Succulent Plants

A guide to CITES-listed species

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Contents

Introduction

The purpose of this guide is to introduce you to the succulent plants that are regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the European Wildlife Trade Regulations (EU WTR). The guide covers the key issues regarding the implementation of the Convention for this important group of plants including which species and their parts and derivatives are regulated under CITES and the EU WTR; understanding a CITES listing; identification techniques available; enforcement issues; and resources on where to find more assistance or information.

Hoodia gordonii

Succulent plants

This guide covers plant species that exhibit a common characteristic of succulents (i.e. the ability to store water in, or reduce the loss of water from, one or more organs of the plant such as stems, leaves, roots) or that are grown because they are drought-tolerant.These characteristics allow a plant to survive certain habitats and climates, in particular arid regions of the world. With a global distribution, CITES-listed succulent plants are represented in 18 families ranging from small plants to large trees. Cacti, *Aloe* and *Euphorbia* are among the major succulent plants in trade.

Due to their ability to survive drought conditions and the advent of affordable heating required to grow these plants outside their natural range, succulent plants are particularly favoured as house plants. They are also popular in landscaping where drought-tolerant plants are required (xeriscaping) and are prized by many plant collectors due to their unusual growth forms or their rarity in the wild. This guide provides information on many aspects of the trade in succulent species noting that the identification of the different species and differentiation between succulent plant groups can be difficult for the non-expert. The taxonomy and scientific names assigned to many succulent plants can be complex and the CITES listing can include individual species or all species within a particular genus or family. Always contact a botanical or taxonomic expert as soon as possible when dealing with succulent plants to ensure you understand the listing and associated issues. For definitions of many of the terms used in the CITES listings and in this guide, see *GLOSSARY* on page 97.

Succulent roots - *Harpagophytum*

Succulent leaves - *Aloe*

Succulent stems - *Pachypodium*

CITES and succulents

Due to the unsustainable trade in certain succulent plants for the horticultural, food, cosmetic and medicinal industries, many species are regulated under CITES. This guide covers the trade in and use and identification of major CITES-listed succulent plant groups including succulent *Euphorbia*, species in the genera *Aloe, Pachypodium, Hoodia* and *Agave* as well as minor or newly listed species. It also covers the three regulated *Tillandsia* species, due to their ability to survive drought conditions, and those species that are monitored under Annex D of the EU WTR. Cacti are some of the largest and most popular succulent plants in trade, and the entire family is listed under CITES; this publication does not include this family as due to its size and importance a separate guide called *CITES and Cacti* was produced (https://tinyurl.com/y7k7pgqa).

Cacti

Almost all species (over 1,700) of the Cacti family are listed in the CITES Appendices; the majority in CITES Appendix II and Annex B to the EU WTR and a number of the more endangered species and genera in Appendix I/Annex A. This large plant family ranges in form and size from tiny succulents to towering columnar cacti. The origin of cacti diversity is the Americas, from North America, in particular southwestern USA and Mexico, through Central America to South America, in particular northern Argentina, Bolivia, Chile and Peru. One genus (*Rhipsalis*) is also found in Africa (e.g. Madagascar, Kenya) and Asia (e.g. Sri Lanka) and many cacti species have been introduced and naturalised outside their native range. Cacti have certain key identifying characteristics, including areoles, specialised structures on their stems which give rise to leaves, spines and flowers. Most cacti show adaptations that help reduce water loss or increase water storage.

Cacti are an economic and culturally important plant group artificially propagated in huge numbers for use in horticulture as house plants and specimen plants in drought-tolerant landscaping. They are also utilized in traditional medicine and the food (e.g. prickly pears) and cosmetic industries (e.g. cactus seed oil). A number of cacti have hallucinogenic properties (e.g. mescaline) that are used in traditional ceremonies or as recreational drugs ("legal highs"), some of which are now banned in a number of countries. Specified artificially propagated hybrids and cultivated varieties are exempt from regulation as their mass production is of no conservation concern to the species in the wild. While the majority of the legal trade in cacti is from artificially propagated sources, demand from the wild continues and illegal collection remains a threat, particularly to new populations or species, or to meet new trends in horticulture.

Cacti

Plant names

When dealing with a plant it is important to refer to its accepted scientific or Latin name (e.g. *Aloe vera*) so that there is certainty over the identity of the specimen in question. Using common or trade names is unadvisable as they can apply to more than one group of plants or to species not regulated under CITES.

CITES adopts "Standard References" to be used by Parties when referring to the scientific names of taxa listed on the Convention. These references provide the basis to determine which names should be used on CITES permits and annual reports (the accepted names) as adopted by a CITES Conference of the Parties (CoP). The references, where possible, include the major synonyms (the non-accepted names) that apply to these taxa. The list of "Standard References" is updated at every CoP based on the recommendations of the CITES Animal and Plants Committees and is included in a CITES Resolution (for flora see Annex 2 of Resolution Conf. 12. 11 (Rev. CoP17) Standard Nomenclature (https://cites.org/eng/res/index.php).

Where a standard reference has been adopted for a species or genus this reference is given. Where no standard reference is available we recommend a suitable source, but this is merely our recommendation. In such cases you can seek clarification or a definitive decision from the Scientific Services Unit (http://www.cites.org/eng/disc/sec/staff.php) of the CITES Secretariat who may confer with the Nomenclature Specialist of the CITES Plants Committee to provide you with more formal guidance on the appropriate scientific name. See *REFERENCES AND RESOURCES* in this guide for more information.

Euphorbia moratii

Regulating the trade in succulent plants

There are a number of national, regional and international guidelines, legislation and treaties in place to monitor and regulate the global trade in succulent plants.

CITES

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international treaty that came into force in 1975 (https://www.cites.org/eng). Its aim is to regulate the international trade in plants and animals threatened through trade (import, export and re-export) by means of a permit system. When a Party implements CITES it has to establish at least one Management Authority (MA) and at least one Scientific Authority (SA). When unsustainable trade threatens a species' survival in the wild it can be proposed for listing in one of three Appendices (Appendix I, II or III) by one or more of the Parties to CITES, either at the Conference of the Parties (CoP) or, if the Party is a range State, unilaterally at any time on Appendix III. Legality and sustainability checks are necessary for species listed in Appendix I and II but Appendix III species only require that the specimen was not obtained in contravention of national legislation. The Convention allows for Parties to take "stricter measures", such as imposing stricter export or import requirements.

CITES Decisions, Resolutions and Notifications provide recommendations, guidance and interpretation of the Convention text. Those currently in effect are found on the CITES website. A number of the current CITES Resolutions relevant to succulent plants are shown in the following table.

European Union (EU) – Implementation of CITES

All member States of the EU are Parties to CITES and implement it uniformly through a set of regulations called the EU Wildlife Trade Regulations (EU WTR – https://tinyurl.com/nq778e6). The species covered by these Regulations are listed in four Annexes (A, B, C and D). The provisions of these Regulations go beyond those of CITES as shown by the requirement for an import permit for Appendix II/Annex B species, stricter requirements for the import of pre-Convention material and the possibility to impose import restrictions for certain species/country combinations. A Reference Guide to the EU WTR can be found at https://tinyurl.com/npooly5 and a guide on the differences between CITES and the EU WTR is found at https://tinyurl.com/qbz6za2.

Under the EU WTR three main groups are established: the Committee on Trade in Wild Fauna and Flora, the Scientific Review Group (SRG) and the Enforcement Group. When the sustainability of an import into the EU is highlighted by a member State's CITES SA, this may lead to other member States refusing similar imports and the application being discussed at a meeting of the SRG, which are held four times a year. The SRG forms one of three opinions (https://tinyurl.com/hmqc29f) – positive, negative or no opinion. The latter opinion contains three possible options. These may lead to EU import suspensions and ultimately a restriction being put in place for that species/country combination. The opinions of the SRG meeting are posted online (within five days) on Species + (www.speciesplus.net). For links to a range of EU national agencies concerned with CITES and wildlife trade go to https://tinyurl.com/outnq6h.

The Lacey Act

This U.S. Act states it is illegal to import, export, sell, acquire, or purchase fish, wildlife or plants that are taken, possessed, transported, or sold in violation of U.S. or Indian law or in interstate or foreign commerce involving any fish, wildlife, or plants taken, possessed or sold in violation of a State or foreign law. It includes CITES species and was amended in 2008 to increase the protection of plants and plant products (https://tinyurl.com/ycr4jer8).

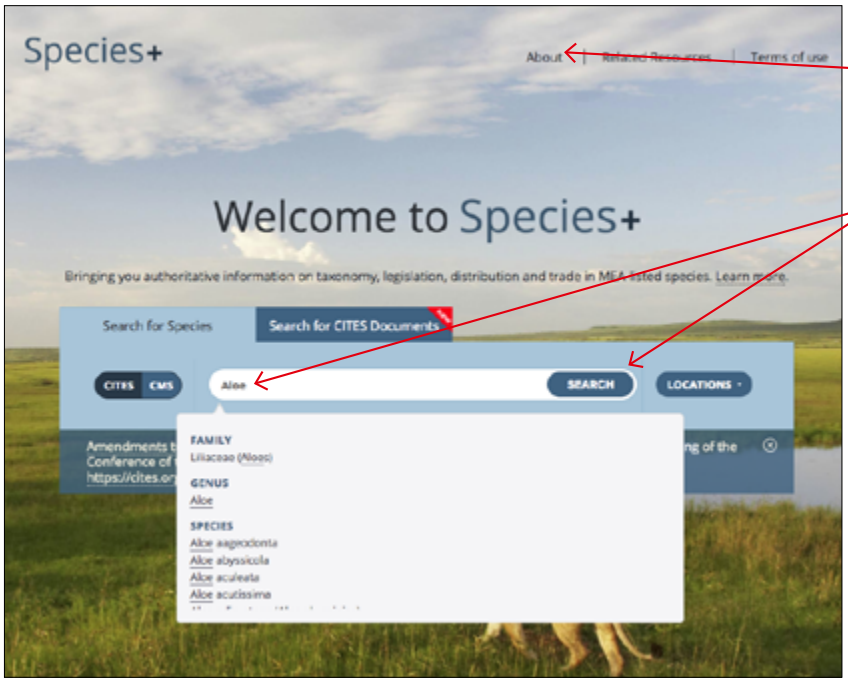
Resolution	Scope
Resolution Conf. 9.6 (Rev. CoP16) *Trade in readily recognizable parts and derivatives* https://tinyurl.com/ycp7hmfd	Provides guidance on the use of the term 'readily recognizable part or derivative', as used in the Convention. It interprets it to include any specimen which appears from an accompanying document, the packaging or a mark or label, or from any other circumstances, to be a part or derivative of an animal or plant of a species included in the Appendices, unless such part or derivative is specifically exempted from the provisions of the Convention.
Resolution Conf. 9.19 (Rev. CoP15) *Registration of nurseries that artificially propagate specimens of Appendix-I plant species for export purposes* https://tinyurl.com/y94wklfa	Commercial trade in specimens of Appendix I species is permitted only in exceptional circumstances. The Convention allows Parties to make certain exceptions to this general principle. For example, Appendix I species artificially propagated for commercial purposes are treated as species included in Appendix II and commercial trade can take place. To facilitate this Resolution Conf. 9.19 (Rev. CoP15) outlines a nursery registration scheme for commercial trade in artificially propagated Appendix I species (see *CITES NURSERY REGISTRATION SCHEME* chapter in this guide).
Resolution Conf. 10.21 (Rev. CoP16) *Transport of live specimens* http://tinyurl.com/y9auktzr	This Resolution covers the CITES transport requirements for animals and plants. This includes Parties adhering to the IATA *Live Animals Regulations* (for animals), the IATA *Perishable Cargo Regulations (for plants)* and the *CITES guidelines for the non-air transport of live wild animals and plants*.
Resolution Conf. 11.11 (Rev. CoP17) *Regulation of trade in plants* https://tinyurl.com/yd33vk27	Resolution Conf. 11.11 (Rev. CoP17) contains the CITES definition of artificial propagation. Key criteria are that artificially propagated Appendix I/Annex A species can be treated as Appendix II/Annex B species allowing trade for commercial purposes; and that cultivated parental stock must have been *"established in accordance with the provisions of CITES and relevant national laws"*. See *IDENTIFICATION* chapter in this guide for more information on the definition of artificial propagation.
Resolution Conf. 13.6 (Rev. CoP16) *Implementation of Article VII, paragraph 2, concerning 'pre-Convention' specimens* https://tinyurl.com/ybaq86g2	There is an exemption from the Convention rules for "pre-Convention" specimens i.e. a specimen that was acquired before the provisions of the present Convention applied to it. A guide to what this term means and the differences between how CITES and the EU WTR interpret this exemption can be found at https://tinyurl.com/npooly5
Resolution Conf. 13.7 (Rev. CoP17) *Control of trade in personal and household effects* https://tinyurl.com/yae6u289	Resolution Conf. 13.7 (Rev. CoP17) outlines where CITES has less strict provisions and permit requirements for trade in specimens of species listed in the Appendices that are considered personal and household effects.
Resolution Conf. 12.11 (Rev. CoP17) *Standard Nomenclature* https://tinyurl.com/y9ybrym8	Resolution Conf. 12.11 (Rev. CoP17) lists the standard nomenclature references for plants and animals listed in CITES. These references outline the current CITES accepted names for each species that should be used on permits and to determine whether the specimen is regulated or not. The references can only be adopted at a CoP. **NOTE:** not all regulated species or genera have a CITES-accepted standard reference and new names/more up-to-date taxonomic references may be available.

Understanding a CITES listing

When a species is listed in the CITES Appendices or EU Annexes it is important to understand the information attached to the listing to ensure it is implemented and enforced correctly. There are numerous sites to help you including the CITES website (http://www.cites.org) and the EU website on CITES implementation (http://tinyurl.com/nq778e6). One central point of information is called Species + (www.speciesplus.net), a website developed by UNEP-WCMC (http://www.unep-wcmc.org) and the CITES Secretariat to assist Parties with implementing a number of multilateral environmental agreements (MEAs) including CITES. Below are a series of basic questions that may help you understand the scope of a succulent plant listing.

1. Is the specimen listed in the CITES Appendices and/or the EU Annexes?

For CITES-listed species check the current Appendices (http://tinyurl.com/yd6zlqz9), EU Annexes (http://tinyurl.com/nq778e6) or Species + where you can click on DOWNLOAD SPECIES LISTS or type in the name as shown in the example below.

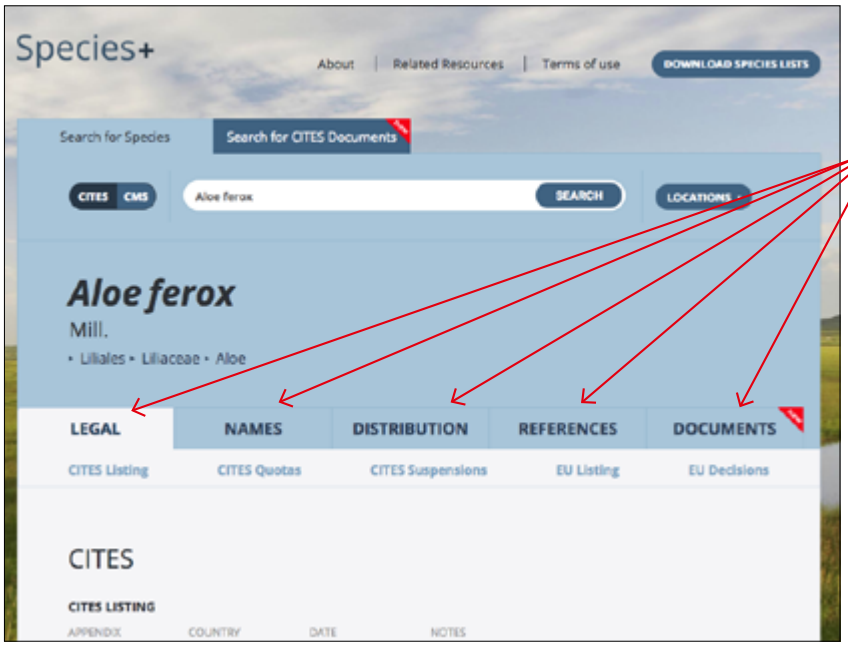


Species + is set to **CITES default**. For guidance on how to use Species + click the ABOUT button

Check to see if a species is listed by typing in the name (scientific or common) and clicking SEARCH. As you are typing Species + may suggest a name to choose from.

Where possible use the scientific name. Using common names can be confusing as more than one species or genera may be assigned to that name.

If in doubt, check with the trader and your SA to clarify what they understand to be the accepted scientific name. Alternatively, check to see if a CITES-accepted standard reference or checklist is available for that species/ genus (http://www.cites.org).

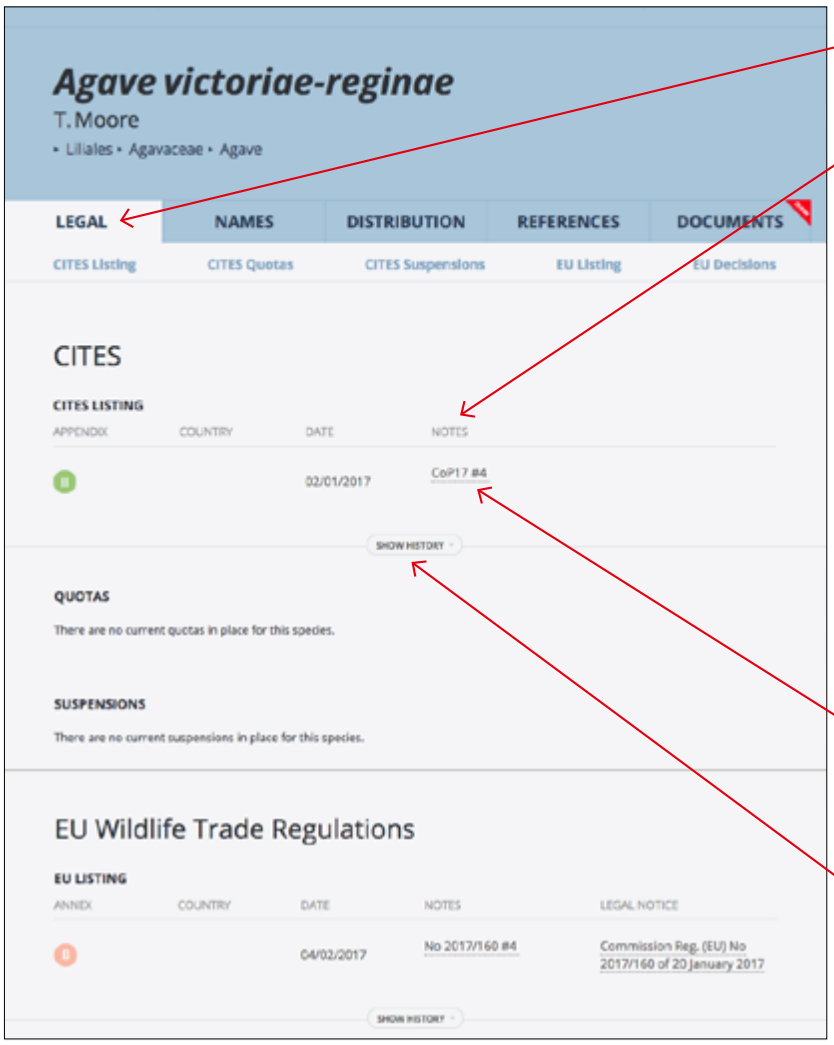


If CITES-listed, an information page with four tabs will appear – LEGAL (information on the CITES listing/ suspensions/ quotas / reservations and EU listing / suspensions / opinions); NAMES (scientific and common names); DISTRIBUTION (countries and territories); and REFERENCES (for distribution and CITES standard references); DOCUMENTS (CITES, EU SRG and Intersessional documents).

If not CITES-listed the website will state there are no results for that species. The reasons for this may include there being a delay in the listing coming into force or being published in the EU Annexes, or you may have misspelled the name. Check the outcome of the last CoP or CITES Notifications for more information https://cites.org/eng/notif/2014.php

2. *Which parts and derivatives are regulated?*

When a species is listed under CITES it is necessary to understand what commodities are covered by the listing, and therefore require CITES documents. To clarify this, all CITES listings cover the whole animal or plant, whether alive or dead. In addition, listings may be "annotated" to further refine whether "all parts and derivatives" or merely a subset of them is covered. Plant annotations can be complex and require an understanding of the terms used in them. Check the annotation and definitions with other SAs, in the Interpretation section of the Appendices or EU Annexes and in the CITES Glossary in the CITES website. Definitions in the Glossary are meant as general guidance only as they may not be accepted by all CITES Parties. The CITES Standing Committee, together with the CITES Plants and Animals Committees, is currently working to ensure that the annotations are easier to understand and implement.



Scroll down the LEGAL tab to find the CITES LISTING section. The EU LISTING section is at the end of the LEGAL tab. For both sections, you will find the annotation under the NOTES column. Click on the annotation and a text box appears outlining the scope of the annotation.

Appendix I / Annex A listed plants, apart from orchids, do not have annotations. Therefore, all parts and derivatives, including live or dead specimens, are regulated.

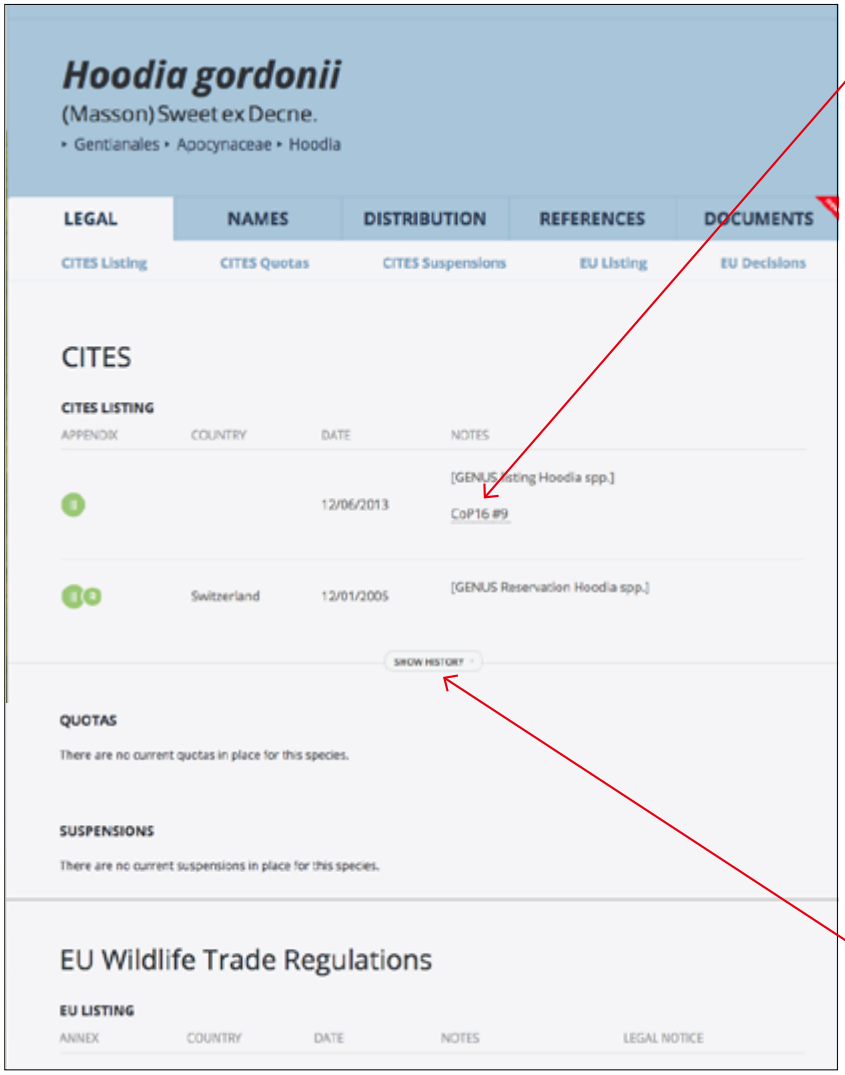
For Appendix II and III / Annex B and C listed plants, if no annotation is present, then all parts and derivatives, live or dead, are regulated. If an annotation is present it will define what is regulated or not. For Annex D species only live specimens are regulated unless the listing is annotated otherwise to denote whether specific parts and derivatives are regulated.

In this example the annotation for *Agave victoriae-reginae* is #4. CoP17 denotes the last CoP which had a bearing on the listing and annotation.

Click on SHOW HISTORY to see the history of the listing and annotation from the first date the species was listed.

Annotations – there are a number of different types of annotations for plants:

- **# numbers e.g. #4, #9, #16** – these define the parts and derivatives that are or are not subject to the provisions of the Convention
- **Small footnote numbers** [9] – these provide information on the listing, such as special conditions e.g. how specimens should be shipped
- **Additional text** – this is usually in parentheses and located in the Appendices / Annexes themselves, and provides information on taxonomic issues or specimens exempt or regulated



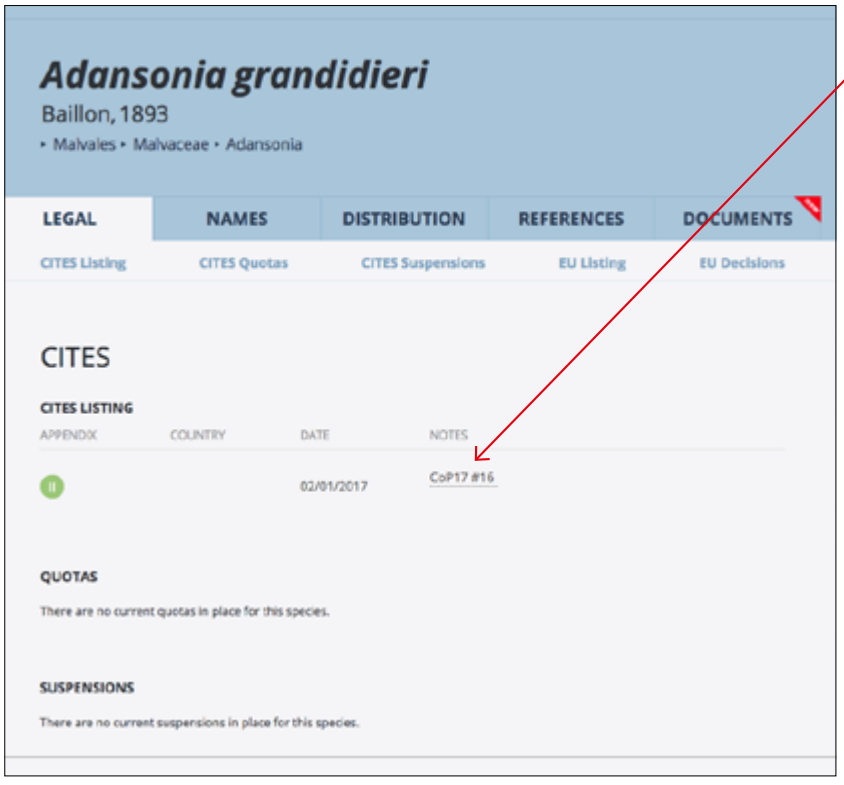
In this example, the annotation for all species of *Hoodia* is #9.

CoP16 denotes the last CoP which had a bearing on the listing and annotation.

Click on the #9 annotation to see the full text. It reads *"All parts and derivatives except those bearing a label: "Produced from Hoodia spp. material obtained through controlled harvesting and production under the terms of an agreement with the relevant CITES Management Authority of [Botswana under agreement No. BW/xxxxxx] [Namibia under agreement No. NA/xxxxxx] [South Africa under agreement No. ZA/xxxxxx]*

This means that all plants and parts and derivatives, live or dead, are regulated EXCEPT for those from South Africa, Namibia and Botswana bearing this label. HOWEVER, to date, the agreements referenced in the annotation have not been concluded, and therefore, at present no live plants or finished or semi-finished products carry such labels. Many CITES Parties interpret this to mean CITES permits are required for ALL *Hoodia* live plants and products from any source.

Click on SHOW HISTORY to see the history of the listing and annotation from the first date the species was listed.

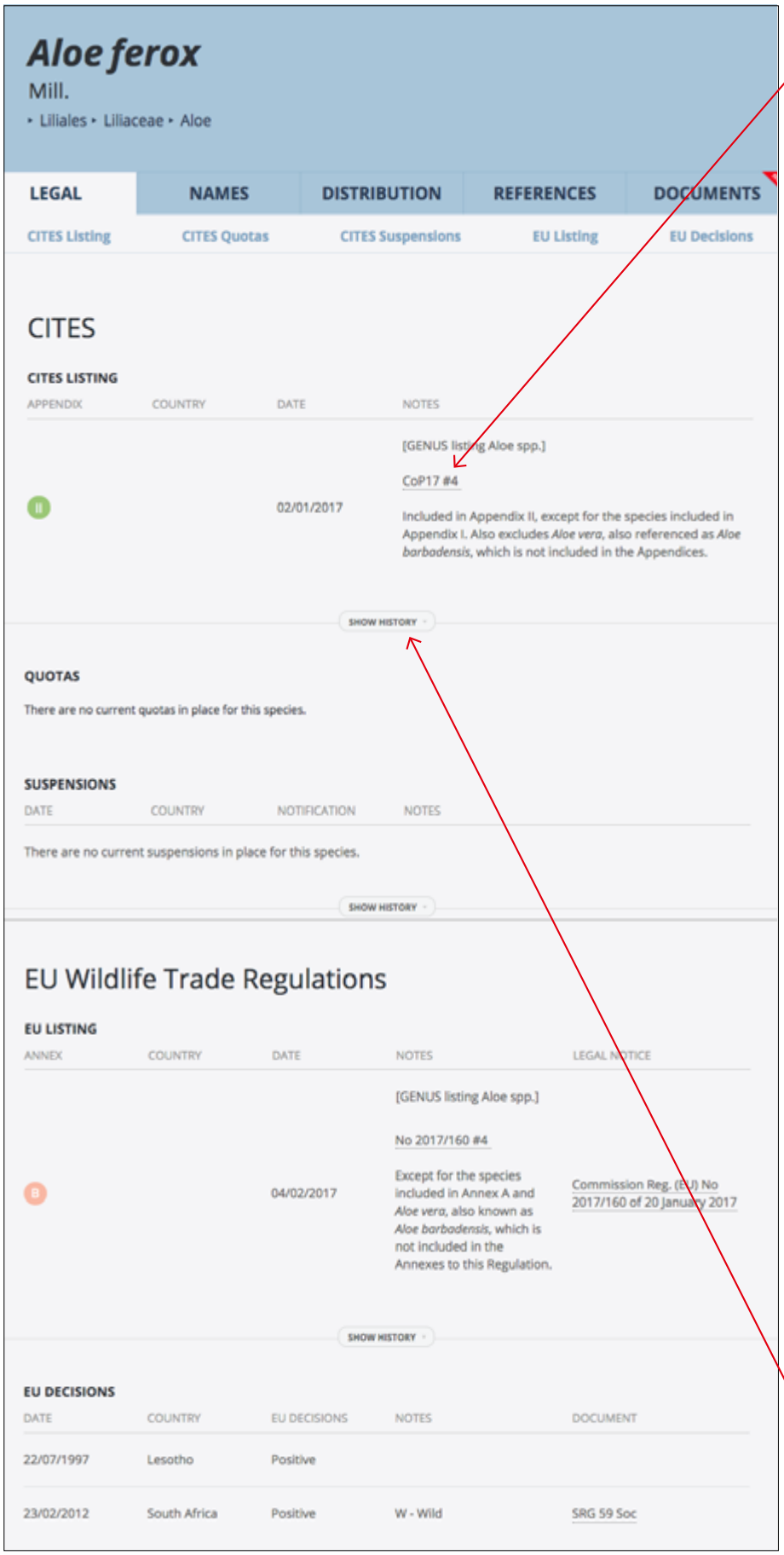


In this example, the annotation for *Adansonia grandidieri* is #16.

Click on the #16 annotation to see the full text. It reads *"seeds, fruits, oil, live plants"*. This means that only seeds, fruits, oil and live plants are regulated for this species regardless of their source. CoP17 denotes the last CoP which had a bearing on the listing and annotation.

NOTE: The inclusion of the term "live plants" in the annotation was an error since all CITES plant listings automatically include live and dead plants. The Plants Committee is working with the CITES Secretariat to note this error, although it can only be corrected at a CoP.

There is no SHOW HISTORY button that outlines the history of the listing and annotation from the first date the species was listed. This is because this species was recently listed at CoP17 (South Africa, 2016).

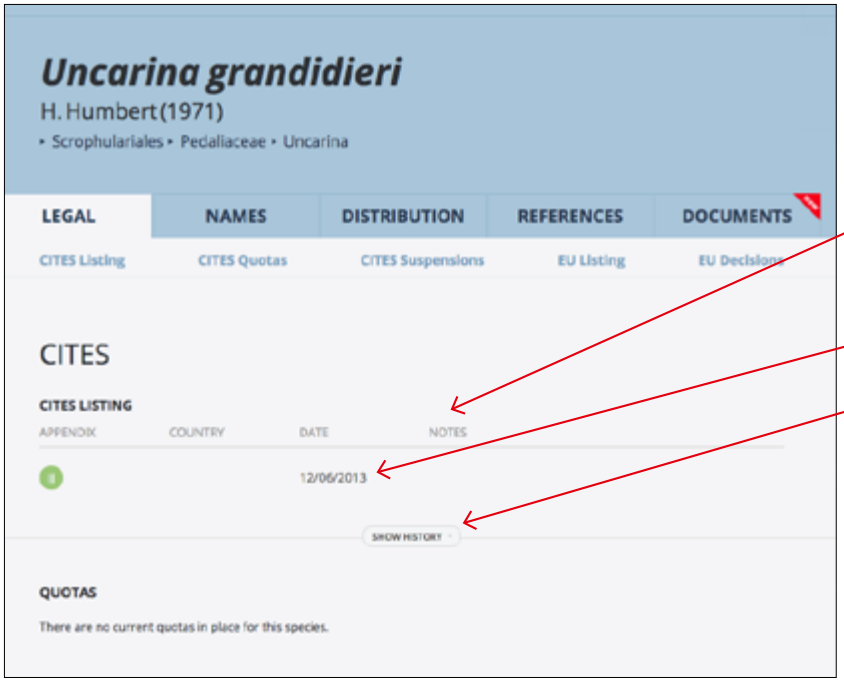


In this example, the annotation for *Aloe* spp. is #4. CoP17 denotes the last CoP which had a bearing on the listing and annotation.
Click on the#4 annotation to see the full text.
All parts and derivatives, except:

a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar;
b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers;
c) cut flowers of artificially propagated plants;
d) fruits, and parts and derivatives thereof, of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae;
e) stems, flowers, and parts and derivatives thereof, of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and
f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade.

Parts d) and e) are only applicable to *Vanilla* orchids and cacti species. For succulent species, parts a), b), c) and f) are applicable and denote that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers from artificially propagated plants, tissue cultured plants still in the sterile flasks or containers and finished products that are packaged and ready for retail trade (i.e., requiring no more manufacturing or packaging) of the species *Euphorbia antisyphilitica*.

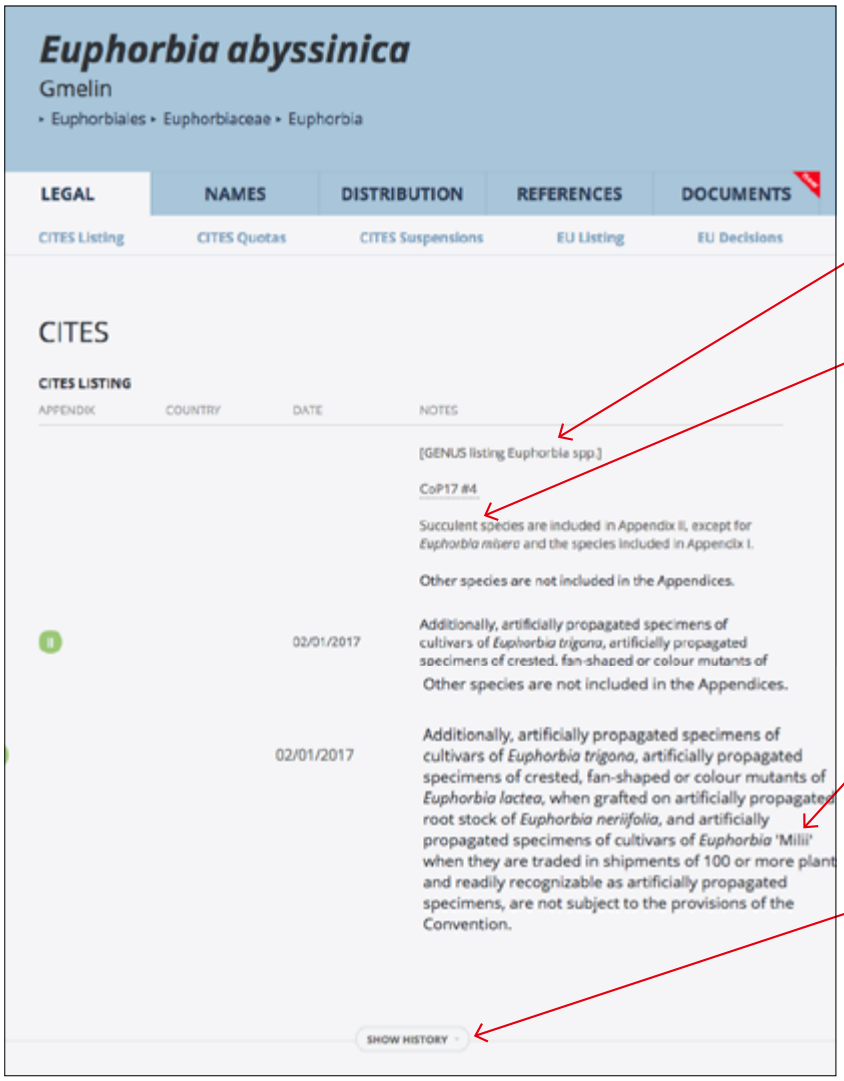
Click on SHOW HISTORY to see the history of the listing and annotation from the first date the species was listed.



A number of the CITES-listed succulent species do not have an annotation or additional text against the listing as shown in this example for *Uncarina grandidieri*.

Annotations, if present, are found under NOTES, which is found under the CITES LISTING heading in the LEGAL tab. In this example there is no annotation or text to click on. The date given is the latest date CITES made significant changes to the listing. If you click on the tab SHOW HISTORY, the box will expand to show the entire CITES listing history of the taxon, including any reservations entered, and if relevant, the date on which they were withdrawn.

As there is no annotation for *Uncarina grandidieri*, all parts and derivatives, live or dead, are regulated.



With a number of succulent genera (e.g. *Aloe* spp. and *Euphorbia* spp.), the CITES listing may be further clarified through additional text presented as parenthetical notes in the online Appendices/Annexes.

In this example, the entire genus *Euphorbia* is shown included in the CITES Appendices. However, the text further down qualifies this by stating that only succulent species of *Euphorbia* are listed in Appendix II / Annex B except for the species *E. misera*, which is not regulated, and those succulent species listed in Appendix I/ Annex A.

The text also clarifies that a number of artificially propagated specimens of certain *Euphorbia* are not regulated when they match the cultivars or mutants as described in the text. For cultivars of *Euphorbia* 'Milii' they must also be traded in shipments of 100 or more plants and when the plants are clearly recognisable as artificially propagated plants.

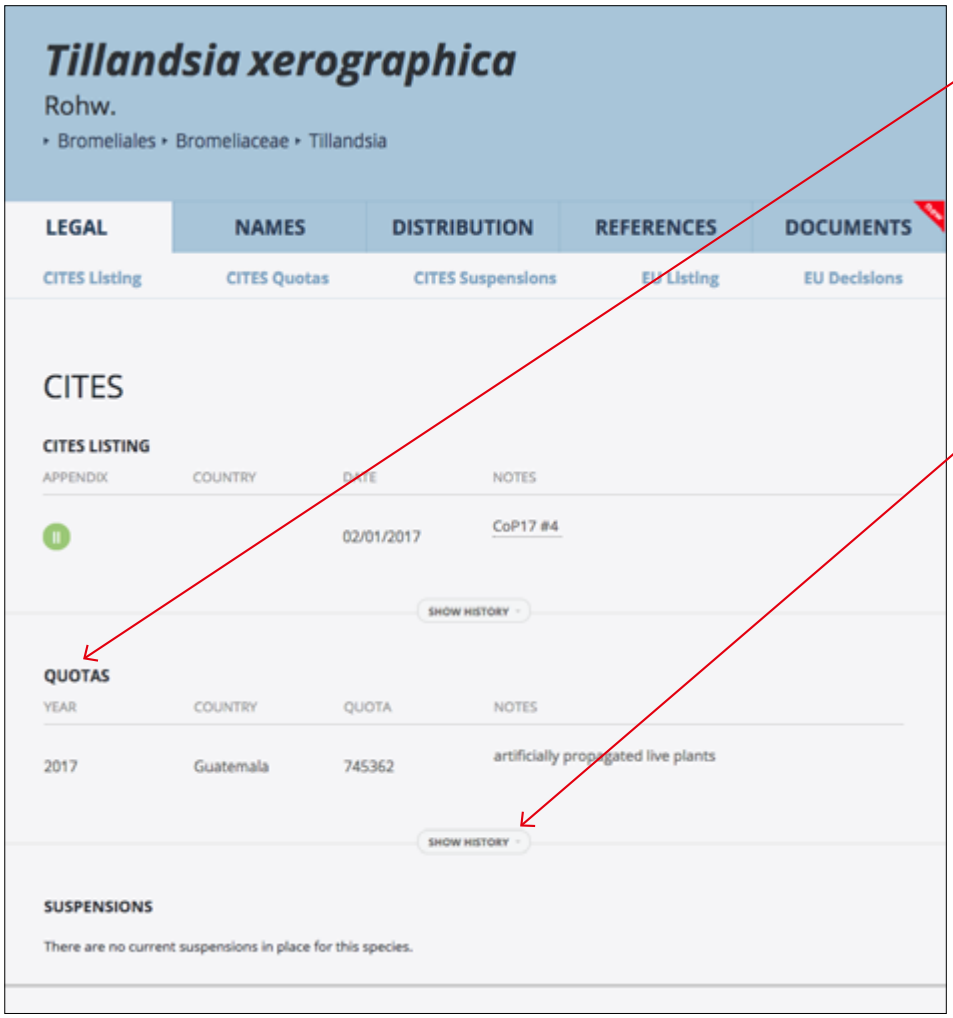
Click on SHOW HISTORY to see the history of the listing and annotation from the first date the species was listed.

3. *Are all populations or only certain populations regulated?*

It is important to understand whether a CITES plant listing covers all populations or only certain populations (e.g. populations of Madagascar, populations of South Africa) as this will determine whether permits are required and if so which ones. Unless the listing includes a note indicating "populations of country X," CITES applies to the species/genus worldwide. For information on permit requirements, check the CITES website and the EU WTR Reference Guide (under *REFERENCES AND RESOURCES*) or for more formal guidance contact the MA of the country of export and import, the CITES Secretariat or the EU Commission.

4. *Are CITES export quotas in place?*

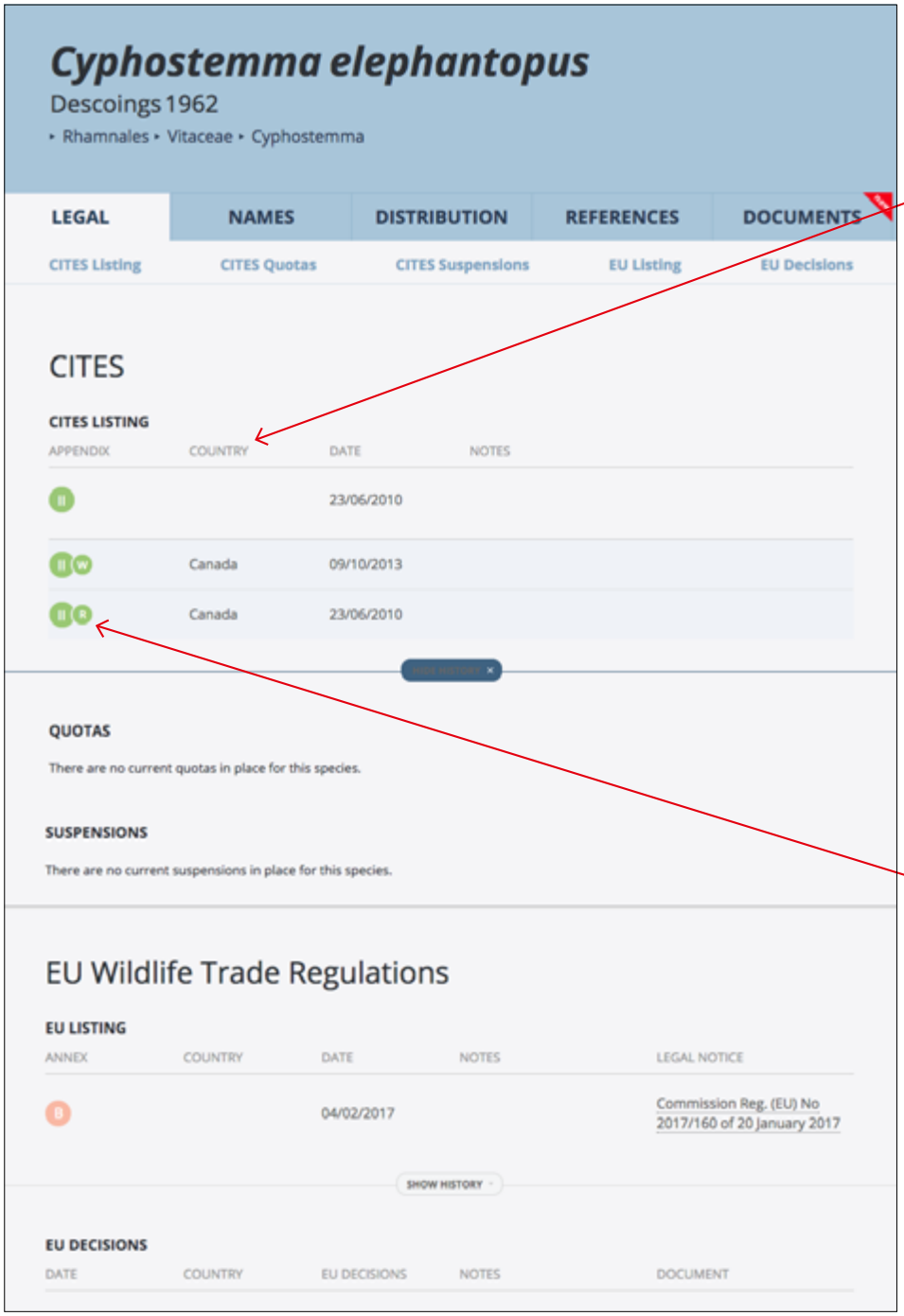
CITES export quotas are established by Parties unilaterally or are set by the CoP as a tool to help regulate trade. They usually run annually (1st January to 31st December) but harvesting periods do not always follow this timeframe. Changes or updates are relayed through a Notification to the Parties. Export quotas since 2000 are available on the CITES website (http://www.cites.org/eng/resources/quotas/index.php).



Scroll down through the LEGAL tab until you reach the QUOTA section. Here you will find the current annual quota per country together with the products it applies to and the quota level. In this example, *Tillandsia xerographica* has a 2017 quota. The quota is only applicable to 745,362 artificially propagated live plants from Guatemala.

Click on SHOW HISTORY for previous quotas, which products they applied to and the previous quota level. Check Species + for export quota updates or the CITES website for a list of annual export quotas (http://tinyurl.com/ybny752u).

5. *Has a country taken out a reservation on the listing?*



A reservation is a unilateral action by a Party not to be bound by the CITES provisions for a particular species listing.

As in the case of Canada, a Party may take a reservation if a species is not yet covered by its own national legislation. That Party is treated as a non-Party with regard to trade in that species and if it exports to a non-Party or another Party with the same reservation, no CITES documents are required. However, Parties trading under reservations are urged to record the trade and report it in their CITES annual reports.

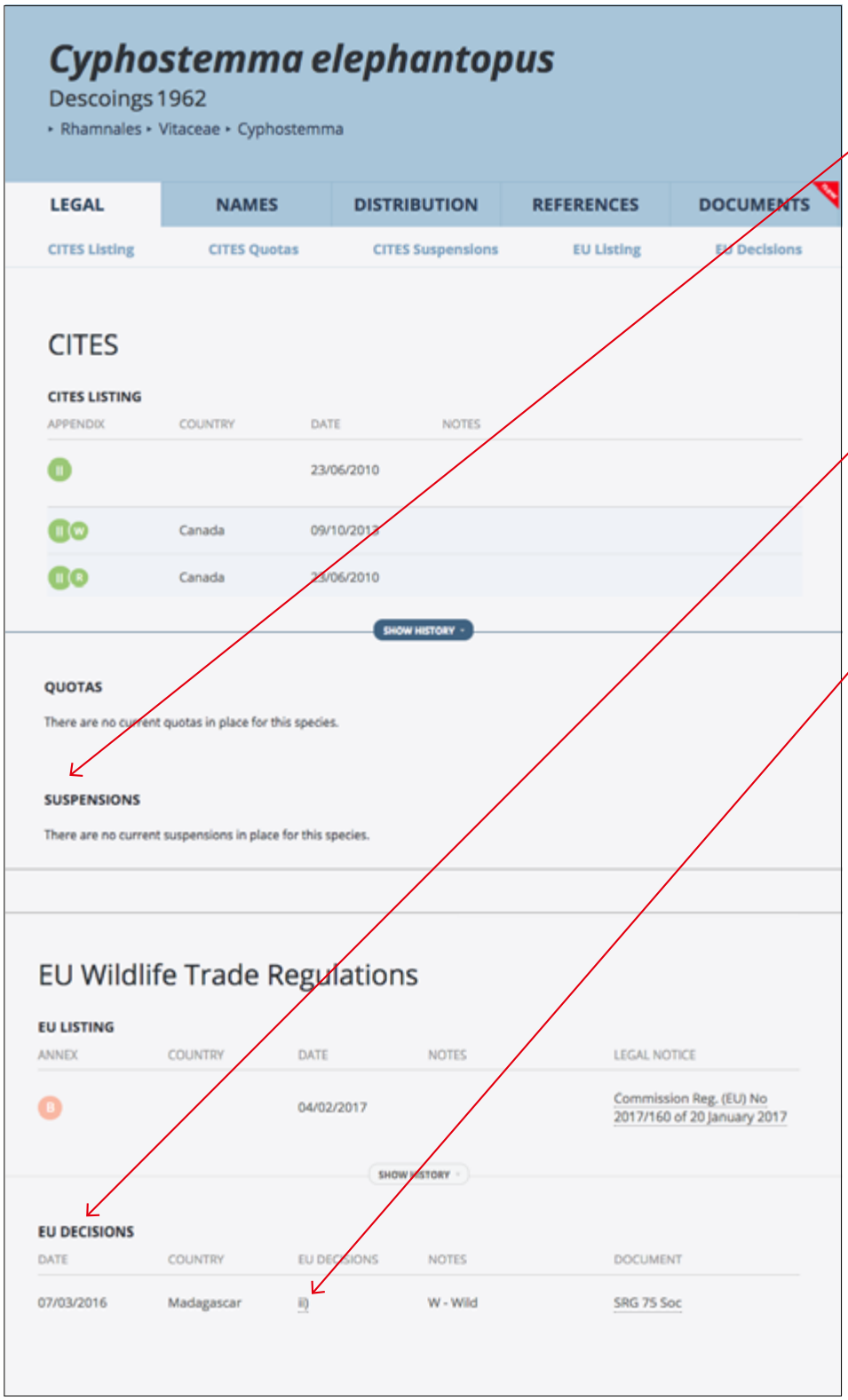
An export permit, or a comparable document that substantially conforms to the CITES requirements, is required if the Party with a reservation exports to a Party that has not taken a reservation on the same species.

Reservations, if any, will be listed under the CITES LISTING section in the LEGAL tab. In this example, the "R" means Canada entered a reservation to the Appendix-II listing of *Cyphostemma elephantopus* from 23/06/2010 until 09/10/2013 when it was withdrawn ("W").

Click on SHOW HISTORY to see previous reservations or click on HIDE HISTORY to hide all but current reservations.

6. *Are there specific CITES international trade suspensions or EU opinions in place for this listing?*

Species + notes any national export suspensions or CITES international suspensions that affect trade. The CITES Parties may take "stricter measures" than the Convention. As such they may impose stricter import or export conditions. The EU member States, through its SRG, issue opinions relating to stricter conditions for importing material into the EU. They are positive (import is allowed subject to permits being issued), negative (no imports until further communication with the country in question) or no opinion. The latter can take three separate forms, including the possibility that all import applications must be referred to the SRG for consideration.



This example uses *Cyphostemma elephantopus*, a succulent grape from Madagascar. Scroll down the LEGAL tab to the SUSPENSIONS heading for details on current CITES and national suspensions.

As shown, there are no current suspensions in place for this species. However, regularly check SPECIES + in case new international or national suspensions have been put in place.

Current EU decisions and opinions are found under the EU DECISIONS heading in the LEGAL tab. Details of what they apply to and the date they came into force are provided.

In this example, click on the opinion under the EU DECISIONS heading to see that currently the EU has put in place a NO OPINION ii) (decision deferred) opinion for all wild material of *Cyphostemma elephantopus*.

This means there is insufficient data on which to issue a confident positive or negative opinion. In this case MAs consult the SA for a `non-detriment finding' before granting an import permit. If an SA issues a positive opinion, this will be shared with other MA/SAs. The SRG may subsequently go on to form a positive or negative opinion. If new information is provided to the SRG this opinion may be overturned at its next meeting. If not, the opinion may remain in place.

There is no SHOW HISTORY button to click on as this species was newly listed at CoP17 (South Africa, 2016).

Species Pages

The following information is provided for each species/genus:

Distribution – covers the countries/territories that the species/genus are native to.*

Uses – the major uses for the taxa and products in trade (regulated or not).

Taxonomy – CITES nomenclature is followed throughout this guide. Where taxonomic revisions of the taxa differ from CITES they are noted.

Identification – the appearance or major characteristics of the species to aid identification

Trade – the dataset used to inform this section has been taken from the CITES Trade Database (https://trade.cites.org) for the years 2006–2016.

Artificial propagation – highlights whether a species/genus is artificially propagated.

CITES international trade suspensions, export quotas and reservations – current CITES international trade suspensions, export quotas and reservations are noted.

EU Decisions – this section outlines those trade suspensions and opinions in place in the European Union. These may be different from CITES.

Scientific names – the accepted names, and where appropriate, the major synonyms (the non-accepted names) that apply to each taxa is provided. Some genera have been subject to taxonomic revision and this is noted where appropriate. If a standard reference has been adopted for a species or genus this reference is given.Where no standard reference is available we recommend a suitable source, but this is merely our recommendation. In such cases you can seek clarification or a definitive decision from the Scientific Services section (http://www.cites.org/eng/disc/sec/staff.php) of the CITES Secretariat who may confer with the Nomenclature Specialist of the CITES Plants Committee to provide you with more formal guidance on the appropriate scientific name.

Details on the CITES listing – the date the species/genus were first listed is provided along with the date of the current listing and annotation. For EU listings the current listing and annotation date applies to the latest version of the Commission Regulation amending the list of species regulated under Council Regulation (EC) No 338/97.

Source codes - indicate source of the specimens (e.g. **D** - Appendix I/Annex A plants and their parts and derivatives artificially propagated for commercial purposes and thus treated as Appendix II/Annex B species; **A** - Appendix I/Annex A plants artificially propagated for non-commercial purposes and Appendix II/III and Annex B/C plants and their parts and derivatives that fulfil the CITES definition of artificially propagated)

Product pictures – pictures have been provided of products seen in international trade. As space is a limiting factor in the guide the coverage is not comprehensive. Products and plants regulated by CITES have a **RED** dot and those not regulated have a **GREEN** dot.

Picture credits /copyright – these are provided on page 98.

* Country abbreviations include Taiwan for Tawain (Province of China); UK (United Kingdom); US (United States of America); EU (European Union); China (People's Republic of China).

Pachypodium lamerei

Adansonia grandidieri

Distribution

Adansonia grandidieri, listed in CITES Appendix II/Annex B to the EU WTR, is one of six endemic *Adansonia*, or baobabs, in Madagascar and occurs in the west and southwest in varying habitats ranging from dense dry deciduous forests to xerophytic bush. Due to habitat loss, mature trees are now largely found in degraded agricultural lands where regeneration is poor.

Identification

Adansonia grandidieri is a large deciduous tree up to 30 m in height with a massive and large-diameter trunk, smooth grey-coloured bark and a flattened crown. The fruit is an ovoid, reddish brown berry, with a white pulp containing 50 to 60 seeds.

Uses

This species is heavily consumed locally. The bark is used both medicinally and in the manufacture of rope, baskets and mats, and the fibrous rings of the spongy wood can be separated and used for thatching roofs. The fruit and seeds are used in juicing and to manufacture powder and oil for use in the cosmetic and food industries.

Trade

Due to the recent listing of this species there is no trade data available from the CITES Trade Database. According to the 2016 IUCN Red List assessment of this species, 4,000 kg (of seeds) were exported from Madagascar to France by Renala Naturals in 2014; however, further investigation reveals that only very small samples were exported. Seeds of this species are widely available online. Baobab powder and oil made from baobab fruit and seeds are also widely available in the pharmaceutical, cosmetic and food industries but it appears that this is manufactured from the seeds of another species of baobab, *Adansonia digitata*, native to and widespread in Africa and southwest Arabia.

The annotation #16 means that only seeds, fruits, oil and live plants are regulated. There is no accepted CITES definition of "oil" so it is unclear whether this refers to 100% pure *A. grandidieri* oil or diluted oil. Parties may interpret this annotation to mean that once the oil is incorporated into another commodity or finished product, for example cosmetics, it is no longer regulated.

Artificial propagation

A nursery in Réunion is offering seeds and seedlings of this and other species of *Adansonia*, suggesting cultivated specimens are available. In Madagascar, a sustainable fruit offtake harvest has been underway on a commercial basis for a few years, aiming to provide livelihood opportunities for local people and encouraging conservation of the species.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for this species.

EU Decisions

There are a no EU Decisions for this species. See Species + for details.

● *Adansonia grandidieri* fruit ● *Adansonia grandidieri* trees

Adansonia and sisal

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Adansonia grandidieri Baillon	**Appendix II** 02/01/2017 **Annex B** 04/02/2017	**Appendix II** 02/01/2017 **Annex B** 04/02/2017 **Annotation** #16: seeds, fruits, oil and live plants.
Family: Malvaceae		
CITES Standard Reference: There is no standard reference for this species. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

- *Adansonia grandidieri* seeds

- *Adansonia grandidieri* oil

Adenia

Distribution

The genus *Adenia* consists of about 100 species, widespread in the Old World tropics and subtropics with three species in China. There are around 18 species endemic to Madagascar, three of which are listed in CITES Appendix II/Annex B to the EU WTR: *Adenia firingalavensis*, *A. olaboensis* and *A. subsessilifolia*. Two further species are listed on Annex D to the EU WTR: *A. glauca* (South Africa and Botswana) and *A. pechuelii* (Namibia). *Adenia firingalavensis* is found in the west, southwest and south growing on sandy soil, stony calcareous soil or rocky outcrops in deciduous forests and thickets. *Adenia olaboensis* is widely distributed in central and western Madagascar, growing on a wide range of substrates, including both calcareous soils and sandstones, in dry forests, scrub and secondary forest, and grassy savannah. *Adenia subsessilifolia* is restricted to xerophytic scrubland on sand or stony calcareous soil in the south in shrub savannah and forest edges.

Appearance

Adenia firingalavensis is a large succulent liana with a swollen stem and a conical to subspherical trunk up to 2 m tall and 50 cm in diameter. The outer bark is blue-green, warty and mostly covered with a thick greenish layer of resin. It is a very variable species, and its appearance varies across its range, from small succulent plants to elongated forms. It appears that the some of the distinct forms from the south are likely to be more threatened than the eastern elongate forms. *Adenia olaboensis* is a large, trunk-forming vine with a trailing main stem, which may reach a length of around four metres and diameter of 40 cm, from which grow secondary trunks and lianas that may reach lengths of several metres. *Adenia subsessilifolia* is a climbing succulent liana with a caudiciform stem and roots. It has many thin herbaceous stems and short, thick rhizomes and its roots are swollen around one or several fleshy tubers. *Adenia glauca* is a tall deciduous woody climber with a dark green caudex, which can be up to 60 cm in diameter, and grey vines. *Adenia pechuelii* has a large caudex up to 1 m, grey green, non-vining, succulent, spineless branches and is very slow growing.

Adenia taxa can be very variable, and can be difficult to distinguish, particularly so when plants are shipped as pruned individuals, without leaves or other growth.

Uses

All three species on Appendix II/Annex B are used medicinally in Madagascar, and all five species are sought-after ornamental plants by specialist succulent collectors on the international market.

Trade

According to the CITES Trade Database there is a very small trade from Madagascar in both wild and artificially propagated live plants of *A. firingalavensis*. Trade in wild and artificially propagated live plants of *A. olaboensis* is also very small and is from Madagascar, Ghana, the Philippines and the Czech Republic. In recent years trade in artificially propagated specimens has increased suggesting nurseries are beginning to supply more plants. There is a very small trade in live specimens of *Adenia glauca*, both wild-collected and artificially propagated, from the US and South Africa. There are no CITES trade

● *Adenia olaboensis*

● *Adenia firingalavensis*

● *Adenia firingalavensis*

records for *A. subsessilifolia* or *A. pechuelii* but seeds and live plants of all five species are available to buy online. Analyses of proposals for CoP16 noted that there were other exceptionally rare or locally endemic Malagasy *Adenia* species (*A. epigea, A. litoralis, A. stylosa, A. boivinii, A. lapiazicola* and *A. metamorpha*) resembling *A. firingalavensis* and *A. olaboensis* that might be imported as *Adenia* spp. or *Adenia firingalavensis*.

Artificial propagation

There are no large-scale nurseries growing these species, but a nursery in Madagascar appears to be supplying a small amount of plants. The species are thought to be slow growing but relatively easy to grow. Rooted stem cuttings appear to be not as desirable to the succulent collector as seedlings and field collected plants, the latter being difficult to extract from the limestone on which they sometimes grow. Plants grown from cuttings do not produce the swollen basal trunk sought-after by collectors.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for any of these species. See Species + for details.

EU Decisions

There are no EU Decisions for these species.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Adenia firingalavensis (Drake ex Jum.) Harms. (syn: *Ophiocaulon firingalavense* Drake ex Jum.)	**Appendix II** 12/06/2013 **Annex B** 10/08/2013	**Appendix II** 12/06/2013 **Annex B** 04/02/2017
Adenia olaboensis Claverie	**Appendix II** 23/06/2010 **Annex B** 15/08/2010	**Appendix II** 23/06/2010 **Annex B** 04/02/2017
Adenia subsessilifolia Perrier	**Appendix II** 12/06/2013 **Annex B** 10/08/2013	**Appendix II** 12/06/2013 **Annex B** 04/02/2017
Adenia glauca Schinz (syn: *Modecca glauca* Schinz) *Adenia pechuelii* (Engl.) Harms. (syn: *Echinothamnus pechuelii* Engl.)	**Annex D** 01/06/1997 **Annex D** 01/06/1997	**Annotation** There is no annotation, therefore all parts and derivatives, live or dead, are regulated.
Family: Passifloraceae		

CITES Standard Reference:
There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998).See Species + for further information.

● *Adenia pechuelii*

● *Adenia glauca*

Agave

Distribution

The genus *Agave* consists of over 250 species, two of which are listed under CITES: *Agave parviflora*, endemic to Mexico and the US (Arizona), is listed in CITES Appendix I and Annex A to the EU WTR and *Agave victoriae-reginae*, found in a few but widely distributed locations in north-eastern Mexico, is listed in Appendix II/Annex B.

Identification

Agave parviflora is a small rosette-forming (15–25 cm in diameter and 10–15 cm high), evergreen, succulent perennial with numerous, dark green leaves which have a waxy coating and white markings. The leaves have a 5 mm long terminal spine and there are numerous distinctive white filaments or threads found along their margins. The flower stalk is up to 1.8 m tall with pale yellow flowers. *Agave victoriae-reginae* is a small (up to 0.5 m), evergreen succulent perennial with distinctive white markings along its 10–15 cm long green, thick leaves where the keels of adjacent leaves contacted the upper leaf surface during its development. The leaves form a compact, spiral rosette. One to three spines, each 1.5–3 cm in length, may be found at the end of each leaf and the flowers are varicoloured, often tinged with red, borne in erect stalks up to 4 m in length. Plants may take over 20 years to flower, after which the plant will die.

Uses

Agave parviflora is grown as an ornamental plant. Wild specimens of this species are sought-after by collectors. Due to this and its limited distribution in southern Arizona and northern Sonora, Mexico, it is protected under both US and Mexican legislation. *Agave victoriae-reginae* is also popular as an ornamental plant, and used in native and drought-tolerant landscaping. However, this species is not suitable for landscaping in temperate regions, despite it being among the most cold-hardy of *Agave* species, as it cannot withstand wet conditions.

Trade

The CITES Trade Database indicates that *A. parviflora* is in trade as seeds and live plants, the majority from source code D. There are discrepancies between the trade volumes as reported by exporters versus importers and the trade in live plants is much smaller than that of seed. The major exporters of live plants (source code D) are Thailand and Germany. The major exporter of live plants (source code A) is the Netherlands followed by Germany and Mexico. The major exporter of seed is the US to China, Japan, Canada, the Netherlands, Taiwan and the Czech Republic.

Trade in *Agave victoriae-reginae* is in artificially propagated live plants and is low in volume. The major exporters are Italy, Spain, Thailand and the Netherlands, imported by Switzerland, Morocco, Lebanon, Italy and the US.

The #4 annotation means that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers of artificially propagated plants and tissue cultured plants still in their sterile flasks or containers.

Artificial propagation

Both species are grown from seed or offsets. Both

● *Agave parviflora*

● Agave nectar

● *Agave victoriae-reginae*

seeds and live plants are available online from nurseries and suppliers outside their natural range, and different cultivated varieties and variegated forms of *A. victoriae-reginae* are also found in trade. *Agave parviflora* is semi-hardy being tolerant of low temperatures but is not suitable for growing in the northern hemisphere as it cannot withstand frost or wet conditions.

The CITES list of registered nurseries that propagate Appendix I/Annex A listed *Agave* species can be found at http://tinyurl.com/yajq4m3j

CITES international trade suspensions, export quotas and reservations

There are currently no CITES trade suspensions, export quotas or reservations in place for these species. See Species + for details.

EU Decisions

There are currently no EU Decisions in place for these species. See Species + for details.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Agave parviflora Torr. *Agave victoriae-reginae* T.Moore	**Appendix I** 29/07/1983 **Annex A** 01/06/1997 **Appendix II** 29/07/1983 **Annex B** 101/06/1997	**Appendix I** 29/07/1983 **Annex A** 04/02/2017 **Appendix II** 02/01/2017 **Annex B** 04/02/2017 **Annotation** #4 All parts and derivatives, except: a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade
Family: Agavaceae		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information		

● *Agave victoriae-reginae*

● *Agave victoriae-reginae*

Aloe

Distribution

The genus *Aloe* comprises more than 500 species native to a variety of habitats (beaches, deserts, grasslands and mountains) in sub-Saharan Africa, the Arabian Peninsula, Madagascar and a number of islands off the east coast of Africa. Many species have become naturalised in the wild outside their natural range and some are considered invasive species. All species of *Aloe*, except *A. vera*, are listed in CITES Appendix II or Annex B of the EU WTR with 21 species listed in Appendix I/Annex A.

Identification

The species can range from small succulent plants to tall tree *Aloe*. In general, species of *Aloe* can be single stemmed or branched. The flowers range from yellow to red in colour and are usually arranged in tightly-packed racemes that may be unbranched, or in candelabra-like branched inflorescences. The leaves in most species (with few exceptions) have sharp teeth along the margins and in some species there are prickles and/or pale spots on one or both surfaces. The leaf tip does not have the pronounced terminal spine seen in *Agave* species. The leaves form a rosette at the end of the stem, with the older leaves sometimes forming a 'skirt' of dead leaves. The soft leaves easily snap in two, revealing a colourless gel-like substance. Upon oxidation this can remain clear or, with some species, it turns a yellowy-brown/golden orange colour. Some species may be mistaken by the non-expert for *Agave* species or other CITES or non-CITES regulated succulent species (see IDENTIFICATION).

Taxonomy

The current CITES-adopted taxonomy for the genus *Aloe* is outlined in the listing table below and Species +. However, recent taxonomic revisions propose a number of changes to this genus: adjust the family used for *Aloe* to Asphodelaceae; and include *Aloidendron* spp., *Aloiampelos* spp., *Kumara plicatilis* and four species of *Aloe* previously treated under the name *Chortolirion* (see http://tinyurl.com/y82pnjyp for details) in *Aloe* spp.

Uses

Aloe species and hybrids are used for many purposes. They are popular as ornamental houseplants and used in drought-tolerant landscaping. One of the major products in trade is the gel from the leaves of a number of species, in particular *A. vera* and *A. ferox*. This substance has multi-use applications from cosmetics (creams, gels), healthcare supplements (juices, pills), food and flavouring to medicinal products, the latter utilizing the antioxidant and antibacterial properties to treat skin conditions or digestive ailments. The global market for *A. vera* products is estimated to have reached $US 13 billion and the growing demand for *Aloe* species in cosmetic and health products may result in the trade volumes of *Aloe* species, other than *A. vera* and *A. ferox*, increasing or regulated species being mis-declared as the unregulated *A. vera*. The bitter, yellow-brown sap from *Aloe* species is also traded internationally. This sap, termed exudate, is known as "drug *Aloes*" or "bitter *Aloes*" and may be named after the source species or the origin of that species. For example, the name "Cape *Aloe*" refers to the exudate of the South African species *A. ferox*.

Aloe flower

● *Aloe* sp. (not *Aloe vera*)

● *Aloe* ferox

Trade

The international trade in wild-sourced Appendix I/Annex A *Aloe* species for commercial purposes is effectively prohibited. Commercial trade in artificially propagated specimens of these species is permitted (see the CITES NURSERY REGISTRATION SCHEME chapter).

According to the CITES Trade Database, the most heavily traded live Appendix I species are Madagascan species *A. haworthioides*, *A. laeta* and *A. bakeri*, the majority from South Africa and Denmark with source code D. Trade in artificially propagated Appendix II species is in *Aloe* spp. exported from the US, China and the Dominican Republic, imported by Japan and Canada. *Aloe* spp. and *Aloe ferox* are the species most in demand from the wild, exported mainly by South Africa and Madagascar and imported by the Netherlands and Germany. The trade in parts and derivatives is dominated by exports of wild-collected *A. ferox*, origin South Africa, with 5.6 million kg exported in the last 10 years. *Aloe arborescens*, wild-collected from South Africa and artificially propagated in Japan, is the other major species in trade as derivatives. Many species are available as live plants, seeds or included as ingredients in finished products.

The annotated text against the *Aloe* Appendix II/Annex B listing indicates that all species of *Aloe* are regulated except *A. vera*, also known under the name *A. barbadensis*. The #4 annotation means that for all *Aloe* species, except *A. vera*, all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers of artificially propagated plants and tissue cultured plants still in their sterile flasks or containers. For the 21 *Aloe* species listed under Appendix I/Annex A, all parts and derivatives, live or dead, are regulated. Live plants and unfinished (e.g. raw gel or sap) or finished products (e.g. face creams, health drinks) made from *A. vera* (*A. barbadensis*) are not regulated under CITES. However, if these products contain any other *Aloe* species they are regulated (see listing table below). Always check Species + or with a botanical expert as to which species the products contain.

Artificial propagation

Aloe species are cultivated in large numbers both in range and non-range States. *Aloe* species are readily propagated from offsets attached to the mother plant, cuttings or by seed. *Aloe* species are found in botanic garden collections or as landscaping or naturalised plantings in public spaces (gardens, hotels) in tropical and sub-tropical climates. *Aloe vera* and a few other species (e.g. *Aloe arborescens*, *Aloe ferox*) are cultivated on an agricultural scale in field plantations, but live plants and the leaves of other species, including *A. ferox*, are mostly harvested from the wild. The CITES list of registered nurseries that propagate Appendix I/Annex A listed *Aloe* species can be found at http://tinyurl.com/yajq4m3j

CITES international trade suspensions, export quotas and reservations

There are currently no CITES trade suspensions or reservations for *Aloe* species. There are current export quotas in place for certain *Aloe* species. See Species + for details.

EU Decisions

There are EU Decisions in place for a number of *Aloe* species. See Species + for details.

Aloe teeth along leaf margin

● *Aloe striata* with *Aloe africana*

● Washing *Aloe vera* leaves

Aloe

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
A albida, A. pillansii, A. polyphylla and *A. vossii*	**Appendix I** 01/07/1975 **Annex A** 01/06/1997	**Appendix I** 01/07/1975 **Annex A** 04/02/2017
A. albiflora, A. alfredii, A. bakeri, A. bellatula, A. calcairophila, A. compressa (includes the vars. *paucituberculata, rugosquamosa* and *schistophila*), *A. delphinensis, A. descoingsii, A. fragilis, A. haworthioides* (includes the var. *aurantiaca), A. helenae, A. laeta* (includes the var. *maniaensis), A. parallelifolia, A. parvula, A. rauhii* and *A. suzannae*	**Appendix I** 16/02/1995 **Annex A** 01/06/1997	**Appendix I** 16/02/1995 **Annex A** 04/02/2017
Aloe spp. (except *A.vera*)	**Appendix II** 01/07/1975 **Annex B** 01/06/1997	**Appendix II** 02/01/2017 **Annex B** 04/02/2017
Family: Liliaceae (Asphodelaceae)		**Annotation** Text: Except the species included in Appendix I. Also excludes *Aloe vera*, also referenced as *Aloe barbadensis* which is not included in the Appendices #4 All parts and derivatives, except: a) seeds (including seedpods of *Orchidaceae*), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade
CITES Standard Reference: The CoP has adopted a standard reference for this genus, *The Aloe and Pachypodium Checklist* Eggli *et al.* (2001). https://tinyurl.com/y7etp6ge. See Species + for further information.		

● *Aloe vera* ● Powder (*Aloe ferox*) ● Face cream (*Aloe ferox*) ● Supplements (Cape Aloe)

Aloe sp

Anacampseros

Distribution

All species in this genus are listed in CITES Appendix II/ Annex B to EU WTR, distributed throughout southern Africa.

Appearance

All species are small, perennial, succulent herbs which form basal rosettes of smooth or hairy leaves in dense mats and develop a small caudex with age, with white filamentous hairs present along the stems. The flowers vary from white to purple.

Taxonomy

Previously in the family Portulacaceae, following molecular phylogenetic analysis the genus has now been placed in Anacampserotaceae. All species of *Avonia*, also listed in CITES Appendix II/Annex A, are now included in *Anacampseros*.

Uses

Mainly traded as ornamental succulents, some species appear to have a local, medicinal use.

Trade

According to the CITES Trade Database trade in these species is in live, artificially propagated specimens with the vast majority exported by the Republic of Korea and imported by France. The majority of trade is recorded as *Anacampseros rufescens* (Republic of Korea exported to France) and *Anacampseros* spp. (Canada exported to the US) and trade has decreased since 2012.

The #4 annotation means that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers from artificially propagated plants and tissue cultured plants still in their sterile flasks or containers.

Artificial propagation

From the CITES Trade Database it appears that this genus is in widespread cultivation in the Republic of Korea, the US and South Africa. Seeds and small plants are also available from nurseries in Spain, the US, Canada, the UK and Germany.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for any of these species. See Species + for details.

EU Decisions

There are a no EU Decisions for these species. See Species + for details.

● *Anacampseros telephiastrum*

● *Anacampseros albidiflora*

Anacampseros albidiflora

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Anacampseros L.	**Appendix II** 01/07/1975 **Annex B** 01/06/1997	**Appendix II** 02/01/2017 **Annex B** 04/02/2017 **Annotation** #4 All parts and derivatives are regulated, except: a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade
Family: Portulacaeae (Anacampserotaceae)		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). However, the taxonomy of this family is complex and there may be numerous synonyms (older names used instead of the current accepted Latin/scientific name) to note. It is important to check with a botanical or taxonomic specialist for up to date and accurate taxonomy. See Species + for further information.		

Anacampseros rufescens

Anacampseros sp.

Avonia

Distribution

There are around 14 species in this genus, all of which are listed in CITES Appendix II/Annex B of the EU WTR, distributed throughout South Africa, Botswana and Namibia.

Appearance

Avonia species are dwarf plants in which the stems, semi-erect or prostrate, are covered by white, overlapping papery stipules, like fish scales, that reduce transpiration and trap dew. Many mimic their surroundings, for example *A. papyracea* is pure white and grows in white quartz patches. Many species have fragrant flowers.

Avonia species are very similar to species of *Anacampseros*. *Avonia* have flowers with very short stems, which are long on *Anacampseros*, and have tiny leaves covered by scales; the leaves of *Anacampseros* are larger, obvious and not covered by scales.

Taxonomy

While *Avonia* is a distinct and easily recognizable group, molecular work has shown these species to be embedded in *Anacampseros*, which has been moved from Portulacaceae to Anacampserotaceae. However, the name *Avonia* is still frequently used in the trade and amongst hobby collectors.

Uses

Avonia species are popular dwarf miniatures for the specialist succulent plant collector.

Trade

According to the CITES Trade Database trade is in artificially propagated live plants, the majority from South Africa to Germany, and the main species are *A. quinaria*, and *A. papyracea*.

The #4 annotation means that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers from artificially propagated plants and tissue cultured plants still in their sterile flasks or containers.

Artificial propagation

There appear to be nurseries in Europe (Czech Republic, the Netherlands) and South Africa selling small numbers of plants of this genus. The plants are relatively easy to cultivate but are slow growing.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for any of these species. See Species + for details.

EU Decisions

There are a no EU Decisions for these species. See Species + for details.

● *Avonia papyracea*

● *Avonia quinaria* subsp. *alstonii*

Avonia ustulata

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Avonia spp. *(Anacampseros)*	**Appendix II** 01/07/1975 **Annex B** 01/06/1997	**Appendix II** 02/01/2017 **Annex B** 04/02/2017 **Annotation** #4: All parts and derivatives, except: a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade
Family: Portulacaeae (Anacampserotaceae)		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). However, the taxonomy of this family is complex and there may be numerous synonyms (older names used instead of the current accepted Latin/scientific name) to note. It is important to check with a botanical or taxonomic specialist for up to date and accurate taxonomy. See Species + for further information.		

Avonia quinaria subsp. *alstonii*

Avonia seedlings

Beaucarnea

Distribution

There are around 11 species of *Beaucarnea*, all of which are listed under CITES Appendix II/Annex B to the EU WTR. Most species are endemic to Mexico, but some also extend to Belize, El Salvador, Guatemala, Honduras, and Nicaragua. *Beaucarnea recurvata* is the most heavily traded and is endemic to Mexico, found in low deciduous forests in rocky and mountainous areas. All other species are listed under CITES due to look-a-like reasons.

Appearance

Beaucarnea recurvata or pony tail palm is a tree-like pachycaul succulent up to 15 m with a bulbous stem that can grow up to 3 m in diameter. The bark of older plants is rough, woody and fissured and the leaves are long, thin and recurved. *Beaucarnea inermis* is the most similar species to *B. recurvata*, but it can be distinguished by means of leaf margin analysis. Seeds and seedlings of the species are undistinguishable by non-specialists, but wild specimens of *B. recurvata* can be distinguished from artificially propagated specimens as the latter have a perfectly-formed, round base and the roots have a typical cylindrical shape.

Beaucarnea species are closely related to *Nolina* and *Dasylirion* species.

Taxonomy

According to recent taxonomic revisions, *Calibanus hookeri* (previously listed on Annex D to the EU WTR), is now considered a synonym for *Beaucarnea hookeri*.

Note: certain *Nolina* names in use are considered synonyms of *Beaucarnea* species.

Uses

Some species in this genus, particularly *B. recurvata*, are highly sought-after both nationally and internationally for use as ornamentals in the landscaping and horticultural trade.

Trade

Due to the recent listing of this genus there is no trade data available from the CITES Trade Database. However, according to the listing proposal tabled at CoP17, *Beaucarnea inermis*, *B. recurvata*, *B. goldmanii*, *B. pliabilis* (syn. *B. ameliae*, and *B. petenensis*), *B. hiriartiae*, *B. guatemalensis* are in frequent trade; *B. gracilis*, *B. stricta*, *B. sanctomariana* (mainly seeds) are traded less frequently, and there is no recorded trade in *B. purpusii* and *B. compacta*. *Beaucarnea recurvata* is still sometimes traded under the synonym *Nolina recurvata*.

Artificial propagation

There are many commercial Mexican nurseries supplying specimen plants and seeds of *Beacarnea recurvata* but according to the listing proposal at CoP17 they cannot provide enough plants, both juvenile and adult, to supply the market and many specimens are still being wild-collected. It is widely propagated in European, US and Chinese nurseries for the ornamental plant market.

● *Beaucarnea* sp.

● *Beaucarnea* sp.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, or quotas in place for these species. There is a current reservation for these species. See Species + for details.

EU Decisions

There are no EU Decisions for these species. See Species + for details.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Beaucarnea Lem. **Family:** Asparagaceae **CITES Standard Reference:** There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). However, the taxonomy of this family is complex and there may be numerous synonyms (older names used instead of the current accepted Latin/scientific name) to note. It is important to check with a botanical or taxonomic specialist for up to date and accurate taxonomy. See Species + for further information.	**Appendix II** 02/01/2017 **Annex B** 04/02/2017	**Appendix II** 02/01/2017 **Annex B** 04/02/2017 **Annotation** There is no annotation, therefore all parts and derivatives, live or dead, are regulated.

● *Beaucarnea* sp.

● *Beaucarnea recurvata*

● *Beaucarnea* sp.

Calibanus hookeri

Distribution

This is one of three species in the genus *Calibanus* and is native to the dry mountainous areas of the Mexican states of Hidalgo, Tamaulipas and San Luis Potosi. It is not currently listed in the CITES Appendices but is listed in Annex D to the EU WTR.

Identification

This species resembles a trunkless *Nolina* species and forms a large caudex covered with corky bark reaching diameters and heights of over 0.7 m. The extremely narrow, greyish-green leaves that look like grass sprout in clumps from the top of the caudex reaching 40 cm long. Branching flower stalks grow to 60 cm tall producing tiny greenish-white flowers.

Taxonomy

The species name *Calibanus hookeri* is listed in Annex D. However, according to certain taxonomic revisions, this name is now considered a synonym of the accepted name *Beaucarnea hookeri*. All *Beaucarnea* (family: Asparagaceae) species are listed in Appendix II/Annex B.

Uses

This species is somewhat tolerant of low temperatures but is usually grown as a container or specimen plant in drought-tolerant landscaping in warmer climates.

Trade

The CITES Trade Database has only two trade records for this species under the name *Calibanus hookeri* – one in 2008 (50 wild sourced live plants from the US to Germany) and the other in 2016 (60 live plants, source unknown from the US to Germany). Trade studies in 2017 indicate that this species is to be delisted from Annex D due to no trade being recorded. Continue to check Species + until this species has been delisted.

Artificial propagation

This species is available online as live plants named as both *Calibanus hookeri* and *Beaucarnea hookeri*. It is recommended as an ornamental plant. It is propagated using seeds as cuttings cannot be taken.

CITES international trade suspensions, export quotas and reservations

There are currently no CITES trade suspensions or export quotas in place for *Calibanus hookeri*. There is a reservation in place for *Beaucarnea* species. See Species + for details.

EU Decisions

There are currently no EU Decisions in place for this species. See Species + for details.

Calibanus hookeri

Calibanus hookeri bark

Calibanus hookeri

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Calibanus hookeri (Lem.) Trel. (synonym of accepted name: *Beaucarnea hookeri* (Lem.) Baker)	**Annex D** 01/06/1997	**Annex D** 04/02/2017 **Annotation** Listed in Annex D with no annotation. Therefore, only live specimens are regulated
Family: Agavaceae (Asparagaceae)		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● *Calibanus hookeri*

● *Calibanus hookeri*

Ceraria

Distribution

There are approximately nine species in the genus *Ceraria*, two of which are regulated under the EU WTR: *C. carrissoana* and *C. fruticulosa*. *Ceraria carrissoana* is native to the steep rocky hill straddling the border between Namibia and Angola and *C. fruticulosa* which is native to the steep rocky outcrops of southern and southwestern Namibia and into South Africa. Neither species are currently listed in the CITES Appendices but they are listed in Annex D to the EU WTR. Since 1997, the genus *Ceraria* was listed in Annex D, but in 2005 all species except *C. carrissoana* and *C. fruticulosa* were removed from regulation.

Identification

Ceraria carrissoana is a shrub or small succulent tree (2–3 m tall) with a characteristic waxy reddish-brown coating to the stem. Leaves are ovate and succulent (10–20 mm long). *Ceraria fruticulosa* is a shrub usually around 1 m tall but sometimes taller. The slender young branches are flushed purple-red with a waxy appearance. The thick, succulent olive-green to blue-green leaves are spirally arranged or clustered on dwarf shoots and this species has miniature pink flowers.

Taxonomy

These species are listed in Annex D under the genus name *Ceraria*. However, according to certain taxonomic revisions, *C. carrissoana* is now considered a synonym of the accepted name *Portulacaria carrissoana* and *C. fruticulosa* a synonym of the accepted name *Portulacaria fruticulosa*, which are now considered to be in the Didiereaceae family.

Uses

Both species are grown as specialist ornamental plants or collectible succulents.

Trade

The CITES Trade Database does not record any trade for these species. No seed or live plants were found in trade apart from live plants of *C. fruticulosa* for sale online from a wholesale company based in the US. Trade studies in 2017 indicate that both species are to be delisted from Annex D due to no trade being recorded. Continue to check Species + until this species has been delisted.

Artificial propagation

Both species can be propagated by cuttings.

CITES international trade suspensions, export quotas and reservations

These species are currently not regulated under CITES. Therefore, there are currently no CITES trade suspensions, export quotas or reservations in place. See Species + for details.

EU Decisions

There are currently no EU Decisions in place for these species. See Species + for details.

● *Ceraria fruticulosa* live plant

● *Ceraria fruticulosa*

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Ceraria carrissoana Exell and Mendonça (synonym of the accepted name: *Portulacaria carrissoana* (Exell & Mendonça) Bruyns & Klak) *Ceraria fruticulosa* Pearson & E.L. Stephens (synonym of the accepted name: *Portulacaria fruticulosa* (H.Pearson & Stephens) Bruyns & Klak)	**Annex D** 01/06/1997	**Annex D** 04/02/2017 **Annotation** Listed in Annex D with no annotation. Therefore, only live specimens are regulated
Family: Portulacaceae (Didiereaceae)		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● *Ceraria namaquensis*

● *Cereria pygmaea*

Cyphostemma

Distribution

The genus *Cyphostemma* consists of around 250 species widely distributed in the tropics. Roughly 23 species occur in Madagascar, three of which are listed in CITES Appendix II/Annex B to the EU WTR: *Cyphostemma elephantopus*, *C. laza* and *C. montagnacii*. *Cyphostemma elephantopus* is found in dry, degraded forests and xerophytic scrubland; *Cyphostemma laza* is found in partially shaded areas in semideciduous dry forest and *C. montagnacii* grows in low xerophytic thicket on limestone and in scrubland.

Identification

Cyphostemma elephantopus is a perennial plant with a swollen trunk up to one metre in height and 20 cm in diameter at the base, with vine-like branches up to 2 m in length. Underground there is a large flattened tuber that may reach 1.3 m in diameter. *Cyphostemma laza* is a liana with a single, slender, bottle-shaped trunk up to 50 cm in diameter and 1.2 m in height, from which extend vines up to around 5 m in length. The bark is covered with leaf scar rings. *Cyphostemma montagnacii* forms a thickened tuber-like stem or caudex with distinctive tubercular bark with vine-like stems up to 1.5 m in length.

Cyphostemma montagnacii closely resembles C. *elephantopus*. These two species both have succulent leaves, a deep underground tuber and a very short vegetative cycle.

Uses

There does not appear to be any other use for these species, national or international, other than ornamental.

Trade

According to the CITES Trade Database, there is a small amount of trade in all three species, all in live plants from Madagascar and the majority wild-collected, with a small amount artificially propagated. Germany imports the majority, with small amounts going to the US, Japan, Hong Kong, Spain and the Czech Republic. Seeds and live plants are available to buy online, with large specimens commanding very high prices.

Artificial propagation

Propagation of all three species is by seed; it is possible but difficult to propagate by cuttings. There is no known large scale cultivation of any of these species but specialist nurseries are supplying seeds, seedlings and specimen plants on a very small scale.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for any of these species. See Species + for details.

EU Decisions

There are a number of EU Decisions for these species. See Species + for details.

● *Cyphostemma elephantopus* ● *Cyphostemma montagnacii* ● *Cyphostemma laza*

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Cyphostemma elephantopus Desc.	**Appendix II** 23/06/2010 **Annex B** 15/08/2010	**Appendix II** 23/06/2010 **Annex B** 04/02/2017
Cyphostemma laza Desc.	**Appendix II** 12/06/2013 **Annex B** 10/08/2013	**Appendix II** 12/06/2013 **Annex B** 04/02/2017
Cyphostemma montagnacii Desc.	**Appendix II** 23/06/2010 **Annex B** 15/08/2010	**Appendix II** 23/06/2010 **Annex B** 04/02/2017
Family: Vitaceae		**Annotation** There is no annotation, therefore all parts and derivatives, live or dead, are regulated.
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● *Cyphostemma laza*

● *Cyphostemma juttae*

● *Cyphostemma laza*

Dasylirion longissimum

Distribution

This is one of 23 species in the genus *Dasylirion* and it is native to desert areas of northeastern Mexico. It is currently not listed in the CITES Appendices but is the only species of *Dasylirion* listed in Annex D to the EU WTR.

Identification

Slow growing, evergreen perennial plant that has toothless, thin, dull green, four-sided grass-like leaves that grow up to 1.8 m long. They grow from the top of the trunk eventually producing a spherical head. As the plant matures the trunk becomes taller (up to 5 m), thicker and more scarred. The tall flower spikes (up to an additional 5 m) are solitary and covered with white flowers that open from striking red buds. This plant tolerates coastal habitats and is resistant to drought and extreme weather conditions. Identification between *Dasylirion* species may be difficult for the non-expert.

Taxonomy

Although listed in Annex D under the family Agavaceae, taxonomic revisions have placed this species in the family Ruscaceae or Asparagaceae.

Uses

Traditionally, *Dasylirion* species were eaten (the caudex was cooked) and drunk (an alcoholic beverage called Sotol was made from the roots). It was an important plant to the native peoples of the southwest US and Mexico. Now it is a rare, but widely sought-after plant prized for its ornamental value and use as a drought-tolerant plant in landscaping.

Trade

The CITES Trade Database indicates moderate trade of live plants (source Unknown or not given) between 2008-2015. Mexico is the only reported exporter and the largest importer is Spain followed by Italy. Trade studies in 2017 indicate that this species should be retained in Annex D due to moderate direct/indirect trade into the EU (2011-2015) of live (source Unknown) plants.

Artificial propagation

Wild-collected plants of *Dasylirion* from Mexico have been noted in trade in the past. As this species can take many years to develop a sizeable trunk, larger specimens fetch higher prices than smaller seedlings. Plants are imported into Europe as bare rooted plants then potted up. This species is slow growing with the rooting process taking up to two years before plants can be shipped on to buyers worldwide.

CITES international trade suspensions, export quotas and reservations

This species is currently not regulated under CITES. There are no CITES trade suspensions, export quotas or reservations in place. See Species + for details.

EU Decisions

There are currently no EU Decisions in place for this species. See Species + for details.

Dasylirion longissimum in a nursery

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Dasylirion longissimum Lem.	**Annex D** 01/06/1997	**Annex D** 04/02/2017 **Annotation** Listed in Annex D with no annotation. Therefore, only live specimens are regulated.
Family: Agavaceae (Asparagaceae)		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● *Dasylirion longissimum*

Didiereaceae

Distribution

The family Didiereaceae was previously considered to comprise 11 species from four genera: *Alluaudia, Alluaudiopsis, Decarya*, and *Didierea,* all endemic to the spiny thickets of the dry south west of Madagascar. All species in Didiereaceae are listed in CITES Appendix II/ Annex B to the EU WTR.

Identification

All species are xerophytic shrubs and trees and not true succulent plants. All have adapted to the dry climate by forming spines and dropping leaves in the dry season. The six species in the genus *Alluaudia* are tree sized, heavily spined, little branched deciduous plants. The two species in *Alluaudiopsis* are strongly branched, heavily spined shrubs and trees; the difference between *Alluaudia* and *Alluaudiopsis* is that the spines arise below the brachyblasts in *Alluaudiopsis* whereas in *Alluaudia* the spines are either side of the brachyblast. The two species in the genus *Didierea* are densely spined succulents growing up to 10 m; *D. madagariensis* in particular is similar to columnar cacti. *Decarya madagascariensis*, the only species in the genus, is a deciduous spiny shrub or small tree 6–9 m high with zigzag branches.

Taxonomy

Following taxonomic revisions, seven species of *Portulacaria* (found in southern Africa) and two species of *Calyptrotheca* (from tropical East Africa) are also now included in Didiereaceae.

Uses

All species are in demand as ornamentals by specialist succulent collectors. *Alluaudia* species are a valuable source of wood and are used locally for boxes and crates for tobacco and vanilla, furniture and interior trim as well as for firewood and charcoal production.

Trade

According to the CITES Trade Database trade in all species is very small. All wild trade in *Alluaudia* is for scientific purposes, from Madagascar. Artificially propagated trade in *Alluaudia* is from Madagascar and European nurseries in Spain, Germany, Italy and the Czech Republic. There have only been four records of trade in *Alluaudiopsis* since 2006, three of which were for scientific purposes and one in 2016 of 2 artificially propagated plants from the Czech Republic to Japan. There are only six records of trade for *Decarya madagascariensis*; two records of wild-collected leaves and specimens for scientific purposes from Madagascar and four records of artificially propagated live plants from the UK, Japan and Thailand. There has been a small amount of trade in wild-collected *Didierea* with live plants exported by Madagascar to Japan and France. Artificially propagated live plants are more recently being exported by the Czech Republic, Spain and the Netherlands but the trade is small. Seeds and small live plants of some species are available online.

The #4 annotation against the Appendix II/Annex B listing means that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers of artificially

Didierea trolii

Alluaudia humbertii

Alluaudia ascendens

propagated plants and tissue cultured plants still in their sterile flasks or containers.

Artificial propagation

From the trade data, it appears that artificially propagated specimens of all species are available from nurseries in the Czech Republic, the Netherlands, Spain, Germany and Switzerland. Some species can be grown from seed, but seedlings are susceptible to damping off. Propagation by cuttings is more successful, and the rootstock of *Alluaudia procera* is commonly used for grafting many of the more difficult species of Didiereaceae.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for any of these species. See Species + for details.

EU Decisions

There are a number of EU Decisions for these species. See Species + for details.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Didiereaceae: *Alluaudia ascendens* (Drake) Drake; *Alluaudia comosa* (Drake) Drake; *Alluaudia dumosa* (Drake) Drake; *Alluaudia humbertii* Choux; *Alluaudia montagnacii* Rauh; *Alluaudia procera* (Drake) Drake *Alluaudiopsis fiherenensis* Humbert & Choux; *Alluaudiopsis marnieriana* Rauh *Decarya madagascariensis* Choux *Didierea madagascariensis* Baill; *Didierea trollii* Capuron & Rauh	**Appendix II** 04/02/1977 **Annex B** 01/06/1997	**Appendix II** 12/06/2013 **Annex B** 04/02/2017 **Annotation** #4: All parts and derivatives, except: (a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; (b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; (c) cut flowers of artificially propagated plants; (d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; (e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus*(Cactaceae); and (f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade.
Family: Didiereaceae		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● *Decarya madagascariensis*

● *Decarya madagascariensis*

● *Alluaudiopsis marnieriana*

Dioscorea deltoidea

Distribution

Dioscorea is a genus of around 600 species of tuberous, herbaceous perennial lianas, one of which, *Dioscorea deltoidea*, is listed in CITES Appendix II/Annex B to the EU WTR. It occurs in the Himalayan region and Indochina, including Afghanistan, Bhutan, Cambodia, China, India, Lao PDR, Nepal, Pakistan, Thailand and Viet Nam in broad leaved and scrub forests in humus rich soils.

Identification

Dioscorea deltoidea is a deciduous perennial which produces a vigorous, annual climbing stem up to 3 m tall from a horizontal rhizome, 3-40 cm in length, which is borne close to the surface of the soil.

Uses

Several species of *Dioscorea* are known as yams and are cultivated for agriculture. The roots of many species also contain diosgenin, widely used in modern medicine to manufacture progesterone and other steroid drugs used in contraceptives and in the treatment of asthma and arthritis. The roots of *D. deltoidea* contain an average of 4.8% diosgenin. However, it appears that these drugs are now produced synthetically with limited extraction from plants. It is also used locally as a medicine, hair wash and food. Another species, *D. elephantipes*, is a preferred ornamental by specialist succulent plant collectors.

Trade

According to the CITES Trade Database there is a very small amount of international trade in artificially propagated live plants from South Africa, Belgium, Germany and the Netherlands, imported by the US, Switzerland, Singapore and Japan. A larger trade in artificially propagated derivatives and medicine was exported by Viet Nam to the US and Switzerland, all of which was seized. Although there are reports of trade from Nepal, Pakistan and India there are no official trade statistics.

The #4 annotation means that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers from artificially propagated plants and tissue cultured plants still in their sterile flasks or containers.

Artificial propagation

This species is reported to be cultivated in Pakistan, India, Afghanistan, the Russian Federation and Viet Nam. Due to a low germination percentage of seeds, propagation is generally by leaf node or rhizome cuttings.

CITES international trade suspensions, export quotas and reservations

There is a current CITES trade suspension for this species. There are no current quotas or reservations in place for this species. See Species + for details.

EU Decisions

There are no EU Decisions for this species. See Species + for details.

● *Dioscorea deltoidea* leaf ● *Dioscorea elephantipes*

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Dioscorea deltoidea Wall. (syn: *Dioscorea nepalensis* Sweet & Bernardi)	**Appendix II** 01/07/1975 **Annex B** 01/06/1997	**Appendix II** 02/01/2017 **Annex B** 04/02/2017 **Annotation** #4: All parts and derivatives, except: a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade
Family: Dioscoreaceae		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● *Dioscorea deltoidea* supplement

● *Dioscorea elephantipes*

Dioscorea sp. supplement

Euphorbia

Distribution

The genus *Euphorbia* contains almost 2,000 species, many known as "spurges". The genus has a worldwide distribution: the herbaceous spurges are found in temperate and tropical zones worldwide; the tree, shrubby, and succulent species in the tropics and subtropics; and the true succulents occur primarily in the drier regions of southern and eastern Africa and also in tropical Asia, the Americas and Madagascar. Only the succulent species are regulated under CITES Appendix II/Annex B to the EU WTR with 10 species, all Madagascan, listed in Appendix I/Annex A.

Identification

The majority of species are annual or perennial herbs, but the genus also includes succulent, tree and shrubby forms. All species exude a latex (mostly milky white) when cut and this sap can be toxic if ingested and an irritant on contact. Leaves in the succulent species are usually reduced or deciduous. Stipules are usually present, often modified into prickles and spines. The spines are usually found in pairs and the flowers are not showy with the inflorescence containing one or more flowers and a series of coloured modified leaves called bracts. Many succulent *Euphorbia* resemble cacti (see *IDENTIFICATION* chapter).

Taxonomy

Limiting the species listed under CITES using a morphological (i.e. succulent versus non-succulent) rather than taxonomic approach can be confusing to the non-expert. To help with the delineation between regulated and non-regulated species a guide, *The CITES Checklist of Succulent Euphorbia Taxa (Euphorbiaceae) 2nd Edition (2003)*, lists those succulent species regulated by the Convention.

Uses

Euphorbia species are utilized worldwide although the toxic properties of the genus can limit its use, particularly in foods and as a medicine. Succulent species are in trade as ornamental houseplants and specimen plants in drought-tolerant landscaping; are used in local, traditional Chinese, Ayurvedic and homeopathic medicine, externally for warts and boils, internally for their diuretic/purgative properties (*E. antisyphilitica, E. candelabrum, E. lathyris, E. neriifolia, E. resinifera, E. tirucalli, E. trigona*); as a hunting poison (*E. cooperi, E. tirucalli, E. trigona, E. unispina*); and as living fences (e.g. *E. tirucalli, E. milii*). *Euphorbia antisyphilitica* produces a wax known as candelilla wax, used in the manufacture of gum base, inks, dyes, adhesives, coatings, emulsions, polishes and pharmaceutical products. Its main use today is in cosmetics (lipsticks, mascara, eye liners etc), with smaller amounts used as ingredients in food, pharmaceutical products and wood finish (e.g. for doors, musical instruments such as violins, parquet floors, and car polish). One of the most common *Euphorbia* species used as an ornamental plant (*E. pulcherrima*) is known as Poinsettia and it is not regulated under CITES.

Trade

According to the CITES Trade Database most trade is in artificially propagated live plants, the most heavily traded of which, *E. lactea* and the species *E. milii*, are exported by Thailand, the Netherlands and China. *Euphorbia* spp. and *E. primulifolia* are the most traded of wild-collected

Euphorbia flower

Euphorbia spines

live plants, from Madagascar, the largest exporter of all wild-collected live plants, mainly to France, the US and Germany. Thailand and the US are the largest exporters of artificially propagated Appendix I species (source code D), and the largest exports are in *E. francoisii*. Trade in parts and derivatives is nearly all in wild-collected *E. antisyphilitica*, over 31 million kg in the last ten years, recorded as wax or derivatives, origin Mexico.

Specialist succulent collectors concentrate on wild specimens of rare species with limited distribution, including many species from Madagascar, especially the dwarf ones, and relatively new species from eastern Africa. The wild collection of live plants of a number of Madagascan *Euphorbia* species has increased between 2011 – 2015 and these species are under review by CITES to identify whether they are subject to unsustainable levels of international trade. Species currently popular with collectors include *Euphorbia horwoodii, E. longituberculosa, E. suzannae-marnierae, E. waringiae, E. bupleurifolia, E. bongalavensis, E. knuthii, E. hedyotoides, E. kondoi, E. mahabobokensis* and *E. razafindratsirae*.

The text against the Appendix II/Annex B listing means that only succulent *Euphorbia* species are regulated, with the exception of *E. misera* which is not regulated under CITES. It also states that a number of frequently traded mutants and cultivars have been excluded from regulation as they are artificially propagated, traded in high numbers and are of no conservation concern to the species in the wild.

These are:

- artificially propagated specimens of cultivars of *E. trigona;*
- artificially propagated specimens of crested, fan-shaped or colour mutants of *E. lactea*, when grafted on artificially propagated root stock of *E. neriifolia*; and
- artificially propagated specimens of cultivars of *E.* 'Milii' when they are traded in shipments of 100 or more plants and are readily recognizable as artificially propagated specimens.

The mutants or cultivars have to meet these criteria to be considered exempt from CITES. The #4 annotation further exempts products and parts of *Euphorbia*. It states that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers of artificially propagated plants, tissue cultured plants still in their sterile flasks and finished products of *E. antisyphilitica* packaged and ready for retail trade (i.e. products requiring no further repackaging or processing).

Artificial propagation

Certain succulent *Euphorbia* species are artificially propagated on a large scale both in range and non-range States for the ornamental plant trade. The CITES list of registered nurseries that propagate Appendix I/Annex A listed *Euphorbia* species can be found at http://tinyurl.com/yajq4m3j.

CITES international trade suspensions, export quotas and reservations

There are a number of CITES trade suspensions and export quotas for certain *Euphorbia* species. There are currently no reservations in place for succulent *Euphorbia* species. See Species + for details.

EU Decisions

There are no EU Decisions in place for *Euphorbia* species. See Species + for details.

Artificially propagated *E. trigona* 'Rubra'

Artificially propagated *E. lactea* grafted on rootstock of *E. neriifolia*

Euphorbia

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Euphorbia L. See Species + for details on each species		
E. ambovombensis, E. capsaintemariensis, E. cylindrifolia (includes the ssp. *tuberifera), E. decaryi* (includes the vars. *ampanihyensis, robinsonii* and *spirosticha), E. francoisii, E. moratii* (includes the vars. *antsingiensis, bemarahensis* and *multiflora), E. parvicyathophora, E. quartziticola,* and *E. tulearensis*	**Appendix I** 18/01/1990	**Appendix I** 18/01/1990
E. cremersii (includes the *forma viridifolia* and the var. *rakotozafyi)*	**Appendix I** 16/02/1995	**Appendix I** 16/02/1995
E. ambovombensis, E. capsaintemariensis, E. cremersii (includes the forma *viridifolia and the var. rakotozafyi), E. cylindrifolia* (includes the ssp. *tuberifera), E. decaryi* (includes the vars. *ampanihyensis, robinsonii* and *spirosticha), E. francoisii, E. moratii* (includes the vars. *antsingiensis, bemarahensis* and *multiflora), E. parvicyathophora, E. quartziticola,* and *E. tulearensis*	**Annex A** 01/06/1997	**Annex A** 04/02/2017
Succulent *Euphorbia* species	**Appendix II** 01/07/1975 **Annex B** 01/06/1997	**Appendix II** 02/01/2017 **Annex B** 04/02/2017 **Annotation** Text: (Succulent species only except *Euphorbia misera* and the species included in Appendix I. Artificially propagated specimens of cultivars of *Euphorbia trigona*, artificially propagated specimens of crested, fan-shaped or colour mutants of *Euphorbia lactea*, when grafted on artificially propagated root stock of *Euphorbia neriifolia*, and artificially propagated specimens of cultivars of *Euphorbia* 'Milii' when they are traded in shipments of 100 or more plants and readily recognizable as artificially propagated specimens, are not subject to the provisions of the Convention) #4 All parts and derivatives, except: a) seeds (including seedpods of *Orchidaceae*), spores and pollen (including pollinia). The exemption does not apply to seeds from *Cactaceae* spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade
Family: Euphorbiaceae		
CITES Standard Reference: The CoP has adopted a standard reference for this genus. It is *The CITES Checklist of Succulent Euphorbia Taxa* (*Euphorbiaceae*) *2nd Edition*. Carter, S. & Eggli, U. (2003). Federal Agency for Nature Conservation of Germany, Bonn. See Species + for further information.		

Euphorbia capsaintemariensis

Euphorbia capmanambatoensis

Euphorbia trichadenia

Euphorbia piscidermis

Euphorbia tenuispinosa

Euphorbia ankarensis

Euphorbia pulcherrima

Euphorbia antisyphilitica – Candelilla wax pellets

Euphorbia antisyphilitica – raw Candelilla wax

Euphorbia rossii

Fouquieria

Distribution

The only genus in the family *Fouquieriaceae*, there are around 11 species of *Fouquieria*, all of which are xerophytic woody shrubs and trees found in Mexico and the southern parts of the US in dry, arid soil. Three species are listed under CITES: *Fouquieria fasciculata* and *F. purpusii* in Appendix I/Annex A to the EU WTR and *Fouquieria columnaris* in Appendix II/Annex B.

Identification

Fouquieria fasciculata is a shrub or small tree, ranging in height from 4 – 15 m. It has a swollen caudex that can grow up to 60 cm in diameter, from which grow woody branches that taper to red spines. *Fouquieria purpusii* can grow to 4 m, with a tapering light green trunk with distinct corky grey markings. *Fouquieria columnaris* is the largest of the species, and has a substantial tapering succulent greenish trunk up to 20 m tall, with short spiny branches. The listing proposal tabled at CoP4 for these species notes that *Fouquieria columnaris* differs from *F. fasciculata* and *F. purpusii* in having more yellow colouring in the petals, included stigmas rather than stigmas extending beyond the petals, flowers borne in terminal panicles rather than corymbose panicles, and a trunk succulent throughout rather than restricted to the base. *Fouquieria fasciculata* is distinguished from *F. purpusii* by its succulent trunk expanded only at the base and abruptly narrowing above, rather than conically tapering to the apex.

Uses

All three species are sought-after by succulent plant enthusiasts for use in landscaping and as ornamental potted plants.

Trade

According to the CITES Trade Database there is a very small amount of trade in artificially propagated specimens of all three species, the majority of which is exported by the US, Spain, Germany and the Czech Republic. Large specimens salvaged from construction sites are sometimes available from nurseries in the US, and command high prices.

The Appendix I/Annex A listing for *F. fasciculata* and *F. purpusii* means that all parts and derivatives, live or dead, are regulated. The #4 annotation against the Appendix II/Annex B listing for *F. columnaris* means that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers of artificially propagated plants and tissue cultured plants still in their sterile flasks or containers.

Artificial propagation

All three species can be grown from seed and cuttings, but growth is extremely slow and widespread cultivation is not considered profitable. Seeds and small plants are available online and from specialist succulent nurseries in Europe and the US.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for any of these species. See Species + for details.

● *Fouquieria columnaris*

● *Fouquieria fasciculata*

● *Fouquieria columnaris*

EU Decisions

There are no EU Decisions for these species. See Species + for details.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Fouquieria fasciculata Nash (syn. *Bronnia spinosa* Kunth) *Fouquieria purpusii* Brandegee	**Appendix I** 29/07/1983 **Annex A** 01/06/1997	**Appendix I** 29/07/1983 **Annex A** 04/02/2017
Fouquieria columnaris Kellogg ex Curran (syn. *Idria columnaria* Kellogg; *Fouquieria gigantea* Orcutt)	**Appendix II** 29/07/1983 **Annex B** 01/06/1997	**Appendix II** 02/01/2017 **Annex B** 04/02/17
Family: Fouquieriaceae		**Annotation:** #4 All parts and derivatives, except: a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● *Fouquieria fasciculata*

Harpagophytum

Distribution

The two species in this genus, *Harpagophytum procumbens* and *H. zeyheri*, are both found in southern Africa, in Angola, Namibia, Botswana and South Africa, and to a lesser extent in Zambia, Zimbabwe and Mozambique, in both clay and sandy soil, particularly where the natural vegetation has been grazed. These species are not listed in the CITES Appendices but are listed in Annex D to the EU WTR.

Identification

Harpagophytum procumbens is a prostrate, perennial plant producing annual stems with a succulent taproot from which arise secondary tubers. The fruit is a woody capsule with curved arms, each with recurved spines. *Harpagophytum zeyheri* is a similar species, but the fruit has much shorter arms. The flowers of both species are pink or purple, with a yellow throat. Devil's claw is the common name for both species.

Uses

The fleshy secondary tubers of both species have been used in traditional medicine in southern Africa. Their root extracts contain the iridoid glycoside, harpagoside, which is thought to be effective in the treatment of osteoarthritis, tendonitis, kidney inflammation, and back pain and the species are now harvested on a commercial basis to supply the international pharmaceutical industry. *Harpagophytum procumbens* appears to be much more intensively harvested than *H. zeyheri*; however both species are commercially accepted in the industry pharmacopoeia and trade in *H. zeyheri* has increased in recent years.

Trade

According to the CITES Trade Database *Harpagophytum* species are exported as dried and sliced root tubers and the terms in trade consist of roots, derivatives, extracts, medicine and dried plants. Namibia exports the vast majority (nearly 1.8 million kg in the last ten years) of this large trade (which is only reported by importers) and Germany is the main importer, followed to a much lesser extent by Poland, Italy and France. All trade from range States appears to come from the wild, but China has exported 55,000 kg of dried plants and roots over the last ten years, all reported as wild sourced except for two records of artificially propagated extract (1,500 kg) in 2015 and 2016.

Both species have the Annotation §3, which means that live specimens and dried and fresh plants, including leaves, roots/rootstock, stems, seeds/spores, bark and fruits are regulated under the EU WTR.

Artificial propagation

There does not appear to be large scale cultivation of these species, but efforts have been made to encourage more sustainable harvesting by collecting only the secondary tubers and leaving the main taproot undisturbed. The species are protected in all the regions in which they grow, and can only be collected with a permit. However, due to the large range of the species and remote areas in which harvesting occurs, it could be that the implementation of sustainable harvesting methods is challenging which, together with difficulties in regulating the supply chain, could lead of overexploitation of the species.

● *Harpagophytum* tubers ● *Harpagophytum* dried tubers ● *Harpagophytum* pills

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for any of these species.

EU Decisions

There are no EU Decisions for these species. See Species + for details.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Harpagophytum procumbens DC ex Meissn. *Harpagophytum zeheri* DC ex Meissn. (syn. *Uncaria zeyheri* Kuntze)	**Annex D** 20/05/2004	**Annex D** 04/02/2017 **Annotation §3:** Live specimens and dried and fresh plants, including, where appropriate; leaves, roots/rootstock, stems, seeds/spores, bark and fruits.
Family: Pedaliaceae		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

Fruit of *Harpagophytum procumbens*

Hoodia

Distribution

There are around 12 species in the genus *Hoodia*, all of which are listed under CITES Appendix II/Annex B to the EU WTR, found in Angola, Botswana, Namibia and South Africa. *Hoodia gordonii*, the main species in trade, is found only in the Kalahari Desert in Namibia and South Africa. Species of the genus occur in a wide variety of arid habitats from coastal to mountainous, but typically on arid gravel or shale plains and slopes and ridges.

Appearance

Hoodia are stem succulents, with a branching, shrub-like form, and look similar to small columnar cacti. Flowers are prolific, and appear near the top of the stems. *Hoodia gordonii* is a cactus-like, clump-forming, spiny succulent to 75 cm tall, with pink to reddish purple flowers which have an unpleasant smell to attract the flies that pollinate them.

Uses

The San people of southern Africa have traditionally eaten the stem of *Hoodia* species as an appetite suppressant. An active compound called P57 was isolated by a research company and the rights for further development and the setting up of a sustainable production system were subsequently licensed. A benefit sharing agreement was set up between industry and the San community, recognising the use of their traditional knowledge. More recently, however, published studies of *Hoodia* species based on clinical trials were assessed and no reliable evidence was found to support its safe use or effectiveness in weight loss. Species of *Hoodia* are of interest to specialist succulent collectors.

Trade

According to the CITES Trade Database trade in live plants is very small, the majority artificially propagated and restricted to South Africa, Germany and Israel. The trade in dried plants has decreased substantially, from a peak in 2006-2007 of nearly 140,000 kg to zero in the last three years. The most common products in trade are derivatives, extracts, medicine and powder, two thirds of which are recorded as wild-collected with origin South Africa. The US is the major importer, followed by the EU (Germany, France, Spain and the UK). Seeds appear to be available online, but cultivated plants are less common. Powder and capsules are available in large numbers, both online and in store, supplying the weight loss market.

Under the #9 annotation all parts and derivatives, live or dead, are regulated except those bearing a label that states the material is obtained through controlled harvesting and production under the terms of individual agreements between the CITES MA in either Botswana, Namibia or South Africa and a manufacturer or trader in that country. Currently, no such agreements appear to be in place and many Parties interpret this to mean all parts and derivatives, live or dead, of *Hoodia* species are regulated and require a valid CITES export permit.

Artificial propagation

Hoodia gordonii appears to be in cultivation in South Africa

Hoodia gordonii

Harvested *Hoodia*

and is available online from specialist nurseries in Europe, Israel and the US, as are other species. Seed of all species is easy to germinate, but seedlings can suffer from damping off.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for any of these species. See Species + for details.

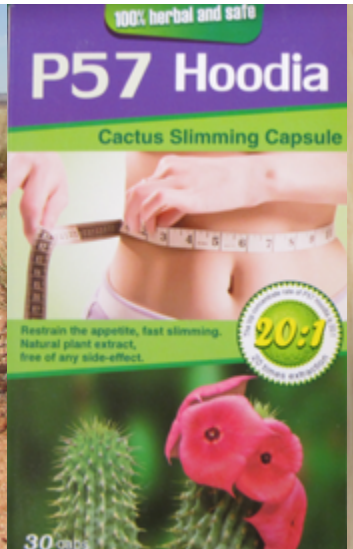
EU Decisions

There are a number of EU Decisions for these species. See Species + for details.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Hoodia Sweet ex Decne	**Appendix II** 12/01/2005 **Annex B** 22/08/2005	**Appendix II** 02/01/17 **Annex B** 04/02/17
Family: Apocynaceae		**Annotation** All parts and derivatives except those bearing a label: "Produced from *Hoodia* spp. material obtained through controlled harvesting and production under the terms of an agreement with the relevant CITES Management Authority of [Botswana under agreement No. BW/xxxxxx] [Namibia under agreement No. NA/xxxxxx] [South Africa under agreement No. ZA/xxxxxx]".
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● *Hoodia gordonii*

● *Hoodia* pills: no label



● *Hoodia* product: no label

Lewisia serrata

Distribution

This species is one of approximately 17 species in the genus *Lewisia* and is listed under CITES Appendix II/Annex B to the EU WTR. It is considered rare, occurring in only 8–11 locations. It is native to the shady, mossy cliffs (900–1,300 m) in steep gorges in the El Dorado and Placer counties in eastern California, US. Most populations occur on National Forest System lands. It is currently under review by the US as it has previously been proposed for deletion from Appendix II at CoP11 (Gigiri, Kenya, 2000).

Identification

This species forms small, neat rosettes of evergreen, deeply toothed leaves with a pointed apex. The flowers are sprays of small white star-like flowers, each finely veined with pink or rose and 1–1.2 cm wide.

Taxonomy

Lewisia serrata is considered by some taxonomic revisions to be a synonym of the accepted name *L. cantelovii* or may be referred to under the synonym *L. cantelovii* subsp. *serrata*.

Uses

This species is grown as an ornamental plant suitable for rock gardens, scree beds and alpine houses.

Trade

The CITES Trade Database shows that there is a very low level of trade in artificially propagated live plants, in particular from 2011 onwards. The major exporters are Belgium and Germany and all imports are by Switzerland.

Poaching from the wild by private and commercial collectors is still seen as a threat. Other *Lewisia* species, such as *L. cotyledon* and its hybrids and cultivars, are more prevalent in trade and identification between the species may be difficult for the non-expert.

The #4 annotation means that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers from artificially propagated plants and tissue cultured plants still in their sterile flasks or containers.

Artificial propagation

This species can be propagated by seed or more slowly by taking offsets from the mother plant. The plants will ultimately develop to form a rosette of leaves. It is of interest to alpine plant enthusiasts; it does not appear to be widely available in commercial nurseries, but is advertised for sale by rare seed suppliers. Cultivation and international trade appears limited.

CITES international trade suspensions, export quotas and reservations

There are currently no CITES trade suspensions, export quotas or reservations in place for this species. See Species + for details.

EU Decisions

There are currently no EU Decisions in place for this species. See Species + for details.

● *Lewisia serrata*

● *Lewisia cotyledon 'Rainbow'*

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Lewisia serrata Heckard and Stebbins	**Appendix II** 29/07/1983 **Annex B** 01/06/1997	**Appendix II** 02/01/2017 **Annex B** 04/02/2017
Family: Portulacaceae		**Annotation** #4 All parts and derivatives, except: a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

Lewisia serrata flower

Nolina interrata

Distribution

This rare species, commonly known as dehesa beargrass, is restricted to a few populations found in dry chaparral or grassland habitats in the southern foothills of San Diego County, US and three populations in bordering northern Baja California, Mexico. There are 29 species in the genus *Nolina* but this is the only CITES-listed species. Previously listed in CITES Appendix I/Annex A to the EU WTR, this species was downlisted to Appendix II/Annex B in 2007.

Identification

Nolina interrata is a large, yucca-like perennial succulent shrub with long, narrow leaves. The branching stem is mostly buried underground beneath the leaf clusters where it forms a wooden platform from which the waxy, blue-green leaves are borne in rosettes. Mature plants are often 2–3 m across.

Taxonomy

Although listed in the Appendices and Annexes under the family Agavaceae, certain taxonomic revisions place this species in the family Asparagaceae. **Note:** *N.interrata* is an accepted name. Always check which species you are dealing with as some *Nolina* names in use are considered synonyms of CITES-listed *Beaucarnea* species.

Uses

This species is used as a drought-tolerant ornamental plant for use in landscaping. However, its use is limited to warmer climates due to its intolerance to frost or snow.

Trade

The CITES Trade Database records a very low volume of artificially propagated live plants in trade. Two shipments are recorded from Belgium to Switzerland in 2006 and 2011. If wild plants are in trade they may be salvaged from road building or bulldozed areas, but information on wild collection is poor. This species may be in trade under the name *Dehesa interrata* or confused with *Nolina recurvata*, which is a synonym of *Beaucarnea recurvata* (CITES Appendix II/Annex B).

Artificial propagation

This species is not suitable for landscaping in temperate regions and is rare in cultivation. It can be propagated by seed or suckers and specimens are found in botanic garden collections. Live plants are seen on rare occasions for sale online through native plant nurseries, particularly in the US.

CITES international trade suspensions, export quotas and reservations

There are currently no CITES trade suspensions, export quotas or reservations in place for this species. See Species + for details.

EU Decisions

There are currently no EU Decisions in place for this species. See Species + for details.

Nolina sp.

● *Nolina interrata*

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Nolina interrata Gentry	**Appendix I** 29/07/1983 **Annex A** 01/06/1997	
Family: Agavaceae (Asparagaceae)	**Appendix II** 13/09/2007	**Appendix II** 13/09/2007
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.	**Annex B** 11/04/2008	**Annex B** 04/02/2017 **Annotation** There is no annotation, therefore all parts and derivatives, live or dead, are regulated

Plant sold as *Nolina* sp.

Operculicarya

Distribution

The genus *Operculicarya* comprises eight species, seven of which are endemic to Madagascar, with the eighth occurring in Madagascar and the Comoros. Three are listed under CITES Appendix II/Annex B to the EU WTR: *Operculicarya decaryi*, *O. hyphaenoides* and *O. pachypus* and occur only in southern Madagascar in xerophytic, deciduous forest.

Identification

Operculicarya decaryi, the most common of the three species, is a deciduous thick-stemmed (pachycaul) tree with thin gnarled branches which make a zig zag pattern and can grow up to 9 m tall. The bark is silver, irregular and bulbous. The flowers are red and produce small fleshy drupes. *Operculicarya hyphaenoides* is a well-branched, deciduous thick-stemmed shrub or small tree growing up to 1.5 m, occasionally to 3 m tall. It has a bulbous and slightly tapered conical or cylindrical trunk with long and short zigzagging branches. Its bark exudes a thick soluble aromatic gum. *Operculicarya pachypus* is a short, thick-stemmed deciduous shrub which grows to around 1.2 m in height.

The listing proposal tabled at CoP16 (Thailand, 2013) notes that *Operculicarya decaryi* resembles *O. pachypus*. The branches of both species are in a zigzag pattern, but those of *O. pachypus* have the ends in the form of sharp spines.

Uses

Operculicarya decaryi is used locally as medicine, food, for rope production and traditional rituals as well as for ornamental use. It is in trade for horticulture, but mainly as small plants and can reportedly be easily propagated. *Operculicarya hyphaenoides* and *O. pachypus* both have a local, medicinal use. All three species are sought-after by succulent collectors as bonsai-type plants, both nationally and internationally.

Trade

According to the CITES Trade Database, there is a small amount of trade in all three species, all in live plants from Madagascar and the vast majority wild-collected. In recent years, however, trade in artificially propagated specimens has increased suggesting nurseries are beginning to supply more plants. Seeds and live plants are available to buy online.

Artificial propagation

Operculicarya decaryi can be easily propagated from stem or root cuttings but seeds may show low viability. *Operculicarya hyphaenoides* is fairly easy to grow from seed as well as stem and root cuttings, and *O. pachypus* is reportedly easily propagated from cuttings from the tuberous roots. There does not appear to be widespread cultivation of any of the species and wild collection is still ongoing.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for any of these species. See Species + for details.

● *Operculicarya pachypus*

● *Operculicarya decaryi*

● *Operculicarya pachypus*

EU Decisions

There are a number of EU Decisions for these species. See Species + for details.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Operculicarya decaryi H. Perrier *Operculicarya hyphaenoides* H. Perrier *Operculicarya pachypus* Eggli	**Appendix II** 12/06/2013 **Annex B** 10/08/2013 **Appendix II** 23/06/2010 **Annex B** 15/08/2010 **Appendix II** 23/06/2010 **Annex B** 15/08/2010	**Appendix II** 12/06/2013 **Annex B** 04/02/2017 **Appendix II** 23/06/2010 **Annex B** 04/02/2017 **Appendix II** 23/06/2010 **Annex B** 04/02/2017 **Annotation** There is no annotation, therefore all parts and derivatives, live or dead, are regulated.
Family: Anacardiaceae		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● *Operculicarya decaryi*

● *Operculicarya decaryi*

● *Operculicarya decaryi*

Pachypodium

Distribution

There are approximately 25 species in the genus *Pachypodium*, all of which are listed under CITES. Around five species occur in continental Africa, and the remaining in Madagascar. Three species from Madagascar are listed in CITES Appendix I/Annex A to the EU WTR: *Pachypodium ambongense*, *P. baronii* and *P. decaryi*. All other species are in Appendix II/Annex B. They are generally found in xerophytic rocky environments in sunny, frost free conditions; some can survive very low temperatures.

Identification

Pachypodium is a genus of caudiciform, succulent, spine bearing trees and shrubs up to 15 m tall with grey or brown stems which are large or swollen at the base and have a rosette of leaves at the end. Most species are branched, with *Pachypodium namaquanum* the exception, and have spines, except *P. decaryi* which has smooth branches. There is great variation in the growth form, from tree-like species to branching shrubs, or with below ground caudices; one species, *Pachypodium brevicaule*, is a dwarf species that resembles a pile of stones. Species that come from further south in the deciduous, xerophytic bush of Madagascar tend to be more tree-like, for example *Pachypodium lamerei* and *P. geayi*.

Taxonomy

The Appendix I listing for *Pachypodium baronii* includes *Pachypodium baronii* var. *baronii* (a synonym of *P. baronii*) and *Pachypodium baronii* var. *windsorii* (a synonym of *Pachypodium windsorii*).

Uses

Pachypodium are ideal as house plants and specimen garden or landscaping plants. The plant fibres may be used locally for rope and the sap for hunting poisons, brewing beer and for medicinal purposes.

Trade

Pachypodium lamerei is the most heavily traded species of this genus and has been in cultivation for many years. Trade in all species is mainly in wild and artificially propagated live plants; the main exporter of wild specimens is Madagascar and the main exporter of artificially propagated specimens is Canada (due to one large export of over 50,000 in 2007), followed by South Africa and Madagascar. Germany imports the largest amount of wild-collected specimens, notably one import of 951 live plants of *Pachypodium densiflorum* in 2015, followed by the US, who are also the main importer of artificially propagated live plants, and Switzerland.

The Appendix I/Annex A listing for *Pachypodium ambongense*, *P. baronii* and *P. decaryi* means that all parts and derivatives, live or dead, are regulated. The #4 annotation against the Appendix II/Annex B listing for all other species means that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers of artificially propagated plants and tissue cultured plants still in their sterile flasks or containers.

Artificial propagation

Propagation is mainly by seed although stem and root cuttings are common for some species (*P. bispinosum* and *P. succulentum*). Most species can also be grafted

● *Pachypodium lamerei*

● *Pachypodium* in nursery

● *Pachypodium succulentum*

on to *Pachypodium lamerei*. *Pachypodium* species are cultivated in both specialist and larger nursery chains, within range and non-range States, usually traded as plants 5-100 cm in height, with or without leaves. Seeds are widely available on the internet. Some species, like *Pachypodium brevicaule*, are difficult to grow for the amateur and have a very slow growth rate. The genus has been horticulturally developed world-wide and many cultivars have been produced.

CITES international trade suspensions, export quotas and reservations

There are currently no CITES trade suspensions or reservations for *Pachypodium* species. There are export quotas in place for certain species. See Species + for details and updates on individual species.

EU Decisions

There are a number of EU Decisions for these species. See Species + for details.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Pachypodium ambongense Poiss. *Pachypodium baronii* Constantin & Bois *Pachypodium decaryi* Poiss.	**Appendix I** 16/02/1990 **Annex A** 01/06/1997	**Appendix I** 16/02/1990 **Annex A** 04/02/2017
Pachypodium spp.	**Appendix II** 04/02/1977 **Annex B** 01/06/1997	**Appendix II** 02/01/2017 **Annex B** 04/02/2017
Family: Apocynaceae		**Annotation** #4: All parts and derivatives, except: (a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; (b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; (c) cut flowers of artificially propagated plants; (d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; (e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and (f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade.
CITES Standard Reference: Newton, L.E. and Rowley, G.D. 2001. CITES Aloe and Pachypodium checklist. Eggli, U. (Ed.). Städtische Sukkulenten-Sammlung, The Royal Botanic Gardens, Kew, Zurich, Switzerland and its update: Lüthy, J.M. 2007. An update and supplement to the CITES Aloe and Pachypodium checklist. Bern, Switzerland. See Species + for further information.		

● *Pachypodium namaquensis*

● *Pachypodium densiflorum*

Senna meridionalis

Distribution

There are around 250-300 species in the genus *Senna*, of which one, *Senna meridionalis*, is listed in CITES Appendix II/Annex B to the EU WTR. Endemic to Madagascar, it grows on calcareous soils in arid and semi-arid areas in deciduous forest and thorny scrub.

Identification

A deciduous much-branched shrub or shrubby tree with zigzag branches, *Senna meridionalis* can grow to a height of 1-2 m. The leaves are small and the flowers are bright yellow.

Use

This species is popular with the international specialist succulent plant trade for its bonsai-like appearance.

Trade

According to the CITES Trade Database, there is a small trade in both wild and artificially propagated live plants, the majority exported by Madagascar to Japan, Germany, Thailand and the US. Seeds and small specimen plants are available online.

Artificial propagation

This species appears to be relatively easy to grow from woody stem cuttings and seed and grows fairly quickly. It is reported to be slow growing in the wild, where it often grows on limestone.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for this species. See Species + for details.

EU Decisions

There is currently an EU opinion for this species.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Senna meridionalis Du Puy (syn. *Cassia meridionalis* R.Vig.)	**Appendix II** 12/06/2013 **Annex B** 10/08/2013	**Appendix II** 12/06/2013 **Annex B** 04/02/2017 **Annotation** There is no annotation, therefore all parts and derivatives, live or dead, are regulated.
Family: Leguminoseae		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

Senna meridionalis

Senna meridionalis

Tillandsia

Distribution

Tillandsia is a large genus of over 600 evergreen species in the Bromeliad or pineapple family native to Central and South America. They are commonly called airplants. Three species are listed in CITES Appendix II/Annex B to the EU WTR: *Tillandsia harrisii*, *T.kammii* and *T. xerographica*. *Tillandsia harrisii* is native to the cliffs along the Rio Teculutan, at an altitude of 500 m above sea level in Guatemala. *Tillandsia kammii* is native to Honduras. *Tillandsia xerographica* is native to southern Mexico, Guatemala, El Salvador and likely to occur in Honduras. It is restricted to semi-arid habitats, mainly dry forests and thorn scrub, at elevations of 140–700 m above sea level.

Identification

To the non-expert, identification of *Tillandsia* species can be difficult. *Tillandsia* are characterised by their silvery green leaves and the ability to grow without soil, including the many epiphytic species. *Tillandsia harrisii* has a silvery-green appearance due to the abundance of tiny scales called trichomes on the leaves that absorb water from the atmosphere. The species has a relatively long stem, with long (7–10 cm), symmetrical, velvety, silvery green leaves. The inflorescence is comprised of five to nine spirally arranged flowers, with orange to red floral bracts and blue-violet petals. *Tillandsia kammii* has silvery-green, simple sword-shaped leaves in rosettes and spikes of light-purple tubular flowers. The slow growing *Tillandsia xerographica* has silvery-light green leaves that are wider at the base and taper to a point. They form a distinctive tight rosette of curled leaves that can reach up to 90 cm in width.

Uses

All three species are in trade as live plants, although *Tillandsia kammii* is a relatively rare species. *Tillandsia harrisii* and *T. xerographica* are more commonly sold as ornamental plants or used in floral displays. The more striking *Tillandsia xerographica* is also used in wedding bouquets. Due to their ability to survive with minimal care, *Tillandsia* are often sold as novelty house plants attached to ornaments or in a variety of soilless containers.

Trade

The CITES Trade Database indicates that all three species are only in trade as artificially propagated live plants. There are large discrepancies between the large volumes recorded by exporters of *Tillandsia* spp. versus smaller amounts recorded by importers, the majority of which is exported by Belgium to Switzerland. Other exporters to Switzerland include Germany and Hungary. The trade in *T. kammii* is very low in volume with the majority re-exports from Switzerland (source Hungary) to Hungary. Guatemala is the largest exporter to the US and Singapore with very low volume exports from the Czech Republic to Japan. Guatemala is the main exporter of live plants of *Tillandsia harrisii*, sometimes traded under the name *T. capitata*, to the US, the Netherlands, Japan, the UK, Germany and Italy, amongst others. Artificially propagated cultures of this species are in trade (200 cultures in 2010) from Guatemala to France. *Tillandsia xerographica* is also in trade as artificially propagated derivatives, dried plants and cultures. The trade in dried plants and cultures of *T. xerographica* from Guatemala to France is relatively new (2009 onwards) and small in volume. Derivatives are re-

● *Tillandsia kammii*

● Non CITES-listed *Tillandsia* species

exported from Italy to China (source Guatemala). The major exporter of live plants is Guatemala, with smaller exports from the Netherlands, the Philippines, Colombia, Thailand and the US. The major importer of plants from Guatemala is the European region, in particular the Netherlands, Switzerland and Germany. Other large importers are the US, Japan, China and Canada.

All seizures of live plants of *Tillandsia* spp., *Tillandsia harrisii* and *Tillandsia xerographica* were made by the US. The main source of these plants was Guatemala with a shipment of 1,400 plants of *T. xerographica* seized in 2015 and lower levels of seizures of *Tillandsia* spp. from Thailand, Mexico and Guatemala and *T. harrisii* from Guatemala.

The #4 annotation means that all parts and derivatives, live or dead, are regulated except seed, pollen, cut flowers of artificially propagated plants and tissue cultured plants still in their sterile flasks or containers.

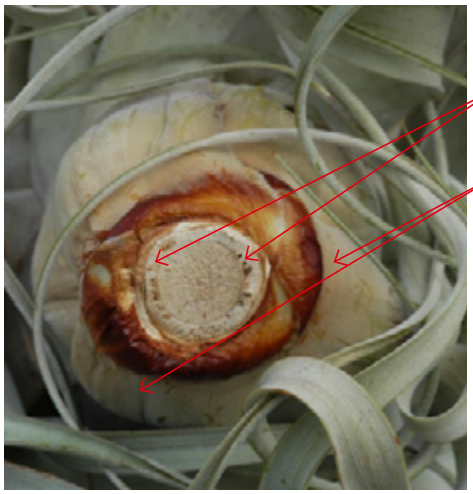
Artificial propagation

The propagation of *Tillandsia* from seed is carried out but is considered commercially unviable due to the slowness of this method. The preferred propagation method is to detach offsets and grow them on to a marketable sized plant. In the past, this method was limited because many *Tillandsia* species are either slow growing or there is a limited number of viable offsets produced per mother plant. To circumvent this problem many plants have been, and may still be, collected from the wild and misdeclared as artificially propagated.

New propagation techniques have been developed to increase the number of offsets produced per mother plant. This includes preventing the plant from flowering by using hormones as this induces the production of offsets which are removed relatively early. This increases the number of generations of offsets from mother stock plants. The following pictures help distinguish between a wild plant of *T. xerographica* and one that is an offset. This may be important given stricter conditions set by some CITES Parties on the import of *T. xerographica* (see EU Decisions below).

Tillandsia harrisii and in particular *T. xerographica* are in commercial trade and cultivation both in range States, in particular Guatemala, and non-range States (e.g. US, Colombia). European nurseries have established "*Tillandsia* farms" in these countries, exporting plants to Europe. All three species are available as live plants online although availability of *T. kammii* is very limited.

In this photograph, the *vascular bundle* in the middle of the stem is oval in shape and *cataphylls*, scale like, often keeled leaves, are present. This denotes that the plant is young and propagated in a nursery from an offset.



In this photograph, the *vascular bundles* are round and there are no *cataphylls* present.

This suggests that the plant is older and more likely to be wild-collected.

● *Tillandsia xerographica*

● Non CITES-listed *Tillandsia* species

Tillandsia

CITES international trade suspensions, export quotas and reservations

There are currently no trade suspensions, export quotas and reservations for *T. kammii* and *T. harrisii*. There are no trade suspensions or reservations for *T. xerographica*, but there are current export quotas in place for this species.

Check Species + for details or check the annual export quotas on the CITES website http://tinyurl.com/yaqvxkrl

EU Decisions

There are currently no EU Decisions for *T. kammii* and *T. harrisii*. There is a current EU Decision for *T. xerographica* from Guatemala. See Species + for details.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Tillandsia harrisii R. Ehlers *Tillandsia kammii* Rauh *Tillandsia xerographica* Rohw.	**Appendix II** 11/06/1992 **Annex B** 01/06/1997	**Appendix II** 02/01/2017 **Annex B** 04/02/2017 **Annotation** #4 All parts and derivatives are regulated, except: a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade
Family: Bromeliaceae		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● Non CITES-listed *Tillandsia* species

Tillandsia harrisii

Uncarina

Distribution

There are around ten species of *Uncarina*, all of which are endemic to Madagascar. Two species are listed under CITES Appendix II/Annex B to the EU WTR: *Uncarina grandidieri*, found in the dense dry forest and xerophytic thicket of the south and south-west on calcareous plateaux, coastal soil, tropical ferruginous soil and sandy limestone soil, and *Uncarina stellulifera*, which has a wide distribution in the south and south-west, in dry thorny thicket and dry forest.

Appearance

Uncarina grandidieri is one of the largest plants of the genus and can reach a height of 5 m. It has a dense crown of branches and is easily recognized by its yellow flowers, which has large tubular petals, and its fruits, covered with spines tipped with hooks which facilitates dispersal by clinging to animal fur. *Uncarina stellulifera* is a small tree 1 to 2.5 m tall with swollen stems. The flowers are whitish-pink and the fruit bears two types of spines ending in hooks.

Uses

Both species are used medicinally and for cosmetic purposes, and the fruits are sometimes used for rat traps. They are also in ornamental use by the specialist succulent collector.

Trade

According to the CITES Trade Database, there is a very small amount of trade in live plants of both species from Madagascar, the vast majority wild-collected.

There is no annotation for these species so all parts and derivatives, live or dead, are regulated.

Artificial propagation

Both species are in cultivation on a small scale as ornamental plants in Madagascar and elsewhere. They appear to be easy to propagate from seeds and cuttings and grow rapidly.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for any of these species. See Species + for details.

EU Decisions

There are a no EU Decisions for these species. See Species + for details.

● *Uncarina grandidieri*

● *Uncarina grandidieri*

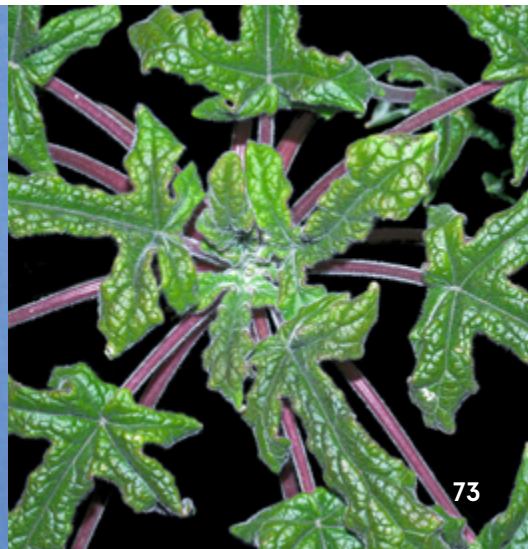
● *Uncarina peltata*

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Uncarina grandidieri H. Humbert (syn. *Harpagophytum grandidieri* Baill.) *Uncarina stellulifera* H. Humbert	**Appendix II** 12/06/2013 **Annex B** 10/08/2013	**Appendix II** 12/06/13 **Annex B** 04/02/2017 **Annotation** There is no annotation, therefore all parts and derivatives, live or dead, are regulated.
Family: Pedaliaceae		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

● *Uncarina decaryii*

● *Uncarina grandidieri* fruit

● *Uncarina decaryi*



Welwitschia mirabilis

Distribution

Welwitschia mirabilis is the only species in its genus and is a unique succulent endemic to the Namib Desert, which stretches from the western part of Namibia along the coast to the southwest of Angola. It is an area of extremely low rainfall and the plant is found in the coastal fog belt, surviving on the moisture from fog and dew. Formerly listed in CITES Appendix I/Annex A to the EU WTR it was downlisted to Appendix II/Annex B as the plant is relatively common within its habitat and is well protected in its native range.

Appearance

Welwitschia mirabilis is a very unusual, long lived plant and only ever produces two permanent, evergreen strap-like leaves that grow along the ground and become weathered and tattered with age; typically leaves grow around 8-15 cm year and the species can live for up to 1,500 years. A dioecious plant, male and female cones are produced on separate plants.

Uses

Historically, the core of this plant was eaten raw or baked in ashes by local people. Seeds are now traded for the specialist horticultural industry.

Trade

According to the CITES Trade Database, there is a low level of trade in wild-collected live plants, seeds, derivatives, roots, leaves and specimens of this species, nearly all for scientific purposes from Namibia. However, seeds appear to be widely available from specialist nurseries around the world.

The #4 annotation against the Appendix II/Annex B listing means that all parts and derivatives, live or dead, are regulated except seeds, pollen, cut flowers of artificially propagated plants and tissue cultured plants still in their sterile flasks or containers.

Artificial propagation

There is no large scale cultivation of this species, but seeds appear to be easy to germinate and once established plants can be grown on easily. However, seedlings are prone to fungal attack and care should be taken when watering, as damping-off can occur.

CITES international trade suspensions, export quotas and reservations

There are no current CITES suspensions, quotas or reservations in place for this species. See Species + for details.

EU Decisions

There are a no EU Decisions for this species. See Species + for details.

Welwitschia mirabilis

Welwitschia mirabilis

Welwitschia mirabilis

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Welwitschia mirabilis Hook.f.	**Appendix I** 01/07/1975 **Annex B** 01/06/1997	**Appendix II** 02/01/2017 **Annex B** 04/02/2017
Family: Welwitschiaceae		#4: (a) seeds (including seedpods of Orchidaceae), spores and pollen (including pollinia). The exemption does not apply to seeds from Cactaceae spp. exported from Mexico, and to seeds from *Beccariophoenix madagascariensis* and *Neodypsis decaryi* exported from Madagascar; (b) seedling or tissue cultures obtained in vitro, in solid or liquid media, transported in sterile containers; (c) cut flowers of artificially propagated plants; (d) fruits and parts and derivatives thereof of naturalized or artificially propagated plants of the genus *Vanilla* (Orchidaceae) and of the family Cactaceae; (e) stems, flowers, and parts and derivatives thereof of naturalized or artificially propagated plants of the genera *Opuntia* subgenus *Opuntia* and *Selenicereus* (Cactaceae); and (f) finished products of *Euphorbia antisyphilitica* packaged and ready for retail trade.
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

Welwitschia mirabilis

Welwitschia mirabilis

Yucca queretaroensis

Distribution

The genus *Yucca* consists of approximately 50 species. *Yucca queretaroensis* is the only species listed in CITES Appendix II/Annex B to the EU WTR. This species is native to dry scrub on the sides of steep gorges in the Mexican states of Querétaro, Guanajuato and Hidalgo. Due to its small population size, restricted distribution and habitat specificity, it is considered rare.

Identification

This species has a tall single trunk up to 4 m high with a large rounded crown of narrow, thin (no more than 3 mm across), grey-blue leaves that are square in cross section. A skirt of dried dead leaves can hang below the crown of live leaves. The flowering stalk with white flowers can reach up to 1 m above the crown.

Taxonomy

This species is listed in the Appendices and Annexes under the family name Agavaceae. According to certain taxonomic revisions it has been placed in the family Asparagaceae.

Uses

In Mexico this species is mainly used for ornamental purposes, the flowers are traditionally used in festive events and previously it was used locally in the making of watertight roofs for rural housing. This species is in trade as a specimen plant for use in drought-tolerant landscaping.

Trade

The CITES Trade Database does not record trade under the species name, *Yucca queretaroensis* probably due to the recent listing of this species. It records a low level of trade in live, artificially propagated plants in *Yucca* spp. from 2014 – 2016. The only recorded exporter is the Netherlands with Montenegro as the only importer.

From trade studies in 2009, the main specimens in international trade were seeds; small plants with short/no stems that are likely grown from seed (found for sale in Germany, the UK, the US, Japan and the Netherlands); medium to large sized plants (up to 70 cm tall, with a stem); and larger plants (70–160 cm tall with a well-established stem) priced at hundreds and thousands of dollars (found for sale in Belgium, France, Germany, the Netherlands and Portugal). Many of these specimens will have been imported before the species was listed under CITES.

Artificial propagation

Although slow growing and comparatively rare in cultivation, this species has become one of the more sought-after *Yucca* species, used as an architectural specimen shrub suitable for landscaping as it can withstand both heat and frost. This plant may be suitable as a house plant if adequate light is provided. Specimens can be found in botanic garden collections both in Mexico and in non-range States. There are a small number of nurseries in the US and the Netherlands that have, in recent years, established propagation of *Y. queretaroensis* from seed and micro-propagation.

CITES international trade suspensions, export quotas and reservations

There are currently no CITES trade suspensions, export

Yucca queretaroensis

quotas or reservations in place for this species. See Species + for details.

EU Decisions

There are currently no EU Decisions in place for this species. See Species + for details.

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Yucca queretaroensis Piña (1989)	**Appendix II** 12/06/2013 **Annex B** 10/08/2013	**Appendix II** 12/06/2013 **Annex B** 04/02/2017 **Annotation** There is no annotation, therefore all parts and derivatives, live or dead, are regulated
Family: Agavaceae (Asparagaceae)		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). See Species + for further information.		

Yucca queretaroensis

Zygosicyos

Distribution

Two species of *Zygosicyos*, *Z. pubescens* and *Z. tripartitus,* are listed under CITES Appendix II/Annex B to the EU WTR, both of which are endemic to Madagascar. *Zygosicyos pubescens* is found in a few localities in the south east in scrub and dry forest in rocky areas with little shade. *Zygosicyos tripartitus* has a relatively wide distribution in central and southern Madagascar and grows in subarid mountain slopes among gneissic rocks.

Identification

Both species are in the gourd family, Cucurbitaceae. *Zygosicyos pubescens* has a swollen stem or caudex, which may reach nearly one metre in diameter, and vine-like branches with finely hairy, semi-succulent leaves. *Zygosicyos tripartitus* has a bun-shaped caudex up to 30 cm in diameter with a fissured, silver-grey, corky rind and covered with vines up to 5 m in length, characterized by tendrils and 3-lobed leaves with distinctive wavy margins but variable in shape; during the growing season the caudex plumps and fills out, in contrast to its shrunken appearance in the spring.

Taxonomy

The taxonomy of this genus is unclear and the species are still sometimes known as *Xerosicyos pubescens* and *Xerosicyos tripartitus*.

Uses

The species appears to be in low demand internationally as a horticultural plant, grown chiefly by specialist collectors of succulents.

Trade

According to the CITES Trade Database all trade in both species (around 250-300 specimens each) is from Madagascar, the majority to Japan, Germany and Hong Kong. Nearly all trade is in wild specimens, with only two reports (20 and 30 respectively) of trade in artificially propagated specimens of *Zygosicyos pubescens*. Specimens of *Zygosicyos* sp. Nova Madagascar (a newly discovered but as yet unnamed species from Madagascar) are available online.

Artificial propagation

There is no known large scale cultivation of either of these species. Nurseries in Madagascar appear to be supplying very small quantities of artificially propagated specimens, but there are few large cultivated specimens on the market. Both species can reportedly be propagated by cuttings and seeds.

CITES international trade suspensions, export quotas and reservations

There are no current CITES trade suspensions, quotas or reservations in place for these species. See Species + for details.

EU Decisions

There are a number of EU Decisions for these species. See Species + for details.

Zygosicyos tripartitus

Zygosicyos pubescens

Scientific Names and Authors	Date of Listing	Current Listing and Annotation
Zygosicyos pubescens Rowley *(Xerosicyos pubescens* Keraudren) *Zygosicyos tripartitus* Humbert *(Xerosicyos tripartitus* Humbert)	**Appendix II** 23/06/2010 **Annex B** 15/08/2010	**Appendix II** 02/01/17 **Annex B** 04/02/17 **Annotation** There is no annotation, therefore all parts and derivatives, live or dead, are regulated.
Family: Cucurbitaceae		
CITES Standard Reference: There is no standard reference for this genus. The CoP has adopted a standard reference for generic names (*The Plant Book*, 2nd edition, D.J Mabberley, 1997, Cambridge University Press reprinted with corrections 1998). However, the taxonomy of this genus is complex and there are numerous synonyms (older names used instead of the current accepted Latin/scientific name) to note. It is important to check with a botanical or taxonomic specialist for up to date and accurate taxonomy. See Species + for further information.		

● *Zygosicyos tripartitus*

● *Zygosicyos pubescens*

Identification

Techniques

Succulent plants are in trade in a number of different forms: live or dead plants, raw (e.g. blocks of wax) or finished products (cosmetics, health drinks). Prior to identification, collate all the information you have (country of origin, source), check the CITES listing and understand its scope. This may influence the questions you ask and the cost and time involved in identifying the specimen.

Identification to species or genus level: If you have no information on the plant or product it has to be checked against a greater number of reference samples. Check the CITES accepted name is being used and not a synonym; using synonyms may indicate that someone is attempting to disguise the true identity of the plant.

Source/geographical information: Determine the plant's origin and source; CITES listings can be limited to specific populations. It is useful to know whether a plant was wild-collected or artificially propagated. In proving both, extensive reference samples to match the sample against are required.

Age: Knowing the age of a plant can help confirm whether it pre-dates any applicable legislation. **NOTE**: check whether a Party has a stricter interpretation of CITES pre-Convention material (e.g. the EU). See Resolution Conf. 13.6 (Rev. CoP16) for more information on pre-Convention material http://tinyurl.com/ybaq86g2. Some botanical experts may be able to give you a rough indication of the specimen's age using certain characteristics (e.g. size, bark, roots).

Check where the nearest laboratory/institute is that is competent to carry out identification tests; what type of sample should be taken; whether the plant has been so processed that chemical or anatomical identification cannot be carried out; whether verified vouchered samples or comparative reference profiles/databases are in place; what the charges are per sample; what is considered one sample (e.g. one plant or a box of plants); and how long the identification will take.

There are a number of identification techniques available to aid identification of live succulent plants and products:

Visual Identification: where the plant's characteristics (e.g. size, colour, presence of spines, flower or leaf shape) are used to identify the specimen. The characteristics of the flower are an important key to identifying species, and detaining the plants until they flower should be considered along with the timescale and associated costs. Using anatomical features can identify the sample to genus and/or family level and sometimes to species level depending on the level of expertise and availability of validated reference samples. It uses either:

Identification using x10 hand lens

Useful publications on succulents

- **Macroscopic characteristics** – visible to the unaided eye or with the help of x10 power and above hand lens. This type of identification can be carried out in the field and digital photographs can be sent to a botanical expert for an initial identification;
- **Microscopic characteristics** – too small to be seen with the unaided eye or hand lens. A light or electron microscope is required. This is carried out in a laboratory.

Visual aids (CITES user guides/checklists, manuals, databases and books) are also available. They include *CITES and Cacti* and *CITES and Succulents* User Guides (https://tinyurl.com/y99qoxsf). See *REFERENCES AND RESOURCES* for more information. Keep all packaging (e.g. newspapers) and paperwork as evidence as collecting details may be written on them and may indicate the source of the material. Take photographs of information written on the leaves or plant pots as watering can wash this away and pull plants out of the potting material to ensure seed packets are not concealed underneath.

Chemical Identification: there are a number of different techniques available:

- **Mass spectrometry**: analysis of the chemicals synthesised by a plant. This produces a chemical profile which can be matched against reference material/datasets. This method can potentially identify a sample to species/genus level and differentiate between cultivated versus wild material if sufficient reference material and databases are available. Using modern mass spectrometry sampling techniques such as DART (Direct Analysis in Real Time), only minute quantities of plant material are removed from the outside of the sample, enabling testing to be effectively non-destructive with results available in minutes.
- **Genetic identification:** DNA analysis can usually identify a sample to species level, and may allow the determination of provenance if sufficient comparative reference profiles are available. Although well established as a robust identification method, the initial isolation of DNA from many plant products that have been heavily processed can be challenging, limiting the practical applications of DNA identification. DNA is best extracted from living soft tissue, such as leaves, stems or roots. DNA from dried plants is harder to extract unless the material, such as herbarium specimens, was dried quickly. Methods include:

  DNA sequencing (or DNA bar coding): a DNA sequence is generated for a specific gene that is typically characteristic of the taxon or geographic region of origin of the sample. The DNA sequence for an unknown sample can be compared against reference data to allow identification. This method can be used to identify a sample to species, genus and family level and occasionally broad geographic origin.

  DNA profiling (or DNA typing): this method is used to identify genetic differences among biological populations or individuals. DNA profiles can be used to provide a unique identification for plants, or to assign a sample to its population of origin.

Other techniques

Apps and websites: Apps or websites are available to help with the initial identification of succulent plants (https:// tinyurl.com/yatzyadu, https://www.cactiguide.com and https://www.inaturalist.org). Always check the results with a CITES SA or a botanical expert.

Artificially propagated *Euphorbia* sp.

Wild or artificially propagated

It is important to know which species you are dealing with and whether the specimen is wild-collected or artificially propagated. This information will help determine if the trade is sustainable, whether there has been a misdeclaration on the permit, and help inform national and international policy decisions, such as establishing quota levels, international/regional trade suspensions, etc.

Distinguishing between wild and artificially propagated succulent plants is not always an easy task. However, there are a number of key characteristics to look out for when making such a determination. On the whole, artificially propagated plants will be soil-free, clean, pest-free and often of a uniform size. Wild-collected plants are often different sizes, pest damage may be visible, the plant may exhibit damaged roots or leaves where it was collected from the wild and soil or other plants from its native habitat may be present. However, distinctions between plants grown in controlled conditions or not may be less obvious when nurseries grow artificially propagated plants in field conditions or they are damaged in transit. These plants may have all the signs you associate with wild-collected plants.

Artificially propagated succulents

Seized wild-collected succulents

Key characteristics

Leaves: Artificially propagated succulent plants will have more uniform, undamaged and pest free leaves. The leaves will also be in a good condition as the plant has been fed and watered regularly. Wild-collected plants will have damaged leaves that show signs of pest and diseases and other plants, such as native mosses or lichens, may be attached to the leaves.

Leaves of artificially propagated plants

Leaves of wild-collected plants

Roots: The roots of a wild-collected succulent plant are more likely to be damaged or cut, irregular in shape and may have soil from their native habitat around them. The roots of an artificially propagated plant will be unbroken, may be pot bound, more regular in shape and free from habitat soil.

Healthy, pot bound artificially propagated roots

Broken roots on wild-collected plant

Spines: The spines on wild-collected plants may be coarser, more irregular, and are likely to be damaged. The spines of the artificially propagated plants are more likely to be undamaged, less coarse even weak and of a regular shape and size due to care and regular watering/feeding in a controlled environment manipulated by humans.
If in doubt, contact a botanical expert early on in your investigations and remember that expertise may also be available through another Party's CITES SA or botanical institute.

Spines on artificially propagated plant

Damaged spines on wild-collected plant

A number of CITES-listed succulent plants look very similar to each other and distinguishing between them can be difficult. There are a number of key characteristics that can help you with identification:

Euphorbia and cacti

Euphorbia and cacti are often confused with each other. Key identification characteristics include:

- **Sap** – cacti usually have a clear, watery sap. *Euphorbia* will produce a milky white sap, called latex, if the stem or leaves are wounded. Caution should be taken when handling *Euphorbia* as the latex can cause severe irritation.
- **Spines** – in general, cacti have several spines, with some species having none, that often appear in a cluster. Their spines develop from specialised felted discs (areoles) found on the stems, a characteristic unique to cacti. In general, *Euphorbia* have complex or needle-like spines that are found in pairs.
- **Flowers** – cacti flowers can be very showy and reach a large size. *Euphorbia* flowers are less showy, smaller and vary in colour from green to red.

NOTE: Check which *Euphorbia* species the specimen is because while almost all cacti are CITES-listed, only succulent *Euphorbia* are CITES-listed.

White latex produced by *Euphorbia*

Euphorbia flowers

Cacti spines and areoles

Euphorbia spines in pairs

Aloe and *Agave*

Aloe and *Agave* species are very similar in appearance. Key identification characteristics include:

- **Spines** – nearly all *Aloe* and *Agave* species have spines along their leaf margins. However, *Agave* spines are often sturdier with a hard, distinct spine found at the tip of each leaf.
- **Leaves** – this is the most useful characteristic to distinguish the two genera. *Aloe* leaves are soft and fleshy and easily snap in two to reveal a gel-like substance. In contrast, *Agave* leaves are tough and difficult to snap in two due to the many fibres in the leaf. As an *Agave* leaf unfurls an impression of its shape is often left on the newer leaves.
- **Flowers** – both *Aloe* and *Agave* produce distinctive flower spikes. However, *Aloe* flower spikes are usually shorter and the plant does not die after flowering, as happens with *Agave* plants.

NOTE: Check which species of *Aloe* and *Agave* the specimen is as all *Aloe* species are listed in Appendix II/Annex B, with some in Appendix I/Annex A, except for *Aloe vera*, and only two *Agave* species are CITES-listed (*Agave parviflora* in Appendix I/Annex A and *A. victoriae-reginae* in Appendix II/Annex B).

Agave leaf imprints

Aloe prickles and spines

Aloe leaf (L) and fibrous *Agave* leaf (R)

Agave terminal spines

CITES definition of artificially propagated

CITES recognises that there are many issues associated with regulating the international trade in artificially propagated plants, such as reducing the paperwork associated with the exporting large quantities of these plants; ensuring they fit the CITES definition of artificially propagated that is included in Resolution Conf. 11.11 (Rev. CoP17) - *Regulation of trade in plants*; and noting that the Resolution and Convention text were established before many modern developments in plant propagation were in place.

Care should be taken when interpreting and applying the criteria contained in this definition as it may involve assessing diverse elements of the plant's history (e.g. legal origin, propagation status and sustainable collection) and, under CITES, can result in a plant with artificially propagated characteristics being considered wild-collected .

The key elements are:

- *grown in controlled conditions* - plants grown in a non-natural environment intensively manipulated by humans. A traditional nursery or greenhouse or managed tropical shade house can be determined to be 'controlled conditions'. Where plants would not be considered *grown in controlled conditions* would be low level management of an area of natural vegetation where wild specimens of the plants already occur or where wild plants are held in controlled conditions for a period of time before export.
- *cultivated parental stock* - this is the stock from which subsequent plants are propagated. It must have been established in a manner not detrimental to wild species' survival; in accordance with the provisions of CITES and relevant national laws; and managed in a manner which ensures long term maintenance of the cultivated stock. You may encounter plants that are declared at export as artificially propagated. However, because the parental stock from which they originated was illegally collected they cannot be considered as artificially propagated.
- *Plants grown from seeds, cuttings, divisions, callus tissues or other plant tissues, spores or other propagules* – these have to be either exempt from the provisions of the Convention or have been derived from *cultivated parental stock*. Plants grown from cuttings or divisions are considered to be artificially propagated only if the traded specimens do not contain any material collected from the wild, while supplementing parental stock with wild-collected seed is permitted on condition it is sustainable and legal.

Plants meeting these definitions or criteria are considered to be artificially propagated. There are additional criteria laid out in the Resolution for grafted plants, hybrids, cultivars and plant specimens in international trade under exemptions. When applying the CITES definition of artificially propagated work in close co-operation with your CITES MA/SA and gather as much information from the trader to help make a determination. A review of or amendments to the definition may be adopted at each CoP so always check with your CITES authorities or on the CITES website for updates.

Seizure of wild-collected succulents

Smuggled succulent plants

The CITES Nursery Registration System

The commercial trade in wild specimens in CITES Appendix I and Annex A of the EU WTR is effectively prohibited to ensure the survival of the species in the wild. To facilitate the trade in artificially propagated specimens of these species CITES has implemented a registration scheme for nurseries artificially propagating Appendix I/Annex A specimens. The registration procedures are laid out in Resolution Conf. 9.19 (Rev. CoP15) – *Registration of nurseries that artificially propagate specimens of Appendix-I plant species for export purposes*. They include the type of information commercial nurseries should supply when registering and the functions of the CITES MA/SA and the CITES Secretariat in this process. There are no criteria under CITES for the registration of nurseries that propagate Appendix II plants. National CITES authorities may establish registration schemes for Appendix II plants, although the scheme would not be recognised outside that country.

Anyone registering a nursery should apply to its national MA, providing, *inter alia*, information on the nursery (details of the owner and/or manager of the nursery, date of establishment, description of the facilities, propagation techniques); on the species grown (list the Appendix I species/genera propagated in the past and present, description of the parental stock of wild origin, including quantities and evidence of legal acquisition); and on the quantities of specimens to be exported. The MA in consultation with the SA will assess if the nursery is bone fide and if satisfied it will develop a simple procedure for issuing export permits to each registered nursery and regularly inspect them. The MA shall also provide the CITES Secretariat with the above information and the nursery is included in the CITES Register of Appendix I plant nurseries.

If the CITES Secretariat is not satisfied it will make its concerns known to the MA and indicate what needs to be clarified. Any MA or other source may inform the CITES Secretariat of breaches of the requirements for registration. If these concerns are upheld, then following consultation with the MA the nursery may be deleted from the register. Check the current list of registered nurseries through the IMPLEMENTATION / REGISTERS / NURSERIES tabs on the CITES website (https://www.cites.org/eng/common/reg/e_nu.html).

Artificial propagation of *Euphorbia* species

CITES documentation

The basic requirements for export of CITES Appendix II listed taxa is that a valid export permit should be issued by a CITES MA, following the advice of the CITES SA and endorsed in box 14 at the point of export. This is a mandatory requirement. Some countries, such as the member States of the European Union, apply stricter domestic legislation and require import permits in addition to export.

Information on CITES requirements can be found at:

http://www.cites.org/eng/disc/how.php and http://tinyurl.com/yc9z6r52

Information on European Union Wildlife Trade Regulations implementing CITES can be found at:

http://ec.europa.eu/environment/cites/legislation_en.htm

Where an export and import document is required you should check for the following:

1. That the importer and exporter details match.
2. That the country of import and the country of export match.
3. That the issuing CITES MA of export is the same as shown in box 24 of the import permit.
4. That the descriptions of the specimens are the same.
5. That the scientific name is the same on both documents.
6. That the common name is the same on both documents. Note: These may vary as some species have more than one common name.
7. If box 16 of the import permit is completed the export permit referred to must be the one presented.
8. That the CITES Appendix recorded on both documents is the same.
9. The source code may differ, you will need to clarify this with your CITES MA.
10. That the purpose recorded on both permits should be the same.
11. Although the quantity may vary, the Import permit must cover (i.e. be equal to or less than) the amount recorded on the export permit.
12. Box 14/15 of the export permit must be completed at the point of export. Failure to do so may mean the permit is not valid at the point of import.
13. The number of the CITES security stamp if used should be in box 5b.
14. Ensure plants are transported in accordance with IATA rules

NOTE: If there are discrepancies between the permits contact your CITES MA.

Standard CITES form

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA

PERMIT/CERTIFICATE No.
☐ EXPORT
☐ RE-EXPORT
☐ IMPORT
☐ OTHER:

Original

2. Valid until

3. Importer (name and address)

3a. Country of import

4. Exporter/re-exporter (name, address and country)

Signature of the applicant

5. Special conditions

If for live animals, this permit or certificate is valid only if the transport conditions comply with the *IATA Live Animals Regulations*; if for live plants, with the IATA *Perishable Cargo Regulations*; or, in the case of non-air transport, with the *CITES Guidelines for the Non-Air Transport of Live Wild Animals and Plants*

6. Name, address, national seal/stamp and country of Management Authority

5a. Purpose of the transaction (see reverse)

5b. Security stamp no.

	7./8. Scientific name (genus and species) and common name of animal or plant	9. Description of specimens, including identifying marks or numbers (age/sex if live)	10. Appendix no. and source (see reverse)	11. Quantity (including unit)	11a. Total exported/Quota
A	7./8.	9.	10.	11.	11a.
	12. Country of origin * Permit no. Date		12a. Country of last re-export Certificate no. Date		12b. No. of the operation ** or date of acquisition ***
B	7./8.	9.	10.	11.	11a.
	12. Country of origin * Permit no. Date		12a. Country of last re-export Certificate no. Date		12b. No. of the operation ** or date of acquisition ***
C	7./8.	9.	10.	11.	11a.
	12. Country of origin * Permit no. Date		12a. Country of last re-export Certificate no. Date		12b. No. of the operation ** or date of acquisition ***
D	7./8.	9.	10.	11.	11a.
	12. Country of origin * Permit no. Date		12a. Country of last re-export Certificate no. Date		12b. No. of the operation ** or date of acquisition ***

* Country in which the specimens were taken from the wild, bred in captivity or artificially propagated (only in case of re-export)
** Only for specimens of Appendix-I species bred in captivity or artificially propagated for commercial purposes
*** For pre-Convention specimens

13. This permit/certificate is issued by:

Place _____ Date _____ Security stamp, signature and official seal _____

14. Export endorsement:

15. Bill of Lading/Air waybill number:

Block	Quantity
A	
B	
C	
D	

Port of export _____ Date _____ Signature _____ Official stamp and title _____

CITES PERMIT/CERTIFICATE No.

Resolution Conf. 12.3 (Rev. CoP17) – 18

CITES Standard permit/certificate form

Instructions and explanations:

These correspond to the black numbers on the permit/certificate form

2. For export permits and re-export certificates, the date of expiry of the document may not be more than 6 months after the date of issuance (1 year for import permits).

3. **3a) Must** be written in full.

4. The absence of the signature of the applicant may render the permit or certificate invalid. Please check with the issuing CITES MA if this is not completed.

5. Special conditions i.e. national legislation or conditions placed on the shipment by the issuing CITES MA.
5a) Note: The full list of abbreviations can be found on the reverse of the Permit.
5b) CITES Security stamp affixed in Box 13. Some Parties may use security numbers instead of a security stamp in box 13.

6. The name, address and country of the issuing CITES MA should already be printed on the form.

7. e.g. *Aloe ferox*

8. e.g. Cape aloe.

9. Description of the specimen in trade, including any marks e.g. live plants.

10. CITES Appendix listing and source e.g. II, W or Appendix II, Wild.

11. Units should conform to the most recent version of the *Guidelines for the preparation and submission of CITES annual reports*.
11a). The total no. of specimens exported in the current calendar year (1 Jan – 31 Dec) including those covered by the present permit and the current annual quota for the species (e.g. 500/1000).

12. The country in which the specimens were taken from the wild or artificially propagated.
12a) Only to be completed in case of re-export of specimens previously re-exported. Country from which the specimens were re-exported before entering the country in which the present document is issued. Enter the no. of the re-export certificate and its date of issuance. If all or part of the information is not known, this should be justified in Box 5.
12b) No. of the registered artificial propagation operation. "Date of acquisition" only required for pre-Convention specimens.

13. Must be completed by the official who issues the permit. Name must be written in full. Security stamp (if used) must be affixed in this block and must be cancelled by the signature of the issuing official and a stamp or seal.

14. Must be completed by the official who inspects the shipment at the time of export or re-export. Enter the quantities of specimens actually exported or re-exported. Strike out the unused blocks.

15. Bill of Lading/Air way bill number

European Community Standard permit/certificate form

EUROPEAN UNION

1 ORIGINAL 1	1. Exporter/Re-exporter	**PERMIT/CERTIFICATE** ☐ IMPORT ☐ EXPORT ☐ RE-EXPORT ☐ OTHER:	**No** 2. Last day of validity:
	3. Importer	**Convention on International Trade in Endangered Species of Wild Fauna and Flora** 4. Country of (re)-export 5. Country of import	
	6. Authorized location for live specimens of Annex A species	7. Issuing Management Authority	
	8. Description of specimens (incl. marks, sex/date of birth for live animals)	9. Net mass (kg)	10. Quantity
		11. CITES Appendix / 12. EU Annex / 13. Source / 14. Purpose	
		15. Country of origin	
		16. Permit No	17. Date of issue
		18. Country of last re-export	
		19. Certificate No	20. Date of issue
	21. Scientific name of species		
	22. Common name of species		
	23. Special conditions This permit/certificate is only valid if live animals are transported in compliance with the CITES Guidelines for the Transport and Preparation for Shipment of Live Wild Animals or, in the case of air transport, the Live Animals Regulations published by the International Air Transport Association (IATA)		
	24. The (re-)export documentation from the country of (re-)export ☐ has been surrendered to the issuing authority ☐ has to be surrendered to the border customs office of introduction	25. The ☐ importation ☐ exportation ☐ re-exportation of the goods described above is hereby permitted. Signature and official stamp: Name of issuing official: Place and date of issue:	
	26. Bill of Lading / Air Waybill Number:		
	27. For customs use only Quantity / net mass (kg) actually imported or (re)-exported / Number of animals dead on arrival	Signature and official stamp: Customs document Type: Number: Date:	

European Community Standard permit/certificate form

Instructions and explanations:

These correspond to the black numbers on the permit/certificate form

1. Name and address of person, persons, or company exporting the shipment.

2. Permit expiry date.

3. Name and address of person, persons, or company receiving the shipment.

4. Country arriving from e.g. South Africa.

5. Country entering into e.g. the UK.

6. Location for live wild-taken specimens of Annex A species.

7. Address of CITES MA.

8. Whether the specimen is a live plant, a part or derivative – including any specific labels or markings.

9. Net mass

10. Quantity.

11. CITES Appendix.

12. EC Annex listing.

13. The source of the specimen, e.g. W (wild) – this specimen comes from a wild non-regulated environment. The full list of abbreviations to be used can be found on the reverse of the Permit.

14. What the specimen(s) is/are to be used for. For example, T (Commercial) – may be sold for commercial purposes, P (personal use) – only for own use. The full list of abbreviations can be found on the reverse of the Permit.

15. Where the specimen was removed from its natural environment

16. If completed on the import permit, the export permit referred to in this box MUST be the permit presented.

17. Date of issue of the permit in Box 16.

18. Country of last re-export if different to box 15 that is the country the specimens were re-exported before entering the country in which the present document was issued. Including the (19) Permit number for the movement and (20) the Permit date of issue.

19. Permit number for the movement, and

20. The permit date of issue.

21. Latin/scientific name e.g. *Aloe ferox*

22. e.g. Cape aloe

23. Any special conditions imposed by the exporting country.

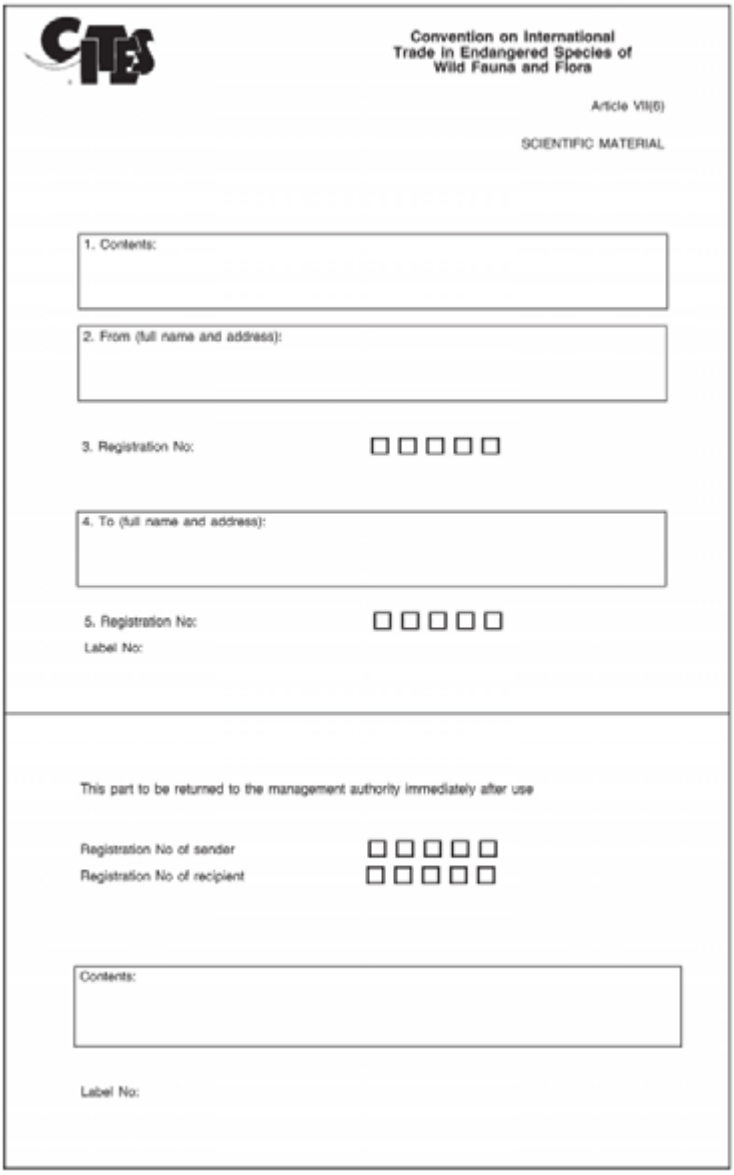
24. (Re)export documentation from country of (re)export. NB Not all EU member States complete Box 24.

25. Must be completed by the official who inspects the shipment at the time of export or re-export. Enter the quantities of specimens actually exported or re-exported. Strike out the unused blocks.

26. Bill of Lading/Air way bill number.

27. Export/ re-export/ import endorsement must be completed by the officer inspecting the documents on export/ import/ re-export.

European Community
Standard form for non-commercial exchange by scientific institutions



Convention on International Trade in Endangered Species of Wild Fauna and Flora

Article VII(6)

SCIENTIFIC MATERIAL

1. Contents:

2. From (full name and address):

3. Registration No: ☐☐☐☐☐

4. To (full name and address):

5. Registration No: ☐☐☐☐☐

Label No:

This part to be returned to the management authority immediately after use

Registration No of sender ☐☐☐☐☐

Registration No of recipient ☐☐☐☐☐

Contents:

Label No:

There is an exemption from the provisions regulating trade in CITES species that facilitates the loan, donation and exchange of scientific material for non-commercial purposes between scientific institutes. This may include specimens of CITES-listed succulent species.

The form shown is a standard label used by EU registered institutes when they exchange scientific material (see Annex VI https://tinyurl.com/ybfveolr). No CITES standard form exists, so non-EU institutes may prepare their own labels. These may differ slightly in their layout.

This label can be used instead of a CITES permit for live or dead plant material, but only between registered institutes. For a list of registered institutes check the CITES website https://www.cites.org/eng/common/reg/e_si.html.
Once registered an institute is given a unique 5-digit registration number. For example, the National Museums of Kenya is KE 001.

For more information on the criteria an institute must meet to be eligible for this scheme, what information must be displayed on the label and how they can register with their MA see Resolution Conf. 11.15 (Rev. CoP12) (https://www.cites.org/eng/res/11/11-15R12.php), Article 7(4) of Council Regulation 338/97 (https://tinyurl.com/y9edpe3y) and Article 52 of Commission Regulation (EC) No 865/2006 (https://tinyurl.com/y76lju8k).

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SPECIES

Aloe

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EU Commission. Contact: The European Commission's DG-Environment (Wildlife trade /CITES) env-cites@ec.europa.eu

European Union (EU) national agencies concerned with CITES and wildlife trade http://tinyurl.com/outnq6h

EU-TWIX. Contact: Vinciane Sacré vinciane.sacre@traffic.org

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Royal Botanic Gardens, Kew. www.kew.org

Swedish Environmental Protection Agency. www.naturvardsverket.se and www.swedishepa.se

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UNEP-WCMC (Species +) http://www.unep-wcmc.org/ and https://www.speciesplus.net/

Glossary

Basal rosette	An arrangement of clustered leaves radiating from a short **stem** at the ground surface.
Brachyblast	A short shoot or branch from which leaves or spines originate.
Bract	A modified leaf, often showy and brightly coloured (may resemble a petal). An inflorescence or a flower may grow from its axil (the angle between the leaf stalk/branch and stem).
Cataphyll	Reduced, small leaves that may be modified to perform specialised functions such as protecting young shoots. Found on *Tillandsia* species
Caudex	The main stem of a plant. With succulent plants these can be swollen and found either above or under the ground (plural: caudices).
Caudiciform	Succulent plants with thickened woody stems or roots, found above or below the ground.
Corolla	Part of the flower made up of separate or fused petals.
Cultivar	A plant variety selected under cultivation.
Epiphyte	A plant which grows on another plant or object for support.
Grafted	Horticultural technique whereby plant tissues (e.g. upper stem minus roots and a lower stem with roots) are joined together, usually to enhance the overall growth and vigour of the plant. The upper plant is called the scion while the lower part is called the rootstock.
Hybrid	The offspring of cross pollination between two different varieties, species or genera of plants.
Inflorescence	A group or cluster of flowers arranged on a stem that may be composed of a main branch or of differing arrangements of branches.
Keel	A central longitudinal ridge on a leaf.
Offset	A lateral shoot that grows from the mother plant giving rise to a new genetically identical plant.
Pachycaul	A plant with a disproportionally thick stem, often bottle-shaped, with few or no branches.
Perennial	A plant that has a life cycle of more than one growing season. The term is used to differentiate perennials from shorter living plants, such as annuals and biennials.
Prickles	A sharp outgrowth derived from the bark or plant epidermis (cells that cover a plant).
Raceme	An unbranched inflorescence bearing flowers on short stalks at equal distances along its length.
Recurved	Bending backwards
Rootstock	A rootstock is part of a plant, often an underground part, from which new above-ground growth can be produced.
Rosette	A leaf arrangement where the gaps between the leaves on a stem are reduced. This leads to a circular arrangement of tightly clustered leaves that are at a similar height.
Spines	A sharp pointed structure that is a modified leaf or stipule.
Stipule	Refers to outgrowths borne on either side (sometimes just one side) of the base of a leafstalk.
Succulent	A plant possessing at least one succulent tissue. A succulent tissue is a living tissue that serves and guarantees at least temporary storage of usable water.
Synonym	A **scientific name** (e.g. *Calibanus hookeri*) that applies to a **taxon** that (now) goes by a different accepted scientific name (*Beaucarnea hookeri*)
Tissue cultured	Multiplication of plants using plant **tissues** or cells that are grown on a medium (liquid, semi-solid, or solid growth medium, such as broth or agar jelly) in sterile containers under sterile conditions. This method is also known as micropropagation.
Trichomes	Tiny scales on the leaves that absorb water from the atmosphere. Found on *Tillandsia* species.
Vascular bundle	Different types of plant tissue that are combined together to transport water and nutrients around a plant.
Xerophytic	Plant adapted to grow in dry conditions.

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Euphorbia crispa

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This guide covers the main succulent species, other than cacti, regulated by the Convention on International Trade in Endangered Species (CITES). It provides information on the implementation of the Convention for these species with details on their distribution, uses, traded parts and derivatives, and scientific names. It is written for the non-expert and additional sections cover identification, guidance on CITES documentation and key resources.

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