

A practical guide to Plant Breeders' Rights in China

State of PVP law and application procedure

December 2011

This practical guide provides an overview of the current Plant Variety Rights act and application procedure in China. It is drafted by Naktuinbouw in collaboration with Plantum and NABSO Kunming and intended to give practical information to plant breeders. The information is drawn from official publications and interviews with the Chinese PVP office in the period 2009 - 2011.

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Introduction

This document is prepared to be a practical guide to plant breeders on the plant variety protection system of the People's Republic of China (hereafter mentioned as China). The information provided is derived from the two year cooperation project between China and the Netherlands (2009 – 2011) on plant variety protection. This report is drafted by Naktuinbouw in collaboration with Plantum and NABSO Kunming.

The content provides an overview of the actual situation in China regarding the PVP law and application procedure. It is not intended to be complete and certain issues may not be addressed. During the project there were several questions and bottlenecks from a Dutch perspective presented and discussed with the Chinese partners. This has clarified several issues, but not all constraints are solved yet. The cooperation has led to more understanding on both sides and China is considering several adjustments to the application procedure as well as to the PVP law.

The general questions of Dutch breeders are the following:

- Extension of the list of protectable genera and species
- Extension of the duration of protection
- Restriction of the farmers' privileged to agricultural seed crops.
- Shortening of the application period
- Information on the DUS trials during testing and visiting under supervision DUS trials
- Taking over DUS tests from the CPVO or the Dutch Plant Variety Board

How to solve these discussion points is not discussed further in this report. Also the enforcements of plant breeders rights in China are not addressed in this report. On request breeders can receive a desk research report on this issue at Plantum (written by intern Mrs Q. Zhang in 2008).

The practical guide to plant breeders rights in China consists of 1) general introduction, 2) Issues regarding Plant Breeders' Rights, 3) Practical implementation of Plant Breeders' Rights in China and 4) Constraints in present procedures and testing. The appendix contains the list of protectable species of 1 October 2011.

Any comments or questions about this report can be addressed to either Naktuinbouw or Plantum.

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A practical guide to Plant Breeders' Rights in China

Introduction

Plant Variety Protection (PVP), also called, Plant Breeders' Rights (PBR), are intellectual property rights granted to the breeder of a new plant variety.

The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs 1994) requires Member States to provide protection for plant varieties either by patents or by an effective sui generis (stand alone) system, or a combination of the two. Most countries meet this requirement through the UPOV (International Union for the Protection of New Varieties of Plants) Convention-compliant legislation.

UPOV was established by the International Convention for the Protection of New Varieties of Plants. The Convention was adopted in Paris in 1961 and revised in 1972, 1978 and 1991. The objective of the Convention is to give protection to new varieties of plants by an intellectual property right. By codifying intellectual property rights for plant breeders, UPOV aims to encourage the development of new varieties of plants for the benefit of society.

PVP in China

On October 1, 1997, the State Council issued the "Regulations of the People's Republic of China, the Protection of New Varieties of Plants". The regulations are based on the 1978 version of the Act of the UPOV Convention. China officially became a member of UPOV in April 1999.

Implementation of PVP in China is done by two examining and approving authorities: the Ministry of Agriculture (MOA) and the State Forestry Administration (SFA).

MOA:

- MOA promulgated "The Implementing Rules for the Regulations of the People's Republic of China on the Protection of New Varieties of Plants (Agriculture Part)". See: <http://www.cnpvp.cn/en/index.html>
- MOA is responsible for the protection of new varieties of field crops, vegetables, ornamental species and fruit crops. At present, October 2011, the protection of plant varieties under the authority of MOA has been extended to 80 genera and species.
- MOA has got 14 DUS testing stations in various parts of the country.

SFA:

- SFA promulgated "The Rules for the Implementation of the Regulations of the People's Republic of China On the Protection of New Varieties of Plants (Forest Part)"
See: http://www.cnpvp.net/index/index_en.aspx
- SFA is responsible for the protection of new varieties of forest trees, bamboo and woody rattan, woody ornamental plant (including woody flower e.g. roses), fruit tree (dry fruit), woody oil-bearing plants, plants used for beverage, plants used for condiment and woody herbs as well as other plants which are in conformity with Article 2 of the Regulations. At present, October 2011, the protection of plant varieties under the authority of SFA has been extended to 78 genera and species.
- SFA has 5 DUS testing stations.

A useful, English website on the PVP system in China is the Information Network of China PVP: <http://www.cnpvp.com/english/Introduction%20of%20the%20Network.htm>.

In Appendix 1: Table 1 the list of genera and species of which varieties can be protected as per 1st October 2011, is presented. In the same table it is indicated if the crop is under responsibility of MoA or SFA .

The actual situation regarding the list of protectable genera and species can be checked at the Genie database of UPOV: <http://upov.int/genie/en>

Issues regarding Plant Breeders' Rights

China joined UPOV under the 1978 Act. The six most important differences for breeders between the Chinese PVP law (largely in line with the UPOV 78 Act) and the 1991 Act are the following.

1. Genera and species to be protected

Protection by Plant Breeders Rights under UPOV 1991 is open to all botanical genera and species (at the latest by the expiration of a period of 10 years from the date of adoption), while UPOV 1978 requires a list of at least 24 botanical genera and species within eight years from the date the PVP has come into force.

China

China has indeed gradually extended the list of protectable genera and species to 158 by October 2011 (see appendix 1).

2. Duration of the Plant Breeders Right

Under UPOV 1978 the minimum protection period is 15 years for species in general and 18 years for trees and vines. The 1991 Act of the Convention provides that the duration of the Plant Breeder's Right shall be at least 20 years for the general species and at least 25 years for trees and vines.

China

China has a general period of protection of 15 years and 20 years for trees and vines.

3. Acts that require authorisation

Under UPOV 1978 the authorisation of the breeder is only required for the selling of propagating material and the production of propagating material for the purpose of selling the produced propagating material on the market. All production of propagating material for own use (the so called farmers' privilege) is therefore allowed.

Under UPOV 1991 the authorization of the breeder is required for the following acts with propagation material of the variety for which Plant Breeder's Right protection is obtained:

- production or reproduction (multiplication);
- conditioning for the purpose of propagation;
- offering for sale;
- selling or other marketing;
- exporting;
- importing;
- stocking for any of the purposes mentioned above.

China

In China the right of the breeder is required for the production of propagating material, but only for the purpose of selling the produced propagating material on the market. China has *an unlimited farmers privilege* for all genera and species in place which allows for the production of propagating material for own use (see point 4).

4. Farmers' privilege

The 1978 Act only allows the breeder to act against the selling of propagating material without his consent. Therefore the right itself does not include the production of propagating material for own use.

The 1991 Act of the Convention does forbid production of propagating material without consent of the breeder, but allows countries to include in the legislation an important exception to this right. Article 15 of the 1991 Act states that each UPOV member may, within reasonable limits and subject to safeguarding of the legitimate interests of the breeder, restrict the breeder's right to permit farmers to use for propagation purposes, on their own holding, the product of the harvest which they have obtained by planting, on their own holdings, the protected variety.

This provision can be implemented quite flexible by the UPOV members, though it cannot be allowed to sell the produce of the own harvest. But already under UPOV 1978 this is as such not allowed.

China

China has an *unlimited farmers privilege* for all genera and species in place which allows for the production of propagating material for own use.

5. Harvested products

Under UPOV 1991 protection also applies to the harvested product, including entire plants and parts of plants and products made directly from harvested material. This is not the case under the 1978 Act of the UPOV Convention.

China

China does not allow breeders to enforce their rights in regard to the harvested product.

6. Essentially Derived varieties

Under UPOV'91 the right of the breeder applies to varieties which are essentially derived from the protected variety, where the protected variety is not itself essentially derived.

China

The PVP system of China does not offer protection in regard to EDV's.

Practical implementation of Plant Breeders' Rights in China

On the website of MoA (<http://www.cnpvp.cn/en/index.html>) the application procedures, the fees applicable, the plant material requirements plus the addresses where to send the material are clearly explained in English.

The English website of SFA (http://www.cnpvp.net/index/index_en.aspx) does not give this information as clearly, but might be found in the Chinese version.

Practical information on application procedures can also be found on the website of the Information Network of China PVP:

<http://www.cnpvp.com/english/Introduction%20of%20the%20Network.htm>)

DUS testing centres

The **DUS tests for MoA** are carried out at 14 DUS stations:

Location	Province	Belongs to	Tested crops
Beijing	Beijing	DCST, MOA	all Crops
Beijing	Beijing	Institute CAAS	vegetables and ornamentals
Gongzhuling	Jilin	Institute PAAS	north-east Plants
Ha'erbin	Heilongjiang	Institute PAAS	cool season Plants (potatoes)
Nanjing	Jiangsu	Institute PAAS	Changjiang river plants
Jinan	Shandong	Institute PAAS	Huanghe river plants
Shanghai	Shanghai	Institute PAAS	vegetables and ornamentals
Hangzhou	Zhejiang	Institute PAAS	rice
Guangzhou	Guangdong	University	semi - tropical Plants
Chengdu	Sichuan	Institute PAAS	south - west Plants
Yangling	Shanxi	University	north-east Plants
Urumqi	Xinjiang	Institute PAAS	north-east Plants
Xining	Qinghai	Institute PAAS	high altitude plants
Kunming	Yunnan	Institute PAAS	south-west plants, ornamentals
Danzhou	Hainan	Institute PAAS	tropical Plants

DCST = Development Center for Science and Technology
 CAAS = Chinese Academy of Agricultural Science
 PAAS = Provincial Academy of Agricultural Science

The various DUS stations of MoA are shown below:



There is no fixed division of crops over the DUS stations within MoA. For example, rice DUS testing can be arranged in Hangzhou, Guangzhou, Harbin and Chengdu stations. It depends a.o. on most suitable condition/time for growing, the experience of testing staff etc.

At present MoA has developed 98 test guidelines.

The **DUS tests for SFA** are carried out at five DUS stations:

- Shanghai
- Heze (Shandong Province)
- Beijing
- Kunming (Yunnan Province) for rose
- Huangshan (Anhui Province)

and at three branch DUS Testing Centers:

- Branch Center of South China – Ping Xiang, Guangxi Province
- Branch Center of East China – Fenyi, Jiangxi Province
- Branch Center of North China – Beijing

with two molecular laboratories:

- Nanjing Forestry University
- Chinese Academy of Forestry Sciences

The various DUS stations of SFA are shown below:

Location of DUS Testing Organization



At present (October 2011) SFA has developed 37 test guidelines

Constraints in present procedures and testing

Constraints exist for communication, duration and quality of the application procedure. These items were identified during the Sino – Dutch cooperation project on PVP based on input from Dutch and Chinese applicants.

The outcome of the discussions on the different subjects and a clarification by the Chinese official representatives as regards the situation anno 2011 is presented below.

1.1 Communication

1.1.1 Clarification on status of “representative”

For a foreign applicant a Chinese representative is required. Recently the rules have been changed for both MoA and SFA. Any agency can now be a representative as long as the agent has been registered in the Commercial Bureau and has permanent residence in China. There are no other applicable requirements.

1.1.2 Information on start of testing periods and possible testing locations

For both MOA and SFA the exact sowing dates for its DUS stations are known. Similar species can be tested in different DUS stations, all with different sowing dates according to the climate conditions. This means that not all the applications for a certain specie will always be combined in one trial per year.

This information is in Chinese and is not published on the website. The information is available on request by the agent.

There is no relationship between the application date and sowing date. Applications can be made throughout the year. No final application deadline for inclusion in the up coming trial exists, like this is the case in the Netherlands.

1.1.3 Language of application forms and TQ’s

MOA

The application is the task of the agent. MOA acknowledge the risk of mistakes by the agent, and is therefore taking into consideration to issue the application forms in English. However, the filling in of the answers should be in Chinese.

TQ’s are part of the guidelines – the guidelines will be translated into English at a certain point of time meaning that TQ’s are not yet available in English

SFA

As Chinese is the official language, all forms are and will remain in Chinese. Agents are responsible for translations.

1.1.4 Requirements for quantity of seed and plant material for DUS tests

All DUS guidelines are developed and checked by expert groups on DUS and germplasm, including quantities to be submitted for testing.

For DUS testing in China larger quantities are asked for compared to the Netherlands. The reason for this is the lower quality of seed and plant material of Chinese submissions and the growing circumstances which require more seeds to be sown in order to obtain the necessary amount of plants for the trial.

1.1.5 Information about the progress of DUS – test to the applicant

MOA

At present the applicant (or its agent) is forbidden to visit the DUS trial.

SFA

SFA has a more relaxed attitude towards visiting the trial and trials are open to visitors upon request.

Recently, interim reports are issued by both MOA and SFA in case of problems.

1.1.6 Extension of list of protected genera and species - procedure

The procedure of adding new genera or species to the protection list is the following:

1. MOA and SFA collect suggestions on choice of genera and species from provincial governments, research institutes, extension services, embassies etc for extension of list.
2. A candidate list is produced – (Chinese) experts are invited to review.
3. Administrative procedures to pass on to higher levels.
4. Publication of list.

1.1.7 Information in English

Chinese is the official language and therefore applications and grants are not published in English. Problem with publication of grants in English could be that one Chinese variety name can have three possible English translations.

1.1.8 Inclusion of reference varieties

Breeders can advise on the reference varieties through the PVP office.

1.2 Duration of application procedure

1.2.1 Information in TQ

Correct information on the TQ will help to speed up the process. This is the responsibility of the applicant/agent.

1.2.2 Representative

A good representative is of enormous importance in the application procedure. This is the responsibility of the applicant

1.2.3 Preliminary examination

Preliminary examination is executed before the DUS trial starts.

Both MOA and SFA are thinking of improving / shortening the process for preliminary examination to one or two months.

It is suggested to start DUS (substantive examination) before preliminary examination is finished or even to start both at the same time.

Note: this is not practice yet

1.2.4 Speeding up the total application process

At the moment there is no time period established for the substantive examination. Generally, the substantive examination would have to be finished within 2-3 years and will depend on the crop.

Note: In regard to ornamental and vegetable crops applicants have to take into consideration the possibility of a longer period before the grant.

1.2.5 Plant health requirements

These requirements are beyond the control of the PVP and DUS divisions of MOA and SFA.

1.2.6 Taking - over of DUS reports for other UPOV members

SFA is taking over DUS reports.

MOA is not yet taking over DUS reports, but is considering taking over reports of certain species, such as tulips.

Note: tulip is not yet on the list of protectable species

1.3 Quality

1.3.1 Application and comparison variety in one picture

It is realised by MoA that it is difficult for applicants to provide a photo of both their own variety and the most similar comparison variety and that improvements on this requirement have to be made, especially in ornamentals and vegetables. It is hoped that in future enough reference material is available at the Chinese DUS testing stations so that this requirement can be omitted.

1.3.2 Parent lines to submit with candidate hybrid

UPOV indicates in the Guidelines for which species it is necessary to submit parent lines. For the other species inbred lines are only required in case of problems and is therefore optional. It is not a requirement automatically when submitting a hybrid.

1.3.4 Variety denomination

Descriptive names are forbidden according to the Chinese rules and are therefore not accepted.

1.3.5 Technical questionnaires

Both the Dutch and Chinese side are in agreement that the TQ's only have to contain the most important, major characteristics.

Note for applicants: so far the Chinese TQ's are in general longer than the UPOV format.

1.3.6 History of breeding programme

An applicant is requested to provide information on the breeding history. The Chinese indicated that this information is used to help examiner to find most similar varieties and especially focusses on the information of blood relationships between the varieties. According to the Chinese officials the information is not difficult to provide, if known varieties are used as parents..

1.3.7 Reference collections

Reference collections have to be built up in China. At present the applicant is asked to supply material of the reference variety together with the candidate variety as MOA and SFA do not have the proper reference varieties for all species. When the applicant cannot get the variety from a competitor, MOA or SFA will try to do so. MoA and SFA realize that improvements on this can be made. It is hoped that in future enough reference material is available so that this requirement can be omitted.

1.3.8 Trueness to type of reference varieties – usage of new (DNA) techniques

DNA databases have been built up in China for the major agricultural crops such as maize, soybean, wheat, rape seed etc. More species will be added and will be done by CAAS and some DUS stations (e.g. Harbin).

1.3.9 Comparison description after 1st year with TQ

This is being done during the application process.

1.3.10 Trial design

Trial design protocols are established and are being followed by the examiners.

1.3.11 Quality management system

A Quality Management System for DUS testing stations is not yet implemented.

APPENDIX 1

Table 1: List of protected species, 1 October 2011

The actual situation can be checked at: <http://upov.int/genie/en>

UPOV Code	Botanical Names	English	MoA/SFA
ACACI	Acacia Mill.	Acacia	SFA
ACERR	Acer L.	Maple	SFA
ACTIN	Actinidia Lindl.	Actinidia	MOA
AILAN	Ailanthus		SFA
ALLIU_FIS	Allium fistulosum L.	Welsh Onion	MOA
ALLIU_SAT	Allium sativum L.	Garlic	MOA
AMARA_TRI	Amaranthus tricolor L.		MOA
AMPEL	Ampelopsis hort.	Ampelopsis	SFA
ANTHU	Anthurium Schott	Anthurium; Tail Flower	MOA
APIUM_GRA	Apium graveolens L.	Celeriac; Celery	MOA
ARACH_HYP	Arachis hypogaea L.	Groundnut; Peanut	MOA
ARDIS	Ardisia Sw.		SFA
BAMBU	Bambusa Schreb.	Bamboo	SFA
BEGON	Begonia L.; Begonia-Hybridae	Begonia	MOA
BETUL	Betula L.	Birch	SFA
BOEHM	Boehmeria Jacq.	False nettle	MOA
BRASS_JUN	Brassica juncea (L.) Czern.; Brassica juncea (L.) Czern. et Coss. in Czern.	Brown mustard; India mustard; Indian mustard; Oriental mustard	MOA
BRASS_NAP	Brassica napus L.		MOA
BRASS_OLE_GB	Brassica oleracea L. convar. botrytis (L.) Alef.		SFA
BRASS_OLE_GBB	Brassica oleracea L. convar. botrytis (L.) Alef. var. botrytis; Brassica cauliflora lizg	Cauliflower	MOA
BRASS_OLE_GBC	Brassica oleracea L. convar. botrytis (L.) Alef. var. cymosa Duch.; Brassica oleracea L. convar. botrytis (L.) Alef. var. italica Plenck; Brassica oleracea L. var. botrytis (L.) Alef. var. botrytis Duch.; Brassica oleracea L. var. italica Plenck; Brassica oleracea var. cymosa Duch	Calabrese; Sprouting Broccoli; Winter broccoli	SFA
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.	White Cabbage	MOA

UPOV Code	Botanical Names	English	MoA/SFA
BRASS_RAP_CHI	Brassica rapa L. Emend. Metzg. ssp. chinensis (L.) Hanelt; Brassica campestris subsp. chinensis (L.) Makino; Brassica chinensis L.; Brassica rapa L. ssp. chinensis Jusl.	Chinese Cabbage; Chinese White Cabbage; Pak Choi; Pakchoi	MOA
BRASS_RAP_PEK	Brassica rapa L. Emend. Metzg. ssp. pekinensis (Lour.) Hanelt; Brassica campestris L. ssp. Pekinensis (Lour.) Olsson; Brassica campestris L. ssp. pekinensis (Lour.) Rupr.; Brassica pekinensis (Lour.) Rupr.	Chinese Cabbage	MOA
BUXUS	Buxus L.	Box	SFA
CALAM	Calamus L.		SFA
CAPSI	Capsicum L.	Sweet Pepper	MOA
CASTA_MOL	Castanea mollissima Bl.	Chinese Chestnut	SFA
CASTP	Castanopsis		SFA
CATAL	Catalpa Scop.	Indian Bean	SFA
CHANM	Chaenomeles Lindl.	Flowering Quince; Quince	SFA
CHIMO_PRA	Chimonanthus praecox (L.) Link	Winter Sweet	SFA
CHRYL	Chrysanthemum L.; Chrysanthemum dendranthema; Dendranthema (DC.) Desmoul.	Chrysanthemum; Daisies	MOA
CINNA	Cinnamomum		SFA
CITRU	Citrus L.	Citrus	MOA
CLAUS	Clausena Burm. f.		SFA
CMLIA	Camellia L.	Camellia	SFA
CMLIA_SIN	Camellia sinensis (L.) Kuntze; Thea sinensis L.	Tea	MOA
COTIN	Cotinus Mill. (Rhus L. in part)	Smoke Tree	SFA
CRYLS	Corylus L.	Filbert; Hazelnut	SFA
CTRLS_LAN	Citrullus lanatus (Thunb.) Matsum. & Nakai; Citrullus vulgaris Schrad.	Watermelon; Wild melon	MOA
CUCUM_MEL	Cucumis melo L.; Melo sativus Sarg.	Melon	MOA
CUCUM_SAT	Cucumis sativus L.	Cucumber; Gherkin	MOA
CUCUR_PEP	Cucurbita pepo L.; Cucurbita pepo L. subsp. ovifera (L.) D. S. Decker var. ovifera (L.) Harz; Cucurbita pepo L. subsp. pepo var. pepo; Cucurbita pepo L. var. montia Duch; Cucurbita pepo L. var. patisson Duch; Cucurbita pepo var. giraumontia Filov; Cucurbita pepo var. melopepo (L.) Harz; Cucurbita pepo var. styriaca Greb.	Courgette; Marrow; Pumpkin; Summer squash; Table queen squash; Vegetable Marrow; Zucchini	MOA

UPOV Code	Botanical Names	English	MoA/SFA
CUNNI_LAN	<i>Cunninghamia lanceolata</i> (Lamb.) Hook.	Chinese Fir	SFA
CYCAS	<i>Cycas</i> L.		SFA
CYMBI	<i>Cymbidium</i> Sw. ; <i>Grammato cymbidium</i>	Cymbidium	MOA
CYMBI_GOE	<i>Cymbidium goeringii</i> Rchb. f.	Cymbidium	MOA
DAEMO	<i>Daemonorops</i> Blume		SFA
DAUCU_CAR	<i>Daucus carota</i> L. ; <i>Daucus carota</i> L. ssp. <i>sativus</i> (Hoffm.) Schübl. et G. Martens ; <i>Daucus carota</i> L. subsp. <i>sativus</i> (Hoffm.) <i>Arcang.</i> var. <i>sativus</i> Hoffm.	Carrot	MOA
DIANT	<i>Dianthus</i> L.	Carnation ; Clove Pink ; Pink ; Sweet William	MOA
DIMOC_LON	<i>Dimocarpus longan</i> Lour.	Dragon's Eye ; Longan fruit	MOA
DIOSP	<i>Diospyros</i> L.	Japanese Persimmon ; Kaki	SFA
DIOSP_KAK	<i>Diospyros kaki</i> L. f.	Japanese Persimmon ; Kaki	SFA
EUCAL	<i>Eucalyptus</i> L'Hér.	Eucalyptus	SFA
EUONY	<i>Euonymus</i> L.	Spindle Tree	SFA
EUPHO	<i>Euphorbia</i> L.	Spurges	SFA
FICUS	<i>Ficus</i> L.	Fig Tree	SFA
FORSY	<i>Forsythia</i> Vahl ; <i>Forsythia hybrida</i>	Forsythia ; Golden Bell	SAF
FRAGA_ANA	<i>Fragaria xananassa</i> Duch. ; <i>Fragaria grandiflora</i> Ehrh. non (L.) Crantz	Strawberry	MOA
FRAXI	<i>Fraxinus</i> L.	Ash	SFA
GERBE_JAM	<i>Gerbera jamesonii</i> Bolus ex Hook. f.	Gerbera	MOA
GINKG_BIL	<i>Ginkgo biloba</i> L.	Ginkgo ; Maidenhair Tree	SFA
GLADI	<i>Gladiolus</i> L. ; <i>Gladanthera</i> ; <i>Gladiolus</i> x hybrid	Gladiolus	MOA
GLYCI_MAX	<i>Glycine max</i> (L.) Merr. ; <i>Soja hispida</i> Moench	Soya Bean ; Soybean	MOA
GOSSY	<i>Gossypium</i> L.	Cotton	MOA
GUZMA	<i>Guzmania</i> Ruiz et Pav. ; <i>Guzmania</i> hybrid	Guzmania	MOA
HEDER	<i>Hedera</i> L.	Ivy	SFA
HEVEA_BRA	<i>Hevea brasiliensis</i> (Willd. ex A. Juss.) Müll. Arg.	Hevea ; Natural rubber ; Para rubber ; Rubbertree	MOA

UPOV Code	Botanical Names	English	MoA/SFA
HIPPH	Hippophae L.; Hippophaë L.	Sea Buckthorn	SFA
HORDE	Hordeum L.	Barley	MOA
HYLOT_TAT	Hylotelephium tatarinowii (Maxim.) H.Ohba		MOA
IMPAT_BAL	Impatiens balsamina L.	Garden Balsam	MOA
IMPAT_HAW	Impatiens hawkeri Bull; Impatiens linearifolia Warb.	Impatiens	MOA
IMPAT_WAL	Impatiens walleriana Hook. f.; Impatiens holstii Engl. & Warb.; Impatiens sultani Hook. f.	Busy Lizzie	MOA
INDOC	Indocalamus Nakai		SFA
IPOMO_BAT	Ipomoea batatas (L.) Lam.; Ipomoea batatas (L.) Poir.	Sweet Potato	MOA
JUGLA	Juglans L.	Walnut	SFA
JUNIP_SAB	Juniperus sabina L.; Sabina Mill.	Savin; Savin juniper	SFA
KOELR	Koelreuteria		SFA
LAGER_IND	Lagerstroemia indica L.; Lagerstroemia indica prostrata	Crape Myrtle	SFA
LILIU	Lilium L.	Lily	MOA
LIMON	Limonium Mill.	Sea Lavender; Statice	MOA
LINUM_USI	Linum usitatissimum L.; Linum humile Mill.; Linum usitatissimum L. f. elongata; Linum usitatissimum L. var intermedia Vav et Ell	Flax; Linseed	MOA
LIRID	Liriodendron L.	Tulip Tree	SFA
LITCH_CHI	Litchi chinensis Sonn.	Litchi	MOA
LONIC	Lonicera L.	Honeysuckle; Lonicera	SFA
LOROP	Loropetalum		SFA
LYCIU	Lycium		SFA
MACHI	Machilus Nees		SFA
MAGNO	Magnolia L.; Michelia L.	Magnolia	SFA
MALUS	Malus Mill.	Apple	MOA
MANGL	Manglietia Blume		SFA
MANIH_ESC	Manihot esculenta Crantz	cassava	MOA
MEDIC_SAT	Medicago sativa L.	Alfalfa; Lucerne	MOA
MORUS	Morus L.	Mulberry	MOA
MUSAA_ACU	Musa acuminata Colla; Musa cavendishii Lamb.	Banana; Cavendish banana; Chinese banana;	MOA

UPOV Code	Botanical Names	English	MoA/SFA
		Dwarf banana	
NELUM_NUC	Nelumbo nucifera Gaertn.	East Indian Lotus	MOA
ORYZA_SAT	Oryza sativa L.	Rice	MOA
OSMAN_FRA	Osmanthus fragrans (Thunb.) Lour.		SFA
PAEON	Paeonia L.	Paeony	SFA
PAEON_SUF	Paeonia suffruticosa Andrews; Paeonia moutan Sims; Paeonia suffruticosa Andr.	Moutan Paeony; Tree Paeony	SFA
PANAX_GIN	Panax ginseng C.A. Mey.	Ginseng	MOA
PARAK	Parakmeria Hu et Cheng		SFA
PAULO	Paulownia Sieb. et Zucc.	Royal Paulownia	SFA
PHALE	Phalaenopsis Bl.	Moth Orchid	MOA
PHASE_VUL	Phaseolus vulgaris L.	French Bean	MOA
PHYLS	Phyllostachys Sieb. et Zucc.	Phyllostachys	SFA
PICEA	Picea A. Dietr.	Spruce	SFA
PINUS	Pinus L.	Pine	SFA
PISUM_SAT	Pisum sativum L. ; Pisum arvense L. ; Pisum sativum L. convar axiphium Alef; Pisum sativum L. convar medullare Alef Emend C. O. Lehm; Pisum sativum L. convar sativum; Pisum sativum L. spp. sativum conv. speciosum Dierb. ; Pisum sativum L. ssp sativum convar axiphium Alef Emend C. O. Lehm; Pisum sativum L. ssp sativum convar medullare; Pisum sativum L. ssp sativum convar medullare Alef Emend C. O. Lehm; Pisum sativum L. subsp. sativum; Pisum sativum L. subsp. sativum var. arvense (L.) Poir. ; Pisum sativum L. subsp. sativum var. sativum; Pisum sativum L. var arvense L. Gams; Pisum sativum var. speciosum (Alef.) Makasheva	Field Pea; Garden Pea; Green pea; Pea	MOA
PLEUR_NEB	Pleurotus nebrodensis (Inzenga) Quéf.		MOA
POAAA_PRA	Poa pratensis L.	Kentucky Bluegrass; Smooth Stalked Meadow Grass	MOA
PODOC	Podocarpus L'Hérit. ex Pers.	Podocarpus	SFA
POPUL	Populus L.	Poplar	SFA
PRTNC	Parthenocissus Planch.	Virginia Creeper	SFA
PRUNU_ARM	Prunus armeniaca L. ; Armeniaca vulgaris Lam.	Apricot	SFA
PRUNU_CSF	Prunus cerasifera Ehrh. ; Prunus cerasifera var. nigra	Cherry-plum; Myrobalan	MOA

UPOV Code	Botanical Names	English	MoA/SFA
PRUNU_DOM	Prunus domestica L.; Prunus L. subg. Prunus; Prunus subg. Prunus	Plum	MOA
PRUNU_MUM	Prunus mume Siebold & Zucc.; Prunus mume Sieb. et Zucc.	Japanese Apricot	SFA
PRUNU_PER	Prunus persica (L.) Batsch; Persica vulgaris Mill.; Prunus L. subg. Persica	Peach	MOA
PRUNU_SAL	Prunus salicina Lindl.	Japanese Plum; Plum	MOA
PRUNU_TRI	Prunus triloba Lindl.	Flowering Almond	SFA
PTERO	Pterocarpus		SFA
PUNIC	Punica L.	Pomegranate	SFA
PYRUS	Pyrus L.	Pear	MOA
RANUN_ASI	Ranunculus asiaticus L.	Garden Ranunculus	MOA
RAPHA_SAT_NIG	Raphanus sativus L. var. niger (Mill.) S. Kerner; Raphanus sativus L. var. major A. Voss; Raphanus sativus var. longipinnatus L. H. Bailey	Black Radish	MOA
RAPHA_SAT_SAT	Raphanus sativus L. var. sativus; Raphanus sativus L. var. radicula Pers.; Raphanus sativus L. var. radiculus Pers.	Radish; Small radish; Turnip radish	MOA
RHODD	Rhododendron L.; Azalea	Azalea; Azaleodendron; Rhododendron	SFA
ROBIN	Robinia L.	False Acacia	SFA
ROSAA	Rosa L.	Rose	SFA
RUMEX	Rumex L.		MOA
SACCH	Saccharum L.	Sugar Cane	MOA
SALIX	Salix L.	Willow	SFA
SESAM_IND	Sesamum indicum L.	Sesame	MOA
SETAR_ITA	Setaria italica (L.) P. Beauv.; Setaria italica L.	Foxtail Bristle Grass; Italian Millet	MOA
SOLAN_LYC	Solanum lycopersicum L.; Lycopersicon esculentum Mill.	Tomato	MOA
SOLAN_MEL	Solanum melongena L.	Aubergine, Eggplant	MOA
SOLAN_TUB	Solanum tuberosum L.	Potato	MOA
SOPHO	Sophora L.	Pagoda Tree	SFA
SRGHM_BIC	Sorghum bicolor (L.) Moench; Sorghum dochna (Forssk.) Snowden; Sorghum saccharatum (L.) Moench; Sorghum technicum Batt. & Trab.; Sorghum vulgare Pers.	Broomcorn; Durra; Feterita; Forage Sorghum; Grain sorghum; Great Millet; Kaffir-corn; Milo; Shallu;	MOA

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		Sorghum; Sweet sorghum	
STREL	Strelitzia Ait.	Bird of Paradise Flower	MOA
STYLO	Stylosanthes Sw.; Stylosanthes		MOA
SYRIN	Syringa L.	Lilac	SFA
TAXOD	Taxodium		SFA
TAXUS	Taxus L.	Yew	SFA
THUJA	Thuja L.	Thuya	SFA
TRITI_AES	Triticum aestivum L.; Triticum aestivum L. emend. Fiori et Paol.	Wheat	MOA
ULMUS	Ulmus L.	Elm	SFA
VERNI	Vernicia		SFA
VICIA_FAB	Vicia faba L.; Faba vulgaris Moench ssp. vulgaris	Broad Bean; Field Bean; Horse Bean; Tick Bean	MOA
VIGNA_ANG	Vigna angularis (Willd.) Ohwi & H. Ohashi; Phaseolus angularis (Willd.) W. Wight	Adzuki Bean; Azuki Red Bean; Chinese red bean	MOA
VIGNA_RAD	Vigna radiata (L.) R. Wilczek; Phaseolus aureus Roxb.; Phaseolus radiatus L.	Mungbean	MOA
VIGNA_UNG	Vigna unguiculata (L.) Walp.	Cowpea	MOA
VITIS	Vitis L.	Grapevine	MOA
ZANTH	Zanthoxylum		SFA
ZEAAA_MAY	Zea mays L.	Corn; Maize	MOA
ZELKO	Zelkova Spach	Zelkova	SFA
ZIZIP_JUJ	Ziziphus jujuba Mill.	Chinese jujube; Chinese-date; Common jujube; Jujube	SFA
ZIZIP_SAT	Ziziphus sativa Gaertn.	Jujube	SFA