UPOV

International Union for the Protection of New Varieties of Plants

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Technical Working Party for Vegetables
Fifty-Fifth Session
Antalya, Turkey, May 3 to 7, 2021

Technical Working Party for Ornamental Plants and Forest Trees
Fifty-Third Session
Roelofarendsveen, Netherlands, June 7 to 11, 2021

Technical Working Party for Agricultural Crops
Fiftieth Session
Arusha, United Republic of Tanzania, June 21 to 25, 2021

Technical Working Party for Fruit Crops
Fifty-Second Session
Zhengzhou, China, July 12 to 16, 2021

Technical Working Party on Automation and Computer Programs
Thirty-Ninth Session
Alexandria, United States of America, September 20 to 22, 2021

TWP/5/4.

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UPOV INFORMATION AND DATABASES

Document prepared by the Office of the Union

Disclaimer: this document does not represent UPOV policies or guidance

EXECUTIVE SUMMARY

1.   The purpose of this document is to report on developments concerning the UPOV code system and to present a proposal to amend the UPOV code system to provide information on variety types, groups and denomination class.

2.   The TWPs are invited to:

(a)   note that 177 new UPOV codes were created in 2020 and a total of 9,213 UPOV codes are included in the GENIE database;

(b)   consider the proposal to revise the UPOV code system , as set out in document UPOV/INF/23/1 Draft 2;

(c)   note that the proposals for amending UPOV codes in this document are made on the basis that they would be made in conjunction with the adoption of document UPOV/INF/23/1; and

(d)   note that a timetable for implementing the proposed changes would be presented to the TC for approval at its fifty-seventh session.

3.   The TWA and TWV are invited to consider:

(a)   the proposal to amend the UPOV codes for *Beta vulgaris*, as reproduced in Annex I to this document; and

(b)   appending information on denomination classes to UPOV codes for *Beta vulgaris* to establish the following groups:

(i) Fodder beet: Class 2.1 ("21F");

    (ii) Sugar beet group: Class 2.1 ("21S");
    (iii) Beetroot: Class 2.2 ("22R");
    (iv) Leaf beet: Class 2.2 ("22L")

    (c)   the proposal to amend the UPOV codes for subspecies of *Zea mays*, as presented in paragraph 71 of this document; and

    (d)   appending information on variety types or groups to the UPOV code ZEAAA_MAY_MAY to establish the following variety types or groups:

    (i) Corn; Maize: "1MA";
    (ii) Sweet Corn: "2SW";
    (iii) Popcorn: "3PO";
    (iv) Durango teosinte; Mexican teosinte; Rayana grass: "4TE"

4.   The TWO is invited to consider:

    (a)   the proposal to delete the UPOV Codes DICEN_SPE, as set out in paragraph 80 of this document;

    (b)   the proposal to delete the UPOV Codes ALOEE_ARI, as set out in paragraph 84 of this document;

5.   The TWO, TWV, TWF and TWA 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 IV to this document; and

    (b)   submit comments on 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" to the Office of the Union by December 31, 2021.

6.   The TWV is invited to consider:

    (a)   amending the botanical names for *Brassica oleracea* in accordance with GRIN, with the consequent changes to the UPOV codes in relation to groups, as provided in the Appendix to Annex III of this document; and

    (b)   appending information to the UPOV code for *Brassica oleracea* L. var. *capitata* L. (BRASS_OLE_GC) to create variety groups or types for White and Red Cabbage, as set out in paragraph 62 of this document.

7.   The TWF is invited to consider:

    (a)   appending the following information to UPOV code CITRU_AUM to create groups (1) Mandarins; and (2) Oranges;

    (b)   amending the UPOV code CITRU_AUM, following the reclassification of *Citrus clementina* hort. ex Tanaka (UPOV code: CITRU_CLE) as a synonym of *Citrus aurantium* L. (UPOV code: CITRU_AUM), as set out in Annex II to this document; and

    (c)   whether to propose the partial revision of the Test Guidelines for Citrus to move obsolete species from the "principle botanical names" box to the "alternative botanical names" box.

8.   The structure of this document is as follows:

9.   The following abbreviations are used in this document:

CAJ: Administrative and Legal Committee
ISTA   International Seed Testing Association
GRIN: Germplasm Resources Information Network
TC: Technical Committee
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

GENIE DATABASE

Background

10.   The GENIE database (http://www.upov.int/genie/en/) has been developed to provide online information
on the status of protection, cooperation in examination, experience in DUS testing and existence of
UPOV Test Guidelines for different GENera and specIEs (hence GENIE). The GENIE database is used to
generate the relevant Council and TC documents concerning that information[1].

11.   The GENIE database is the repository of the UPOV codes and provides information concerning the
principal and alternative botanical names and common names of plant taxa.

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[1]   See documents C/[session]/INF/6 "*List of the taxa protected by the members of the Union*; C/[session]/INF/5 "*Cooperation in
       Examination*"; TC/[session]/INF/4 "*List of genera and species for which authorities have practical experience in the examination of
       distinctness, uniformity and stability*"; and TC/[session]/2 "*Test Guidelines*".

UPOV CODE SYSTEM

12.   The "Guide to the UPOV Code System", as amended by the TC, at its forty-eighth session[2], and the CAJ, at its sixty-fifth session[3], is reproduced in Annex I to documents TC/49/6 and CAJ/67/6 and is available on the UPOV website (see https://www.upov.int/genie/resources/pdfs/upov_code_system_en.pdf).

13.   The Consultative Committee, at its ninety-sixth session, held in Geneva on October 31, 2019, noted that, at the appropriate time, the Council would be invited to adopt the "Program for improvements to the PLUTO database" and the "Guide to the UPOV Code System", which would be made accessible via the UPOV Collection UPOV/INF document series (document CC/96/14, "Report", paragraph 85).

14.   The TC, at its fifty-sixth session[4], noted the report from the Office of the Union that the CAJ, on October 25, 2020, in the procedure by correspondence, had approved the "Guide to the UPOV Code System", on the basis of document UPOV/INF/23/1 Draft 1, and proposed that the TC consider a new draft of document UPOV/INF/23/1 "Guide to the UPOV Code System" in 2021 (see document CAJ/77/9 "Outcome of consideration of documents by correspondence", paragraphs 26 and 27).

UPOV code developments

15.   In 2020, 177 new UPOV codes were created. The total number of UPOV codes in the GENIE database as of December 31, 2020 was 9,213.

	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
New UPOV codes	173	212	209	577	188	173	440	242	243	177
Amendments	12	5	47*	37	11	16	1	5	3	44
Total UPOV Codes	6,851	7,061	7,251	7,808	7,992	8,149	8,589	8,844	9,077	9,213

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

16.   The TWPs are invited to note that 177 new UPOV codes were created in 2020 and a total of 9,213 UPOV codes are included in the GENIE database.

AMENDING THE UPOV CODE SYSTEM TO PROVIDE INFORMATION ON VARIETY GROUPS OR TYPES

Background

17.   The Technical Committee (TC), at its fifty-fifth session, held in Geneva, on October 28 and 29, 2019, considered the proposed amendments to the "Guide to the UPOV Code System" to reflect the creation of exceptions for the UPOV Codes for popcorn, sweet corn and *Brassica oleracea* (see document TC/55/25 "Report", paragraphs 207 to 210).

18.   The TC recalled that the main purpose of the UPOV Code System was to overcome the problem of synonyms for plant taxa and should be based on taxonomic criteria, also bearing in mind that the UPOV Code System was used by other international organizations, such as ISTA.

19.   The TC agreed that the exceptions proposed to the "Guide to the UPOV Code System" diverged from the Germplasm Resources Information Network (GRIN). The TC agreed that UPOV Codes should continue following GRIN taxonomy as far as possible.

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[2]   Held in Geneva from March 26 to 28, 2012.

[3]   Held in Geneva on March 29, 2012.

[4]   Held via electronic means on October 26 and 27, 2020.

20.   The TC agreed to postpone the amendment to the "Guide to the UPOV Code System" and to explore alternative solutions to enable UPOV Codes to provide useful information on variety groups or types for DUS testing purposes. The TC agreed to invite the Office of the Union to prepare a document with proposals, for consideration at its fifty-sixth session (see document TC/55/25 "Report", paragraph 210).

21.   The Office of the Union contacted members of the Union that expressed a need for solutions to enable UPOV Codes to provide useful information on variety groups or types for DUS testing purposes, to clarify their requirements. Consultations with members of the Union and related discussions, identified that the following elements should be included in proposed solutions:

(a)   group/type or other information for DUS purposes; and
(b)   analysis of variety denominations according to variety denomination classes, irrespective of whether the class follows the General Rule (one genus / one class) or is one of the exceptions to the General Rule (i.e. classes within a genus or class encompassing more than one genus)

22.   The solutions would need to be developed in a way that would enable relevant information to be included in UPOV PRISMA, PLUTO database, GENIE database, Test Guidelines and the Web-based TG Template. The solutions would also need to enable the use of UPOV codes in UPOV members' databases and other relevant organizations, including OECD and ISTA.

Consideration by the Technical Working Parties

23.   At their sessions in 2020, the TWV[5], TWO[6], TWA[7], TWF[8] and TWC[9] noted that the TC, at its fifty-fifth session, had agreed to postpone the amendment to the "Guide to the UPOV Code System" and to explore alternative solutions to enable UPOV Codes to provide useful information on variety groups or types for DUS testing purposes and to invite the Office of the Union to prepare a document with proposals, for consideration at its fifty-sixth session (see documents TWV/54/9 "Report", paragraphs 40 and 41; TWO/52/11 "Report", paragraphs 46 and 47; TWA/49/7 "Report", paragraphs 29 to 31; TWF/51/10 "Report", paragraphs 49 and 50; and TWC/38/11 "Report", paragraphs 27 and 28).

24.   The TWV, TWO, TWA, TWF and TWC noted the developments concerning alternative solutions to enable UPOV Codes to provide useful information on variety groups or types for DUS testing purposes.

25.   The TWA agreed that the introduction of a fourth element to UPOV Codes could be considered as an alternative to provide information on variety groups. The TWA agreed that the TWPs could provide the required information for the establishment of groups for the relevant crops.

Consideration by the Technical Committee

26.   The TC, at its fifty-sixth session[10], considered document TC/56/8 "UPOV information databases" (see document TC/56/22 "Outcome of consideration of documents by correspondence", paragraphs 50 to 53).

27.   The TC agreed to request the Office of the Union to prepare a draft revised "Guide to the UPOV code system" on the basis of the proposal set out in document TC/56/8, paragraphs 15 to 26, for consideration by the TC and CAJ, at their sessions in 2021 and, subject to agreement by CAJ, present the draft revised "Guide to the UPOV code system" (document UPOV/INF/23) for adoption by the Council in 2021.

28.   The TC agreed to request the Office of the Union to invite comments by the TWPs at their sessions in 2021 on the draft revised "Guide to the UPOV code system" (document UPOV/INF/23) on the basis of the proposal presented in the following paragraphs, to assist the TC in its consideration of the draft.

29.   The TWPs, at their sessions in 2021, are invited to consider document UPOV/INF/23/1 Draft 2 "Guide to the UPOV Code System".

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[5]   at its fifty-fourth session, hosted by Brazil and held via electronic means from May 11 to 15, 2020.
[6]   at its fifty-second session, hosted by the Netherlands and held via electronic means from June 8 to 12, 2020.
[7]   at its forty-ninth session, hosted by Canada and held via electronic means from June 22 to 26, 2020.
[8]   at its fifty-first session, hosted by France and held via electronic means from July 6 to 10, 2020.
[9]   at its thirty-eighth session, hosted by the United States of America and held via electronic means from September 21 to 23, 2020.
[10]   Held via electronic means on October 26 and 27, 2020.

Proposal

30.   The purpose of the current UPOV code system is to enhance the usefulness of the UPOV Plant Variety Database (PLUTO) by overcoming the problem of synonyms for plant taxa.

31.   It is proposed to enhance the current UPOV code system by providing additional information appended to existing UPOV codes.

32.   UPOV codes currently have three elements. A new element could be appended to the UPOV code to provide relevant information on variety groups and types and denomination class. The new appended element would become part of the UPOV code system without affecting the existing UPOV code elements (e.g. Genus, species and subspecies).

33.   In general, the following UPOV code construction is currently used:

     (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");

<div align="center">Current UPOV code example: XXXXX_YYY_ZZ1</div>

34.   The new proposed UPOV code format would not change the existing elements, other than restricting the existing elements to letters (see paragraphs 20 and 21, below) and would append an extra element to UPOV codes, as required. The new appended element would be clearly distinguishable from the existing elements in the UPOV code because it would be prefixed by a digit, or comprised exclusively of digits. Furthermore, the new element could be appended to any UPOV code, regardless of plant taxa (genera, species or subspecies levels). Examples:

UPOV code for genus *Abies*: ....ABIES
UPOV code with appended element: ....ABIES_1234

UPOV code for species *Abies sibirica*: ....ABIES_SIB
UPOV code with appended element: ....ABIES_SIB_1234

UPOV code for sub-species *Abies sibirica* subsp. *semenovii*:..........................ABIES_SIB_SEM
UPOV code with appended element: ....ABIES_SIB_SEM_1234

Naming convention:

35.   The new appended element to UPOV codes would be identifiable though the following naming convention:

•   A digit prefix would identify the new appended element.
•   Different digits could, if appropriate, indicate different categories of information.

36.   This approach would require the modification of the existing UPOV code system to avoid digits in the third element ("sub-species" element, e.g. "ZZ1"). Although the general construction of the UPOV code system mentioned the possibility to use numbers in the third element, this possibility has not been used.

Procedure for introducing and amending the new UPOV code element

37.   The relevant TWP(s) would consider proposals for appending the new elements to UPOV codes and any subsequent amendments. The relevant TWP(s) would agree the required information to be appended, including the definition of any groups or types of crops, and any subsequent amendments.

Transition

38.   The new UPOV code structure would be compatible with existing databases and systems using the current structure. In particular, the UPOV codes using the new structure would be compatible with existing databases and systems, even if those systems and databases did not support the appended element. In this regard, all users would have the possibility not to use the new appended element in UPOV codes.

Implementation

39.   When an existing UPOV code is updated to follow the new format, all members of the Union and contributors of data to the Plant Variety Database would be informed. Examples of how the new appended element could be applied are given below.

40.   The following are examples of appended information on variety types or groups:

- Barley – appending information on row type (two- ("2") or six-row ("6")) type; and seasonal type, (winter ("W") or spring ("S"))

    Existing UPOV code: HORDE_VUL

    Updated UPOV codes:
                          HORDE_VUL_2W (Appended info. two-row/ winter type)
                          HORDE_VUL_2S (Appended info. two-row/ spring type)
                          HORDE_VUL_6W (Appended info. six-row/ winter type)
                          HORDE_VUL_6S (Appended info. six-row/ spring type)

- Apple – Type: 1=Fruit, 2=Rootstock, 3=ornamental; Groups: seedling ("S"); mutant ("M"); Cripps Pink mutant ("MC"); Fuji mutant ("MF"); and Gala mutant ("MG")

    Existing UPOV code: MALUS_DOM

    Updated UPOV codes: MALUS_DOM_1S
                          MALUS_DOM_1MC
                          MALUS_DOM_1MF
                          MALUS_DOM_1MG
                          MALUS_DOM_2
                          MALUS_DOM_3

41.   The following is an example of appending information for denomination class purposes:

In *Beta*, all previously recognized taxonomical ranks lower than subspecies are now considered by GRIN as synonyms of *Beta vulgaris* L. subsp. *vulgaris.* Using only the GRIN botanical classification for the UPOV code would remove the possibility for the denomination classes within *Beta* to be identified by the UPOV code.

Current information on denomination classes:

	Botanical names	UPOV codes
Class 2.1	*Beta vulgaris* L. var. *alba* DC., *Beta vulgaris* L. var. *altissima*	BETAA_VUL_GVA; BETAA_VUL_GVS
Class 2.2	*Beta vulgaris* ssp. *vulgaris* var. *conditiva* Alef. (syn.: *B. vulgaris* L. var. *rubra* L.), B. *vulgaris* L. var. *cicla* L., *B. vulgaris* L. ssp. *vulgaris* var. *vulgaris*	BETAA_VUL_GVC; BETAA_VUL_GVF
Class 2.3	*Beta* other than classes 2.1 and 2.2.	other than classes 2.1 and 2.2

Appended information for denomination classes could be introduced as follows: Fodder beet: Class 2.1 ("21F");
Sugar beet group: Class 2.1 ("21S"); Beetroot: Class 2.2 ("22R"); Leaf beet: Class 2.2 ("22L"); :

	Botanical names	UPOV codes
Class 2.1	*B. vulgaris* L. ssp. *vulgaris* (synonym to *B. vulgaris* L. var. *alba* DC.), *B. vulgaris* L. ssp. *vulgaris* (synonym to *B. vulgaris* L. var. *altissima*)	BETAA_VUL_VUL_21F; BETAA_VUL_VUL_21S
Class 2.2	*Beta vulgaris* ssp. *vulgaris* var. *conditiva* Alef. (synonym to *B. vulgaris* L. var. *rubra* L.), B. *vulgaris* L. var. *cicla* L., *B. vulgaris* L. ssp. *vulgaris* var. *vulgaris*	BETAA_VUL_VUL_22R; BETAA_VUL_VUL_22L
Class 2.3	*Beta* other than classes 2.1 and 2.2.	other than classes 2.1 and 2.2

42.   The above proposal for amending the UPOV code system is reflected in document UPOV/INF/23/1 Draft 2.

43.   The TWPs are invited to consider the proposal for amending the UPOV code system to provide information on variety types, groups and denomination class, as set out in document UPOV/INF/23/1 Draft 2.

PROPOSALS FOR AMENDING UPOV CODES

44.   The TC, at its fifty-sixth session, agreed to request the Office of the Union to present proposals to address the taxonomical reclassification of *Beta vulgaris* ssp. *vulgaris*, *Brassica oleracea*, *Citrus* and *Zea mays*, in conjunction with a proposal to revise the "Guide to the UPOV code system" (document UPOV/INF/23) for consideration by the TWPs and the TC at their sessions in 2021 (see document TC/56/22 "Outcome of consideration of documents by correspondence", paragraph 53).

45.   The following proposals are made on the basis that the changes to the UPOV codes would be made in conjunction with the adoption of document UPOV/INF/23/1 and that a timetable for implementing the changes would be presented to the TC for approval at its fifty-seventh session.

46.   The TWPs are invited to note that:

(a)   the proposals for amending UPOV codes in this document are made on the basis that they would be made in conjunction with the adoption of document UPOV/INF/23/1; and

(b)   that a timetable for implementing the proposed changes would be presented to the TC for approval at its fifty-seventh session.

UPOV codes for *Beta vulgaris*

47.   The Office of the Union was informed of the inconsistency between GENIE and GRIN with regard to the botanical names of *Beta vulgaris* L. subsp. *vulgaris*.

48.   Annex I to this document provides the number of entries in the PLUTO database for *Beta vulgaris* L. subsp. *vulgaris* and its synonyms, as currently provided in the GENIE database. A proposal for updating UPOV codes in line with the taxa in GRIN is provided in Annex I to this document. All previously recognized taxonomical ranks lower than subspecies are added as synonyms to *Beta vulgaris* L. subsp. *vulgaris*.

49.   The TWV and TWA, at their sessions in 2020, considered the proposal to amend the UPOV codes for *Beta vulgaris*, as reproduced in Annex I to this document (see documents TWV/54/9 "Report", paragraphs 42 and 43, and TWA/49/7 "Report", paragraph 32).

50.　　The TWV, at its fifty-fourth session, recalled that, at its fifty-second session, it had agreed that the information on type of maize (popcorn, sweet corn) and red and white cabbage varieties was useful for grouping varieties and organizing growing trials and should remain in the database (see document TWV/52/20 "Report", paragraph 94).　The TWV agreed that the same approach should be used for UPOV codes of the different types of beet varieties.

51.　　The TWA, at its forty-ninth session, considered the proposal to amend the UPOV codes for *Beta vulgaris,* as reproduced in Annex I to this document.　The TWA noted that the proposal would classify different horticultural crops as synonyms under the same taxa, such as beetroot, leaf beet, turnip, turnip rape, sugar beet and fodder beet.　The TWA agreed that it would not be appropriate to delete the UPOV codes proposed before a solution was provided to avoid the loss of information on variety groups.

Proposal

52.　　The TWA and TWV are invited to consider the proposal to amend the UPOV codes for *Beta vulgaris*, as reproduced in Annex I to this document.

53.　　The TWA and TWV are invited to consider appending information about denomination classes to UPOV codes to establish the following groups:

　　　(a)　　Fodder beet: Class 2.1 ("21F");
　　　(b)　　Sugar beet group: Class 2.1 ("21S");
　　　(c)　　Beetroot: Class 2.2 ("22R");
　　　(d)　　Leaf beet: Class 2.2 ("22L")

54.　　The following table provides a summary of the proposed denomination classes:

	Botanical names	UPOV codes
Class 2.1	*B. vulgaris* L. ssp. *vulgaris* (synonym to *B. vulgaris* L. var. *alba* DC.), *B. vulgaris* L. ssp. *vulgaris* (synonym to *B. vulgaris* L. var. *altissima*)	BETAA_VUL_VUL_21F; BETAA_VUL_VUL_21S
Class 2.2	*Beta vulgaris* ssp. *vulgaris* var. *conditiva* Alef. (synonym to *B. vulgaris* L. var. *rubra* L.), B. *vulgaris* L. var. *cicla* L., *B. vulgaris* L. ssp. *vulgaris* var. *vulgaris*	BETAA_VUL_VUL_22R; BETAA_VUL_VUL_22L
Class 2.3	*Beta* other than classes 2.1 and 2.2.	other than classes 2.1 and 2.2

55.　　The TWA and TWV are invited to consider:

*　　　(a)　　the proposal to amend the UPOV codes for* Beta vulgaris*, as reproduced in Annex I to this document; and*

*　　　(b)　　appending information on denomination classes to UPOV codes for* Beta vulgaris *to establish the following groups:*

*　　　　　(i)　　Fodder beet: Class 2.1 ("21F"),*
*　　　　　(ii)　　Sugar beet group: Class 2.1 ("21S"),*
*　　　　　(iii)　　Beetroot: Class 2.2 ("22R"),*
*　　　　　(iv)　　Leaf beet: Class 2.2 ("22L").*

UPOV codes for *Brassica oleracea*

Background

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

57.   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

58.   Annex III 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.

59.   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.

60.   *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

61.   The TWV is invited 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 the Appendix to Annex III of this document.

62.   The TWV is invited to consider appending information to the UPOV code for *Brassica oleracea* L. var. *capitata* L. (BRASS_OLE_GC) to create variety groups or types as follows:

- White Cabbage: 1W (e.g. BRASS_OLE_GC_1W)
- Red Cabbage: 2R (e.g. BRASS_OLE_GC_2R)

63.   The TWV is invited to consider:

(a)   amending the botanical names for Brassica oleracea *in accordance with GRIN, with the consequent changes to the UPOV codes in relation to groups, as provided in the Appendix to Annex III of this document; and*

(b) appending information to the UPOV code for Brassica oleracea L. var. capitata L. (BRASS_OLE_GC) to create variety groups or types for White and Red Cabbage, as set out in paragraph 62 of this document.

UPOV codes for Citrus

64. The Office of the Union was informed of the inconsistency between GENIE and GRIN with regard to the botanical names of *Citrus* species. Annex II to this document presents a proposal for updating UPOV codes in line with the taxa in GRIN.

65. The TWF, at its fifty-first session, considered amending the UPOV codes for *Citrus*, as reproduced in Annex II to this document. The TWF agreed that the reclassification of *Citrus clementina* hort. ex Tanaka (UPOV code: CITRU_CLE) as a synonym of *Citrus aurantium* L. (UPOV code: CITRU_AUM) should not be implemented before solutions to enable UPOV codes to provide information on variety groups were provided. The TWF noted that the remaining proposals had no practical impact due to the absence of varieties reported in the PLUTO database and agreed to the proposed changes (see document TWF/51/10 "Report", paragraph 51).

66. Following the proposal to amend the UPOV code system to provide information on variety groups or types, the TWF may wish to consider appending the following information to UPOV code CITRU_AUM:

(a) Mandarins: "1" (e.g. CITRU_AUM_1); and
(b) Oranges: "2" (e.g. CITRU_AUM_2)

67. The TWF is invited to consider amending the UPOV code CITRU_AUM, following the reclassification of *Citrus clementina* hort. ex Tanaka (UPOV code: CITRU_CLE) as a synonym of *Citrus aurantium* L. (UPOV code: CITRU_AUM), as presented in Annex II to this document.

68. The agreement by the TWF, at its fifty-first session, on the reclassification of certain Citrus species would require partial revision of the Test Guidelines for *Citrus* to move obsolete species from the "principle botanical names" box to the "alternative botanical names" box.

69. The TWF is invited to consider:

(a) appending the following information to UPOV code CITRU_AUM to create groups (1) mandarins; and (2) oranges;

(b) amending the UPOV code CITRU_AUM, following the reclassification of Citrus clementina hort. ex Tanaka (UPOV code: CITRU_CLE) as a synonym of Citrus aurantium L. (UPOV code: CITRU_AUM), as set out in Annex II to this document; and

(c) whether to propose the partial revision of the Test Guidelines for Citrus to move obsolete species from the "principle botanical names" box to the "alternative botanical names" box.

UPOV codes "ZEAAA_MAY_SAC", "ZEAAA_MAY_EVE" and "ZEAAA_MAY_MIC"

70. The following subspecies of *Zea mays* L. have been reclassified in GRIN as synonyms of *Z. mays* L.subsp. *mays:*

- *Zea mays* L. var. *saccharata* (Sweet Corn),
- *Z. mays* L. var. *everta* (Praecox) Sturt.; and
- *Z. mays* L. convar. *microsperma* Koern (Popcorn)

71.   The TWA and TWV are invited to consider the deletion of UPOV Codes ZEAAA_MAY_SAC, ZEAAA_MAY_EVE and ZEAAA_MAY_MIC, as these subspecies would be covered by the UPOV code ZEAAA_MAY_MAY, 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.

72.   In addition, the TWA and TWV are invited to consider appending information on variety groups or types to the UPOV code ZEAAA_MAY_MAY, as follows:

(a)   Corn; Maize: "1MA" (e.g. ZEAAA_MAY_MAY_1MA);
(b)   Sweet Corn: "2SW" (e.g. ZEAAA_MAY_MAY_2SW);
(c)   Popcorn: "3PO" (e.g. ZEAAA_MAY_MAY_3PO);
(d)   Durango teosinte; Mexican teosinte; Rayana grass: "4TE" (e.g. ZEAAA_MAY_MAY_4TE)

73.   The TWA and TWV are invited to consider:

(a)   the proposal to amend the UPOV codes for subspecies of Zea mays*, as presented in paragraph 71 of this document; and*

(b)   appending information on variety types or groups to the UPOV code ZEAAA_MAY_MAY to establish the following variety types or groups:

(i)   Corn; Maize: "1MA",
(ii)   Sweet Corn: "2SW",
(iii)   Popcorn: "3PO",
(iv)   Durango teosinte; Mexican teosinte; Rayana grass: "4TE".

Proposed amendments for consideration by the TWPs in 2021

74.   The following sections present proposals for amendments to UPOV codes for consideration by the TWPs at their session in 2021.

75.   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".

76.   The conclusions at the TWPs as indicated in the following sections, for amendments to UPOV codes, will be presented at the fifty-seventh session of the TC.

77.   On the basis of the conclusions at the fifty-seventh session of the TC on the matters presented in the following sections, members of the Union and contributors of data to the PLUTO database will 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 will be requested to use the amended UPOV codes when submitting their plant variety data to the Office of the Union.

UPOV code for Dicentra species

Background

78.   The Office of the Union was informed of the reclassification of certain *Dicentra* species *to Lamprocapnos* species.

79.   The current entries in the GENIE database for certain *Dicentra 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	Number of entries in PLUTO
DICEN_SPE	*Dicentra spectabilis* (L.) Lem.	*Lamprocapnos spectabilis* (L.) Fukuhara	Asian bleeding-heart; Bleeding-heart	12

Proposal

80.   In accordance with the reclassification of certain *Dicentra* species *to Lamprocapnos*, the TWO is invited to consider deleting the UPOV code DICEN_SPE and *Dicentra spectabilis* would be covered as a synonym of *Lamprocapnos spectabilis* under a new UPOV code LAMPO_SPE, 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)
DICEN_SPE	*Dicentra spectabilis* (L.) Lem.	*Lamprocapnos spectabilis* (L.) Fukuhara	LAMPO_SPE	*Lamprocapnos spectabilis* (L.) Fukuhara	*Dicentra spectabilis* (L.) Lem.

81.   The TWO is invited to consider the proposal to delete the UPOV Code DICEN_SPE, as set out in paragraph 80 of this document.

UPOV code for Aloe subspecies

Background

82.   The Office of the Union was informed of the reclassification of certain *Dicentra* species *to Lamprocapnos* species.

83.   The current entries in the GENIE database for certain *Dicentra 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	Number of entries in PLUTO
ALOEE_ARI	*Aloe aristata* Haw.	*Aristaloe aristata* (Haw.) Boatwr. & J. C. Manning	Lace aloe; Torch plant	14

Proposal

84.   In accordance with the reclassification of certain *Aloe subspecies to Aristaloe* species, the TWO is invited to consider deleting the UPOV code ALOEE_ARI and *Aloe aristata* would be covered as a synonym of *Aristaloe aristata* under a new UPOV code ARSTL_ARI, 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)
ALOEE_ARI	*Aloe aristata* Haw.	*Aristaloe aristata* (Haw.) Boatwr. & J. C. Manning	ARSTL_ARI	*Aristaloe aristata* (Haw.) Boatwr. & J. C. Manning	*Aloe aristata* Haw.

85.   The TWO is invited to consider the proposal to delete the UPOV Code ALOEE_ARI, as set out in paragraph 84 of this document.

TWP checking

86.   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".

87.   In accordance with the procedure set out in Section 3.3 of the Guide to the UPOV Code System, the Office of the Union prepares tables of UPOV code additions and amendments, for checking by the relevant authorities, for each of the Technical Working Party (TWP) sessions in 2020.

88.   The Excel files in Annex IV 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."

89.   Annex IV to this document contain parts A "UPOV codes amendments to be checked", B "New UPOV codes or new information", and C "Crop type(s) of UPOV codes used in the PLUTO database for the first time". The Excel format files are available on the TWV/55, TWO/53, TWA/50, TWF/52 and TWC/39 websites.

90.   The TWPs are invited to check the amendments, new UPOV codes or information, and UPOV codes used in the PLUTO database for the first time, as reproduced in Annex IV to this document and submit comments to the Office of the Union by December 31, 2021.

PLUTO DATABASE

Summary of contributions to the PLUTO database from 2016 to 2020

91.   Annex V to this document provides a summary of data contributions from members of the Union to the PLUTO database from 2016 to 2020.

> *92.   The TWPs are invited to note the summary of data contributions from members of the Union to the PLUTO database from 2016 to 2020, as presented in the Annex V to this document.*

[Annexes follow]

ANNEX I

INCONSISTENCIES BETWEEN UPOV CODES AND GRIN FOR *BETA VULGARIS* SUBSP. *VULGARIS*
Current situation and proposed UPOV code amendments

Entries in PLUTO	TG	UPOV Code	Principal botanical name	Other botanical name(s)	UPOV Code	Principal botanical name	Other botanical name(s)
		Currrent			**Proposal**		
5	/	**BETAA_VUL_GV**	**Beta vulgaris L. subsp. vulgaris**	n.a.	**BETAA_VUL_VUL**	**Beta vulgaris L. subsp. vulgaris**	Beta altissima Steud.; Beta brasiliensis hort. ex Voss, nom. inval.; Beta chilensis hort.; Beta cicla (L.) L.; vulgaris f. rhodopleura (Alef.) Helm; vulgaris f. vulgaris L.; vulgaris subsp. cicla (L.) Schübl. & G. Martens; Beta vulgaris subvar. flavescens DC.; Beta vulgaris var. altissima Döll; Beta vulgaris var. cicla L.; Beta vulgaris var. conditiva Alef.; Beta vulgaris var. flavescens (DC.) Mansf.; Beta vulgaris var. rapacea W. D. J. Koch; Beta vulgaris var. rubra DC.; Beta vulgaris var. saccharifera Alef.; Beta vulgaris var. vulgaris L.; Beta vulgaris var.-gr. crassa Alef.
1298	TG/150	BETAA_VUL_**G**VA	Beta vulgaris L. ssp. vulgaris var. alba DC.	Beta vulgaris L. ssp. vulgaris var. crassa Alef.; Beta vulgaris L. ssp. vulgaris var. crassa Mansf.; Beta vulgaris L. ssp. vulgaris var. rapacea K. Koch			
811	TG/60	BETAA_VUL_**G**VC	Beta vulgaris L. ssp. vulgaris var. conditiva Alef.	Beta vulgaris L. ssp. vulgaris var. esculenta L.; Beta vulgaris L. ssp. vulgaris var. hortensis			
195	TG/106	BETAA_VUL_**G**VF	Beta vulgaris L. ssp. vulgaris var. flavescens DC.	Beta vulgaris L. ssp. vulgaris var. cicla (L.) Ulrich; Beta vulgaris L. ssp. vulgaris var. vulgaris			
21799	/	BETAA_VUL_**G**VS	Beta vulgaris L. ssp. vulgaris var. saccharifera Alef.	Beta vulgaris L. ssp. vulgaris var. altissima Doell			

[Annex II follows]

ANNEX II

INCONSISTENCIES BETWEEN UPOV CODES AND GRIN FOR *CITRUS*

Current situation and proposed UPOV code amendments

			Currrent				Proposal	
Entries in PLUTO	TG	UPOV Code	Principal botanical name	Other botanical name(s)	UPOV Code	Principal botanical name	Other botanical name(s)	
10	TG/202	CITRU_AUM	Citrus aurantium L.	n.a.	CITRU_AUM	Citrus ×aurantium L.	Citrus amara Link; Citrus bigarradia Loisel.; Citrus intermedia hort. ex Tanaka; Citrus taitensis Risso; Citrus vulgaris Risso; Citrus ×aurantium subsp. aurantium L.; Citrus ×aurantium subsp. jambiri Engl.; Citrus ×aurantium subsp. keonla Engl.; Citrus ×aurantium subsp. suntara Engl.; Citrus ×aurantium var. aurantium L.; Citrus ×aurantium var. citrina Lush.; Citrus ×bigarradia var. volkameriana Risso; Citrus ×clementina hort. ex Tanaka; Citrus ×crenatifolia Lush.; Citrus reticulata × C. maxima"	
115	TG/201	CITRU_CLE	Citrus clementina hort. ex Tanaka	n.a.				
1	/	CITRU_MRE	Citrus maxima X Citrus reticulata	n.a.				
0	TG/201	CITRU_CRE	Citrus crenatifolia Lush.	n.a.				
0	TG/204	CITRU_INT	Citrus intermedia hort. ex Tanaka	n.a.				
12	TG/203	CITRU_AUR	Citrus aurantiifolia (Christm.) Swingle	Citrus ×javanica Blume	CITRU_AUR	Citrus ×aurantiifolia (Christm.) Swingle	Citrus acida Roxb.; Citrus acida var. acida Roxb.; Citrus aurata Risso; Citrus excelsa var. davaoensis Wester; Citrus grandis Hassk.; Citrus grandis var. grandis Hassk.; Citrus grandis var. oblonga Hassk.; Citrus grandis var. sphaerocarpos Hassk.; Citrus hystrix subsp. acida (Roxb.) Engl.; Citrus lima Lunan; Citrus limetta var. aromatica Wester; Citrus limonellus Hassk.; Citrus limonellus var. limonellus Hassk.; Citrus limonellus var. oxycarpus Hassk.; Citrus medica var. acida (Roxb.) Hook. f.; Citrus ×aurantiifolia var. aurantiifolia (Christm.) Swingle; Citrus ×davaoensis (Wester) Tanaka; Citrus ×excelsa Wester; Citrus ×javanica Blume; Limonia aurantiifolia Christm., Citrus medica × C. micrantha"	
0	TG/203	CITRU_AUA	Citrus aurata Risso	n.a.				
0	TG/203	CITRU_DAV	Citrus davaoensis (Wester) Tanaka	n.a.				
0	TG/203	CITRU_EXC	Citrus excelsa Wester	n.a.				
0	/	CITRU_HYS	Citrus hystrix DC.	n.a.	CITRU_HYS	Citrus hystrix DC.	Citrus auraria Michel; Citrus balincolong (Tanaka) Tanaka; Citrus boholensis (Wester) Tanaka; Citrus celebica Koord.; Citrus celebica var. celebica Koord.; Citrus combara Raf.; Citrus echinata St.-Lag.; Citrus hyalopulpa Tanaka; Citrus hystrix subsp. hystrix DC.; Citrus hystrix var. balincolong Tanaka; Citrus hystrix var. boholensis Wester; Citrus hystrix var. hystrix DC.; Citrus kerrii (Swingle) Tanaka; Citrus latipes Hook. f. & Thomson; Citrus macroptera var. annamensis Tanaka; Citrus macroptera var. kerrii Swingle; Citrus papeda Miq.; Citrus papuana F. M. Bailey; Citrus torosa Blanco; Citrus vitiensis Tanaka; Fortunella sagittifolia K. M. Feng & P. I Mao; Papeda rumphii Hassk.	
0	TG/203	CITRU_KER	Citrus kerrii (Swingle) Tanaka	Citrus hyalopulpa Tanaka				
149	TG/203	CITRU_LIM	Citrus ×limon (L.) Osbeck	Citrus limon (L.) Burm. f.; Citrus medica var. limon L.; Citrus rissoi Risso; Citrus ×limonia Osbeck; Citrus ×mellarosa Risso; Citrus ×volkameriana (Risso) V. Ten. & Pasq.	CITRU_LIM	Citrus ×limon (L.) Osbeck	Citrus balotina Poit. & Turpin; Citrus bergamota Raf.; Citrus karna Raf.; Citrus limonum Risso; Citrus medica var. limon L.; Citrus rissoi Risso; Citrus ×limon (L.) Burm. f.; Citrus ×limonia Osbeck; Citrus ×mellarosa Risso; Citrus ×volkameriana (Risso) V. Ten. & Pasq.; a hybrid of Citrus × aurantium (C. maxima × C. reticulata) × C. medica	
0	TG/203	CITRU_BAL	Citrus balotina Poit. & Turpin	n.a.				
0	TG/203	CITRU_KAR	Citrus karna Raf.	n.a.				
355	TG/201	CITRU_RET	Citrus reticulata Blanco	n.a.	CITRU_RET	Citrus reticulata Blanco	Citrus benikoji hort. ex Tanaka; Citrus daoxianensis S. W. He & G. F. Liu; Citrus depressa var. vangasay (Bojer) H. Perrier; Citrus nobilis Andrews; Citrus vangasay Bojer	
0	TG/201	CITRU_BEN	Citrus benikoji hort. ex Tanaka	n.a.				

[Annex III follows]

ANNEX III

CURRENT SITUATION FOR *BRASSICA OLERACEA*

UPOV code	Principal botanical name in GENIE	Botanical name(s) in GRIN	Common name(s) in GENIE	Number 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.	n.a.	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.	n.a.	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.	n.a.	White Cabbage	3,747
BRASS_OLE_GCR	*Brassica oleracea* L. *convar. capitata* (L.) Alef. var. *rubra* (L.) Thell.	n.a.	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

[Appendix to Annex III follows]

ANNEX III, APPENDIX

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_GC	*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 IV follows]

ANNEX IV

[See Excel files]

[Annex V follows]

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 PBR in 2019	Number of new data submissions to PLUTO in 2016	Number of new data submissions to PLUTO in 2017	Number of new data submissions to PLUTO in 2018	Number of new data submissions to PLUTO in 2019	Number of new data submissions to PLUTO in 2020
African Intellectual Property Organization	12	0	0	0	0	0
Albania	n.a.	1	0	1	0	0
Argentina	377	1	0	0	2	4
Australia	281	7	5	22	20	21
*Austria	0	4	4	5	5	3
Azerbaijan	n.a.	0	0	0	0	0
Belarus	n.a.	1	0	0	0	0
*Belgium	2	5	3	5	6	5
Bolivia (Plurinational State of)	n.a.	1	0	0	0	0
Bosnia and Herzegovina	n.a.	n.a.	0	0	0	0
Brazil	283	0	3	5	11	11
*Bulgaria	25	6	3	4	10	10
Canada	366	11	11	10	12	12
Chile	82	6	5	7	6	4
China	7834	1	1	0	1	1**
Colombia	107	0	2	0	1	0
Costa Rica	4	3	2	1	3	1
*Croatia	2	2	2	2	2	2
*Czech Republic	59	6	9	6	6	8
*Denmark	11	11	10	7	11	11
Dominican Republic	20	0	0	0	0	0
Ecuador	71	0	1	1	0	0
Egypt	n.a.	n.a.	n.a.	n.a.	n.a.	0
*Estonia	6	3	3	9	6	7
*European Union	3525	13	7	11	8	12
*Finland	8	2	2	3	1	3
*France	113	11	8	8	12	12
Georgia	5	2	0	3	0	0
*Germany	58	12	8	9	11	9
*Hungary	38	19	14	11	16	13
*Iceland	n.a.	0	0	0	0	0
*Ireland	5	2	1	2	2	3
Israel	117	1	1	0	8	2
*Italy	8	6	6	3	4	5
Japan	822	1	2	3	4	1
Jordan	10	1	0	0	0	0
Kenya	65	1	0	0	0	0
Kyrgyzstan	0	0	0	0	0	0
*Latvia	3	1	2	2	1	1
*Lithuania	10	4	4	3	4	5
Mexico	205	3	3	4	2	3
Montenegro	n.a.	0	0	0	0	0

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* Data provided via the CPVO.

** China – Ministry of Agriculture and Rural Affairs (MARA): 1
    China – National Forestry and Grassland Administration (NFGA): 1

Contributor	Number of applications for PBR in 2019	Number of new data submissions to PLUTO in 2016	Number of new data submissions to PLUTO in 2017	Number of new data submissions to PLUTO in 2018	Number of new data submissions to PLUTO in 2019	Number of new data submissions to PLUTO in 2020
Morocco	80	0	0	0	1	0
*Netherlands	767	11	8	9	11	11
New Zealand	101	5	6	6	6	6
Nicaragua	0	0	0	0	0	2
North Macedonia	n.a.	0	0	0	0	0
*Norway	18	3	4	7	6	4
Oman	n.a.	0	2	0	0	0
Panama	1	1	1	0	0	0
Paraguay	n.a.	1	0	1	0	0
Peru	55	0	1	1	1	0
*Poland	127	5	7	3	3	4
*Portugal	1	2	1	2	1	4
Republic of Korea	695	1	0	1	4	3
Republic of Moldova	16	3	1	2	7	2
*Romania	30	4	4	4	5	4
Russian Federation	765	5	5	4	3	1
Serbia	51	4	2	4	1	2
Singapore	3	0	0	0	0	0
*Slovakia	13	5	6	4	4	3
*Slovenia	0	5	3	4	4	2
South Africa	282	1	2	2	3	1
*Spain	69	5	5	4	4	7
*Sweden	2	12	11	9	9	10
*Switzerland	54	5	6	3	6	8
Trinidad and Tobago	n.a.	0	0	0	0	0
Tunisia	10	0	0	0	0	0
*Turkey	227	3	0	2	1	0
Ukraine	1238	0	0	3	11	4
*United Kingdom	187	13	10	12	10	9
United Republic of Tanzania	10	0	0	0	0	0
United States of America	1590	16	12	12	16	6
Uruguay	68	0	0	0	0	1
Uzbekistan	77	0	0	1	0	0
Viet Nam	194	0	0	0	0	0
OECD	-	2	2	2	2	2

[End of Annex V and of document]