASS_OLE to the hybrids between Brassica oleracea *L. var.* acephala *and* Brassica oleracea *L. var.* botrytis*, as set out in paragraph 42, subject to agreement to the proposal provided in Annex II to this document;*

(c) consider how to address the hybrids between Brassica oleracea *L. var.* acephala *and* Brassica oleracea *L. var.* botrytis*, as set out in paragraph 43, in the case that the TWV rejects the proposal provided in Annex II to this document; and*

(d) consider the proposal to amend UPOV Codes for Epichloe *species and* Neotyphodium *species, as set out in paragraphs 46 and 47 of this document.*

66. The TWF is invited to consider the proposal to delete the UPOV Code CITRU_LMT, as set out in paragraph 50 of this document.

67. The TWO is invited to:

(a) consider the proposal to delete the UPOV Codes ECSED and ECSED_EMO, as set out in paragraph 53 of this document;

(b) consider the proposal to delete the UPOV Codes CRTNT and CRTNT_CAL, as set out in paragraph 57 of this document; and

(c) consider the proposal to delete the UPOV Codes ISOPL, DGISO, ISOPL_CAN and DGISO_PCA, as set out in paragraph 61 of this document.

PLUTO DATABASE

Program for improvements to the PLUTO database

68. The CAJ, at its sixty-eighth session, held on October 21, 2013, considered document CAJ/68/6 “UPOV information databases” and approved the amendments to the Program for improvements to the PLUTO database (“Program”) as set out in document CAJ/68/6, Annex II, subject to certain further amendments agreed at that session (see document CAJ/68/10 “Report on the Conclusions”, paragraphs 23 to 26).

69. The Program reflecting amendments approved at previous sessions is available in document TWP/1/4 “UPOV Information Databases”, Annex I.

70. The following paragraphs provide a summary of developments concerning the Program since the fifty-third session of the TC, held in Geneva, from April 3 to 5, 2017.

Provision of assistance to contributors (Program: section 2)

71. Annex IV to this document provides a summary of the contributions to the PLUTO database from 2014 to 2017 and the current situation of members of the Union on data contribution.

Search tools

72. Matters concerning the possible development of a similarity search tool for variety denomination purposes are reported in document TWP/2/6 “Variety Denominations”.

Content of the PLUTO Database

73. The background of this matter is provided in document TWP/1/4 “UPOV information databases”, paragraph 29 to 33.

74. The WG-DEN, at its fourth meeting, held in Geneva on October 27, 2017, agreed that matters under agenda item 5 “Expansion of the content of the PLUTO database” would be considered at a later meeting on the basis of the document presented at the second meeting. It was agreed that the Office of the Union should propose how to progress the discussion on this matters at the fifth meeting of the WG-DEN.

75. The fifth meeting of the WG-DEN will be held in Geneva, on October 30, 2018.

76. The TWPs are invited to note:

(a) the summary of contributions to the PLUTO database from 2014 to 2017 and the current situation of members of the Union on data contribution, as presented in the Annex IV to this document; and

(b) that the WG-DEN, at its fourth meeting, held in Geneva on October 27, 2017, agreed that matters under agenda item 5 “Expansion of the content of the PLUTO database” would be considered at a later meeting on the basis of the document presented at the second meeting. It was agreed that the Office of the Union should propose how to progress the discussion on this matters.

[Annexes follow]

ANNEX I

CURRENT SITUATION FOR BRASSICA OLERACEA

UPOV code	Principal botanical name in GENIE	Botanical name(s) in GRIN	Common name(s) in GENIE	Numbers of Entries in PLUTO
BRASS_OLE	*Brassica oleracea* L.	*Brassica oleracea* L.	n.a.	3,794
BRASS_OLE_GA	*Brassica oleracea* L. *convar. acephala* (DC.) Alef.	Synonym for *Brassica oleracea* L.	Kale	156
BRASS_OLE_GAM	*Brassica oleracea* L. *convar. acephala* (DC.) Alef. *var. medullosa* Thell.	*Brassica oleracea* L. var. *medullosa* Thell.	Marrow-stem Kale	28
BRASS_OLE_GAR	*Brassica oleracea* L.var. *ramosa* DC.	*Brassica oleracea* L. var. *ramosa* DC.	branching bush kale; branching cabbage; perennial kale; perpetual kale; thousand-head kale	0
BRASS_OLE_GAS	*Brassica oleracea* L. *convar. acephala (DC.)* Alef. var. *sabellica* L.	*Brassica oleracea* L. var. *sabellica* L.	Borecole; Curly Kale; Dwarf Siberian kale; Kitchen kale; Scotch kale	415
BRASS_OLE_GAV	*Brassica oleracea* L. *convar. acephala* (DC.) Alef. var. *viridis* L.	*Brassica oleracea* L. var. *viridis* L.	Collards; Cow cabbage; Fodder Kale; Kale; Spring-heading cabbage; Tall kale; Tree kale	160
BRASS_OLE_GB	*Brassica oleracea* L. convar. *botrytis* (L.) Alef.	Synonym for *Brassica oleracea* L.	n.a.	298
BRASS_OLE_GBB	*Brassica oleracea* L. *convar. botrytis* (L.) Alef. var. *botrytis*	*Brassica oleracea* L. var. *botrytis* L.	Cauliflower	3,522
BRASS_OLE_GBC	*Brassica oleracea* L. var. *italica* Plenck	*Brassica oleracea* L. var. *italic* Plenck	Calabrese; Cape broccoli; Sprouting Broccoli; Winter broccoli; asparagus broccoli; broccoli; heading broccoli; purple cauliflower	1,043
BRASS_OLE_GC	*Brassica oleracea* L. convar. *capitata* (L.) Alef.	*Brassica oleracea* L. var. *capitata* L.	Cabbage	292
BRASS_OLE_GCA	*Brassica oleracea L. convar. capitata* (L.) Alef. var. *alba* DC.	Synonym for *Brassica oleracea* L. var. *capitata* L.	White Cabbage	3,747
BRASS_OLE_GCR	*Brassica oleracea* L. *convar. capitata* (L.) Alef. var. *rubra* (L.) Thell.	Synonym for *Brassica oleracea* L. var. *capitata* L.	Red Cabbage	619
BRASS_OLE_GCS	*Brassica oleracea* L. convar. *capitata* (L.) Alef. var. *sabauda* L.	*Brassica oleracea* L. var. *sabauda* L.	Savoy Cabbage	533
BRASS_OLE_GGM	*Brassica oleracea* L. var. *gemmifera* Zenker	*Brassica oleracea* L. var. *gemmifera* DC.	Brussels Sprouts	950
BRASS_OLE_GGO	*Brassica oleracea* L. var. *gongylodes* L.	*Brassica oleracea* L. var. *gongylodes* L.	Kohlrabi; Stem turnip	543
BRASS_OLE_ALB	*Brassica oleracea* L. var. *alboglabra* (L. H. Bailey) Musil	*Brassica oleracea* L. var. *alboglabra* (L. H. Bailey) Musil	Chinese broccoli; Chinese kale	0
BRASS_OLE_COS	*Brassica oleracea* L. var. *costata* DC.	*Brassica oleracea* L. var. *costata* DC.	Bedford cabbage; Braganza; Portugese cole; Portuguese kale; Seakale cabbage; Tronchuda cabbage; Tronchuda kale	16

[Annex II follows]

ANNEX II

PROPOSAL ON CHANGES TO THE UPOV CODES FOR BRASSICA OLERACEA

Current			Proposal		
UPOV code	Principal botanical name	Other botanical name(s)	UPOV code	Principal botanical name	Other botanical name(s)
BRASS_OLE	*Brassica oleracea* L.	n.a.	BRASS_OLE	*Brassica oleracea* L.	*Brassica oleracea* L. *convar. acephala* (DC.) Alef.; *Brassica oleracea* L. convar. *botrytis* (L.) Alef.
BRASS_OLE_GA	*Brassica oleracea* L. *convar. acephala* (DC.) Alef.	n.a.	[to delete]	n.a.	n.a.
BRASS_OLE_GAM	*Brassica oleracea* L. *convar. acephala* (DC.) Alef. *var. medullosa* Thell.	*Brassica oleracea* L. var. *medullosa* Thell.	BRASS_OLE_GAM	*Brassica oleracea* L. var. *medullosa* Thell.	*Brassica oleracea* L. *convar. acephala* (DC.) Alef. *var. medullosa* Thell.
BRASS_OLE_GAS	*Brassica oleracea* L. *convar. acephala (DC.)* Alef. var. *sabellica* L.	*Brassica oleracea* L. var. *sabellica* L.	BRASS_OLE_GAS	*Brassica oleracea* L. var. *sabellica* L.	*Brassica oleracea* L. *convar. acephala (DC.)* Alef. var. *sabellica* L.
BRASS_OLE_GAV	*Brassica oleracea* L. *convar. acephala* (DC.) Alef. var. *viridis* L.	*Brassica oleracea* L. var. *viridis* L.	BRASS_OLE_GAV	*Brassica oleracea* L. var. *viridis* L.	*Brassica oleracea* L. *convar. acephala* (DC.) Alef. var. *viridis* L.
BRASS_OLE_GB	*Brassica oleracea* L. convar. *botrytis* (L.) Alef.	n.a.	[to delete]	n.a.	n.a.
BRASS_OLE_GBB	*Brassica oleracea* L. *convar. botrytis* (L.) Alef. var. *botrytis*	*Brassica cauliflora lizg*	BRASS_OLE_GBB	*Brassica oleracea* L. var. *botrytis* L.	*Brassica oleracea* L. *convar. botrytis* (L.) Alef. var. *botrytis;* *Brassica cauliflora lizg*
BRASS_OLE_GC	*Brassica oleracea* L. convar. *capitata* (L.) Alef.	*Brassica oleracea* L. var. *capitata* L.	BRASS_OLE_GCC	*Brassica oleracea* L. var. *capitata* L.	*Brassica oleracea* L. convar. *capitata* (L.) Alef.; *Brassica oleracea* L. convar. *capitata* (L.) Alef. var. *capitata* (L.) Alef.*;* *Brassica oleracea L. convar. capitata* (L.) Alef. var. *alba* DC.; *Brassica oleracea* L. convar. *capitata* (L.) Alef. var. *capitata* L. f. *alba* DC. *Brassica oleracea* L. *convar. capitata* (L.) Alef. var. *rubra* (L.) Thell.; Brassica oleracea L. convar. capitata (L.) Alef. var. capitata L. f. rubra (L.) Thell.; *Brassica oleracea* L. convar. *capitata* (L.) Alef. var. *alba* DC. x *Brassica oleracea L. convar. capitata* (L.) Alef. var. *rubra* (L.) Thell
BRASS_OLE_GCA	*Brassica oleracea L. convar. capitata* (L.) Alef. var. *alba* DC.	*Brassica oleracea* L. convar. *capitata* (L.) Alef. var. *capitata* L. f. *alba* DC.	[to delete]	n.a.	n.a.
BRASS_OLE_GCR	*Brassica oleracea* L. *convar. capitata* (L.) Alef. var. *rubra* (L.) Thell	Brassica oleracea L. convar. capitata (L.) Alef. var. capitata L. f. rubra (L.) Thell.	[to delete]	n.a.	n.a.
BRASS_OLE_GCS	*Brassica oleracea* L. convar. *capitata* (L.) Alef. var. *sabauda* L.	*Brassica oleracea* L. convar. *capitata (L.)* Alef. var. *bullata* DC.	BRASS_OLE_GCS	*Brassica oleracea* L. var. *sabauda* L.	*Brassica oleracea* L. convar. *capitata* (L.) Alef. var. *sabauda* L. ; *Brassica oleracea* L. convar. *capitata (L.)* Alef. var. *bullata* DC.

[Annex III follows]

ANNEX III

PROPOSAL ON THE REVISION OF THE SECTION 2.3 OF THE "GUIDE TO THE UPOV CODE SYSTEM"

Note for Draft revision

~~Strikethrough~~ (highlighted in grey) indicates deletion from the text of the "Guide to the UPOV Code System".

Underlining (highlighted in grey) indicates insertion to the text of the "Guide to the UPOV Code System".

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~~ *Beta vulgaris* 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:

UPOV code	*Botanical name*	*Common name*
BETAA_VUL	**Beta vulgaris L.**	
BETAA_VUL_GV	**Beta vulgaris L. ssp. vulgaris**	**Beet**
BETAA_VUL_**G**VA	Beta vulgaris L. ssp. vulgaris var. alba DC.	Fodder beet
BETAA_VUL_**G**VC	Beta vulgaris L. ssp. vulgaris var. conditiva Alef.	Beetroot
BETAA_VUL_**G**VF	Beta vulgaris L. ssp. vulgaris var. flavescens DC.	Leaf beet
BETAA_VUL_**G**VS	Beta vulgaris L. ssp. vulgaris var. saccharifera Alef.	Sugar beet
~~**BRASS_OLE_GA**~~	~~**Brassica oleracea L. convar. acephala (DC.) Alef.**~~	~~**Kale**~~
~~BRASS_OLE_**G**AM~~	~~Brassica oleracea L. convar. acephala (DC.) Alef. var. medullosa Thell.~~	~~Marrow-stem kale~~
~~BRASS_OLE_**G**AR~~	~~Brassica oleracea L. var. ramosa DC.~~	~~Catjang~~
~~BRASS_OLE_**G**AS~~	~~Brassica oleracea L. convar. acephala (DC.) Alef. var. sabellica L.~~	~~Curly kale~~
~~BRASS_OLE_**G**AV~~	~~Brassica oleracea L. convar. acephala (DC.) Alef. var. viridis L.~~	~~Fodder kale~~
~~**BRASS_OLE_GB**~~	~~**Brassica oleracea L. convar. botrytis (L.) Alef.**~~	
~~BRASS_OLE_**G**BB~~	~~Brassica oleracea L. convar. botrytis (L.) Alef. var. botrytis~~	~~Cauliflower~~
~~BRASS_OLE_**G**BC~~	~~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_**G**CA~~	~~Brassica oleracea L. convar. capitata (L.) Alef. var. capitata L. f. alba DC.~~	~~White cabbage~~
~~BRASS_OLE_**G**CR~~	~~Brassica oleracea L. convar. capitata (L.) Alef. var. capitata L. f. rubra (L.) Thell.~~	~~Red cabbage~~
~~BRASS_OLE_**G**CS~~	~~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**~~

[Annex IV follows]

ANNEX IV

REPORT ON DATA CONTRIBUTED TO THE PLANT VARIETY DATABASE BY MEMBERS OF THE UNION AND OTHER CONTRIBUTORS AND ASSISTANCE FOR DATA CONTRIBUTION

Contributor	Number of applications for Plant Breeders' Rights in 2016	Number of new data submissions to the Plant Variety Database in 2014	Number of new data submissions to the Plant Variety Database in 2015	Number of new data submissions to the Plant Variety Database in 2016	Number of new data submissions to the Plant Variety Database in 2017	Situation at March 31, 2018
African Intellectual Property Organization	0	0	0	0	0	A reminder e-mail with instructions for contribution sent on January, 2018, following receipt of incomplete data.
Albania	0	0	1	1	0	Latest data under preparation
Argentina	238	0	0	1	0	Regularly contributing data A reminder for latest data contribution sent in January, 2018.
Australia	387	3	5	7	5	Regularly contributing data
*Austria	2	3	3	4	4	
Azerbaijan	19 (2014)	0	0	0	0	Awaiting reply to e-mail of January, 2018, inviting data.
Belarus	20	0	0	1	0	Awaiting reply to e-mail of January, 2018, inviting data.
*Belgium	4	4	6	5	3	
Bolivia (Plurinational State of)	15	0	0	1	1	Regularly contributing data
Bosnia and Herzegovina	n.a.	n.a.	n.a.	n.a.	0	Data under preparation.
Brazil	326	4	3	0	3	Regularly contributing data
*Bulgaria	35	5	12	6	3	
Canada	282	5	7	11	11	Regularly contributing data
Chile	90	2	4	6	5	Regularly contributing data
China	2,923	1	2	1	1	Regularly contributing data (State Forestry Administration)
Colombia	122	0	0	0	2	Regularly contributing data
Costa Rica	2	2	1	3	2	Regularly contributing data
*Croatia	6	0	3	2	2	
*Czech Republic	68	4	3	6	9	
*Denmark	3	8	12	11	10	
Dominican Republic	0 (2011)	0	0	0	0	Awaiting reply to e-mail of January, 2018, inviting data.
Ecuador	83	1	0	0	1	Regularly contributing data
*Estonia	10	4	9	3	3	
*European Union	3,299	6	10	13	7	
*Finland	7	2	2	2	2	
*France	94	6	13	11	8	

( ) Parenthesis indicates that data are currently being processed.

* Data provided via the CPVO.

Contributor	Number of applications for Plant Breeders' Rights in 2016	Number of new data submissions to the Plant Variety Database in 2014	Number of new data submissions to the Plant Variety Database in 2015	Number of new data submissions to the Plant Variety Database in 2016	Number of new data submissions to the Plant Variety Database in 2017	Situation at March 31, 2018
Georgia	48	1	0	2	0	Awaiting reply to e-mail of January, 2018, inviting data.
*Germany	56	8	11	12	8	
*Hungary	15	6	16	19	14	
*Iceland	0 (2012)	0	0	0	0	
*Ireland	2 (2014)	2	2	2	1	
Israel	56	2	1	1	1	Regularly contributing data
*Italy	12	4	8	6	6	
Japan	977	5	4	1	2	Regularly contributing data
Jordan	3	0	0	1	0	Awaiting reply to e-mail of January, 2018, inviting data.
Kenya	75	2	0	1	0	Awaiting reply to e-mail of January, 2018, inviting data.
Kyrgyzstan	0	1	0	0	0	Latest data under preparation
*Latvia	10	3	1	1	2	
*Lithuania	2	2	3	4	4	
Mexico	234	1	1	3	3	Regularly contributing data
Montenegro	n/a	-	0	0	0	Awaiting reply to e-mail of March, 2017, inviting data.
Morocco	64	0	2	0	0	Awaiting reply to e-mail of January, 2017, inviting data.
*Netherlands	804	2	10	11	8	
New Zealand	132	5	6	5	6	Regularly contributing data
Nicaragua	12 (2015)	0	0	0	0	Participated in the training course in 2015 and planned to submit data by end of November 2015. Awaiting reply to e-mail of January, 2018, inviting data.
*Norway	8	1	4	3	4	
Oman	0	0	0	0	2	Regularly contributing data
Panama	1	0	0	1	1	Regularly contributing data
Paraguay	62	0	1	1	0	Awaiting reply to e-mail of January, 2018, inviting data.
Peru	29	2	0	0	1	Regularly contributing data
*Poland	115	5	3	5	7	
*Portugal	3	2	0	2	1	
Republic of Korea	966	1	0	1	0	Regularly contributing data With regard to latest data, clarifications needed for uploading to PLUTO.
Republic of Moldova	22	2	3	3	1	Regularly contributing data
*Romania	34	4	4	4	4	
Russian Federation	772	2	5	5	5	Regularly contributing data
Serbia	50	2	3	4	2	Regularly contributing data
Singapore	1	0	0	0	0	Awaiting reply to e-mail of January, 2018, inviting data.
*Slovakia	21	4	4	5	6	

Contributor	Number of applications for Plant Breeders' Rights in 2016	Number of new data submissions to the Plant Variety Database in 2014	Number of new data submissions to the Plant Variety Database in 2015	Number of new data submissions to the Plant Variety Database in 2016	Number of new data submissions to the Plant Variety Database in 2017	Situation at March 31, 2018
*Slovenia	0 (2015)	5	5	5	3	
South Africa	310	0	0	1	2	Regularly contributing data
*Spain	40	5	5	5	5	
*Sweden	5	6	11	12	11	
*Switzerland	72	7	6	5	6	
The former Yugoslav Republic of Macedonia	n/a	0	0	0	0	Participated in the training course in 2014 and planned to submit data upon receipt of applications. Awaiting reply to e-mail of March, 2018, inviting data.
Trinidad and Tobago	0	0	0	0	0	Participated in the training course in 2014. Awaiting reply to e-mail of March, 2018, inviting data.
Tunisia	62	0	0	0	0	Awaiting reply to e-mail of March, 2018, inviting data.
*Turkey	193	1	1	3	0	
Ukraine	1,274	0	0	0	0	Awaiting reply to e-mail of March, 2018, inviting data.
*United Kingdom	54	10	11	13	10	
United Republic of Tanzania	0	-	0	0	0	Awaiting reply to e-mail of March, 2018, inviting data.
United States of America	1,604	10	17	16	12	Regularly contributing data
Uruguay	48	1	1	0	0	Regularly contributing data With regard to latest data, clarifications needed for uploading in PLUTO.
Uzbekistan	20	0	0	0	0	Participated in the training course in 2014 and planned to submit data in 2015. Awaiting reply to e-mail of March, 2018, inviting data.
Viet Nam	185	0	0	0	0	Participated in the training course in 2014 and planned to submit data in 2015. Data under preparation.
OECD	-	1	0	2	2	Regularly contributing data
Number of UPOV members that contributed to the PLUTO database		44	48	45	48	
Percentage of UPOV members that contributed to the PLUTO database		62%	67%	61%	64%	

[Annex V follows]

ANNEX V

[See Excel files]

[End of Annex V and of document]