

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



Fifteenth meeting of the Plants Committee
Geneva (Switzerland), 17-21 May 2005

ANNOTATIONS FOR MEDICINAL PLANTS INCLUDED IN APPENDIX II

1. This document has been prepared by the IUCN/SSC Medicinal Plant Special Group upon request by the CITES Secretariat.

Background

2. At its 12th meeting (CoP12, Santiago, 2002), the Conference of the Parties decided that: "The Plants Committee shall consider the Annotations in Appendices I and II relating to species of plants used for medicinal purposes and shall make recommendations to clarify the Annotations, for consideration at the 13th meeting of the Conference of the Parties" [Decision 11.118 (Rev. CoP12)].
3. Document PC14 Inf. 3 was prepared by the IUCN/SSC Medicinal Plant Specialist Group under its MoU with the Secretariat and was approved at the 14th meeting of the Plants Committee in 2004. The report of the Plants Committee, document CoP13 Doc. 58, was approved at the 13th meeting of the Conference of the Parties (CoP13, Bangkok, 2004).

CoP13 Decisions

4. At CoP13, the Parties adopted Decisions 13.50 to 13.53 regarding medicinal plants the #-annotations issue as follows:

Directed to the Plants Committee

Dec. 13.50 The Plants Committee shall prepare amendments to annotations for medicinal plants included in Appendix II that adequately reflect the current commodities in international trade and their relative impact on the wild populations in range States.

Dec. 13.51 The amended annotations shall focus on those commodities that first appear in international trade as exports from range States and on those that dominate the trade and the demand for the wild resource.

Dec. 13.52 The Plants Committee shall draft proposals to amend the Appendices in this respect for the Depositary Government to present for consideration at the 14th meeting of the Conference of the Parties.

Directed to the Secretariat

Dec. 13.53 Subject to the availability of external funding, the Secretariat shall prepare a glossary with definitions and training materials that illustrate the content of the amended annotations, the terms used and their practical application during enforcement and controls.

Current situation

5. From 1975 until CoP12, about 20 species had been included in Appendix I or II specifically because of their over-exploitation for medicinal purposes. Other medicinal species are included in Appendix II through the listing of whole genera and families (such as: *Aloe ferox* through *Aloe* spp. or *Dendrobium nobile* through Orchidaceae spp.).
6. At CoP13, a number of new medicinal plant taxa were included in Appendix II: *Aquilaria* spp. and *Gyrinops* spp. because of the agarwood trade (ca. 24 species), *Hoodia* spp. (ca. 14 species) and four additional Asian *Taxus* species. Table 1 includes both the species selected for the annotations review (see document PC 14 Inf. 3) and the CoP13 listings.
7. Also at CoP13, a proposal to change an existing annotation was approved: *Taxus wallichiana* now has a newly created annotation #10 together with the other *Taxus* species (Table 1 part b). Additionally *Cistanche deserticola* was annotated with #1 at CoP13, (Table 1 part a).

Commodities and their relevance

8. The trade in medicinal plants consists of a large variety of commodities which range from raw plant material such as root or bark to processed drugs such as extracts or even finished pharmaceutical products ready to be sold. The analysis of existing CITES Annual Report data for the medicinal species provides an overview which commodities dominate the trade and which are only marginal (Table 4 in document PC14 Inf. 3).
9. For many species, the official CITES data are not sufficient to identify the quantitative role and relevance of commodities in trade. The assessments and conclusions below are based on additional species specific information, e.g. from reviews on *Guaiaacum* and *Hydrastis* carried out by S. Oldfield¹ or from the current review on several other CITES medicinal species carried out by TRAFFIC International.
10. Species in Table 1 part a all carry the #1 or the #8 annotation. For these species, all relevant medicinal parts and derivatives are under CITES control, including finished pharmaceutical products. It is questionable whether this broad concept is in accordance with the guiding principle in Decision 13.51. Annotations #1 and #8 could be amended by an exemption for "finished pharmaceutical products", similar to Annotation #10.
11. ***Taxus chinensis*, *T. fuana*, *T. cuspidata*, *T. sumatrana*, and *T. wallichiana*** (#10): The chemical derivative or extract (e.g. crude, semi-purified and active pharmaceutical ingredient) is the commodity actually exported in *Taxus* species, rather than plant biomass. However, CoP11 in 2000 exempted "chemical derivatives and finished pharmaceutical products" from CITES controls. In 2004, at CoP13, this situation was greatly improved: The new annotation #10 includes all parts and derivatives but excludes finished pharmaceutical products.
12. ***Adonis vernalis*** (#2): Trade is mainly in the dried, whole or cut herb, sometimes also in the powdered herb. With annotation #2, the relevant trade is covered by CITES controls. Annotation #10 would serve the same purpose.

¹ Oldfield, S. (2005): Analysis of trade in parts and derivatives *Hydrastis canadensis* from Canada and the US. - 7 pp., Unpublished report for IUCN MPSG.
Oldfield, S. (2005): Analysis of trade in parts and derivatives *Guaiaacum* species from Mexico. - 5 pp., Unpublished report for IUCN MPSG.

13. *Guaiacum* spp. (#2): Mainly timber and pieces of heartwood are in trade. The products of *Guaiacum* advertised in trade, e.g. on the Internet and company brochures, include wood, bark, resin powder, fluid extract and tinctures. To what extent the non-timber commodities figure in trade remains unclear. Germany annually imports up to 40 tons of heartwood resin and wood chips as aromatic substances for use in the liqueur industry. *G. coulteri* is also imported by the United States of America to be used in diagnostic kits for detecting hidden gastrointestinal bleeding. Resin of the heartwood of *G. coulteri* is used in these kits. Verification of the nature of the international trade in *Guaiacum* medicinal products has proved to be very difficult. It remains unclear where the processing of medicinal products takes place and which commodities constitute the international trade beyond timber.

With Annotation #2, the trade in resin and oil is excluded from CITES controls. It has been suggested that the regulation of commodities such as oils and resins should be considered as there is apparently some demand for these in international market (P. Davila, Scientific Authority MX, pers. comm. 26.3.2004). Annotation #10 can be used to this end.

14. *Podophyllum hexandrum* (#2): Very little trade information in CITES annual reports. This species is currently under review in the Review of Significant Trade.
15. *Rauvolfia serpentina* (#2): The plant part used and traded is the dried root. As a consequence of the ban on the export of raw material in some range States, export of alkaloids extracted from the roots increased. The few trade records in the CITES annual reports for 1990-1997 are for 'derivatives' mainly, although they were always exempt from CITES controls. Present international trade in *Rauvolfia serpentina*, although lower than in earlier decades, is still significant. It does largely take place in the form of extract, with India and Thailand being the main suppliers. All this is not adequately reflected by CITES monitoring owing to the exemption of 'chemical derivatives' under Annotation #2. Annotation #10 can be used to improve this situation.
16. *Hydrastis canadensis* (#3): According to CITES trade data, the majority of golden seal material reported in international trade, is 'roots'. This reflects the plant parts for which CITES licensing and reporting is required based on Annotation #3. In addition to whole, sliced and dried roots, powdered root is also in international trade but it is difficult to ascertain the quantity or the relative proportion that is traded in this form. Based on trader information it is thought that the primary forms in trade (in order of quantity) are powder, dry root, fresh root, live plants, leaves, seeds and fruit.

With annotation #3, powder and extract are excluded from CITES controls. It is reported that golden seal may on occasion be deliberately powdered prior to export to avoid CITES paperwork. It may be appropriate to modify the annotation to include powdered root as this appears to be a significant product in international trade as well as a commodity that first appears in international trade as an export from range States. Annotation #10 can be used for this purpose.

17. *Nardostachys grandiflora* (#3): The main commodities in international trade are unprocessed rhizomes, with smaller amounts of trade in processed products such as oil. Quantitative information on trade volumes is limited, as much of the trade is apparently unregulated and/or occurring outside established trade controls, and therefore undocumented.

With annotation #3, CITES permits are only requested for the trade in whole and sliced or parts of 'roots'. Therefore, oil and powder are excluded from CITES controls. In recent years, the technology to produce essential oils was introduced in Nepal, which has led to an increased local production of and trade in "Jatamansi oil". Annotation #10 can be used to bring this part of the trade under CITES controls as this appears to be a significant product as well as a commodity that first appears in international trade as an export from range States.

18. *Panax ginseng*, *P. quinquefolius* (#3): Mainly dried, whole roots are in trade, and to some extent also powdered roots and fresh roots. This spectrum of trade commodities is adequately covered by annotation #3. Annotation #10 would serve the same purpose.
19. *Picrorhiza kurrooa* (#3): The main trade commodity is the unprocessed rhizome, with smaller amounts of trade in processed products such as oil. Quantitative information on trade volumes is limited, as much of the trade is apparently unregulated and therefore undocumented. With annotation #3, extract and oil are excluded from CITES controls. Given that the vast majority of

international trade appears to involve unprocessed rhizomes, the current annotation seems generally appropriate. Annotation #10 would serve the same purpose.

The trade name for *Picrorhiza kurroa* is 'kutki' which is usually a mixture of *Picrorhiza kurroa* and *Neopicrorhiza scrophulariiflora* (Pennell) D.Y. Hong (syn. *P. scrophulariiflora* Pennell). The latter is not covered by CITES. As the rhizomes of the two species are morphologically similar and used for similar purposes, they are not distinguished in trade and an effective implementation of CITES for *P. kurroa* is therefore difficult.

20. *Pterocarpus santalinus* (#7): This tree species is in demand outside of India as a high quality timber, a source of dyes and, less importantly, for other uses such as incense. The colourant is extracted from the heartwood, which is first reduced to chips or powder and the colourant then extracted. The international trade of *Pterocarpus santalinus* involves many tens if not hundreds of tonnes of wood, wood chips and powder each year. Legal export of wild-sourced material is limited to value-added products, i.e. other than timber. It has been imported into Germany in the form of powder or as an extract (oleoresin).

With the exception of seizures of timber, CITES implementation for trade in the species appears to be non-existent. However, even if the current listing was implemented, the exclusion of extracts in accordance with annotation #7 would mean that a significant proportion of the trade, that in powder, would be outside of CITES trade controls. Annotation #10 can be used to incorporate extract trade in CITES controls as this appears to be a significant commodity which appears in international trade as an export from the range State.

21. *Hoodia* spp. (#9): Under annotation #9 all trade commodities are under CITES control, including finished pharmaceutical products, excluding material from specified and approved operations. The implications of this very recent annotations should be monitored.

Proposed amendments

22. Decision 13.50 calls for annotations which adequately reflect the major commodities in trade. The current review has shown that precise data on the amount and relevance of the different trade commodities for the array of CITES medicinal plant species do not exist. Therefore it will be impossible to tailor species-specific annotations.
23. The best way to improve the annotations is therefore to use annotation #10 in all cases where appropriate. This would have the following advantages:
- Annotations #2, #3 and #7 would be replaced by #10, thereby reducing the overall number of annotations.
 - All annotations concerning medicinal plants, including #1 and #8, would follow a single and generic approach: all stages of processing are included in CITES controls except the finished pharmaceutical products, that is the packaged medicine in wholesale or retail trade.
 - All ambiguous terms currently used in the annotations, especially in #3, would be obsolete and only the term 'finished pharmaceutical products' needs to be defined.

Recommendations

24. The Plants Committee is asked to discuss and decide upon the following recommendations:
- It is recommended to amend Annotations #1 and #8 with the exemption of 'd) finished pharmaceutical products'.
 - It is recommended to annotate *Adonis vernalis*, *Guaiacum* spp., *Podophyllum hexandrum*, *Rauvolfia serpentina*, *Hydrastis canadensis*, *Nardostachys grandiflora*, *Panax ginseng*, *P. quinquefolius*, *Picrorhiza kurroa*, and *Pterocarpus santalinus* with #10.

Table 1: Major medicinal plant species in the CITES Appendices

| (a) Annotated with #1 and #8 | | | | |
|---|---|-------------|---------------|---------------------------|
| Family | Taxon | App. | Annot. | Entry into force |
| Dicksoniaceae | <i>Cibotium barometz</i> | II | #1 | 04.02.1977 |
| Dioscoreaceae | <i>Dioscorea deltoidea</i> | II | #1 | 01.07.1975 |
| Droseraceae | <i>Dionaea muscipula</i> | II | #1 | 11.06.1992 |
| Euphorbiaceae | <i>Euphorbia antisiphilitica</i> | II | #1 | 01.07.1975 |
| Liliaceae | <i>Aloe ferox</i> | II | #1 | 01.07.1975 |
| Orobanchaceae | <i>Cistanche deserticola</i> | II | #1 | 19.07.2000 |
| Rosaceae | <i>Prunus africana</i> | II | #1 | 16.02.1995 |
| Thymelaeaceae | <i>Aquilaria malaccensis</i> | II | #1 | 16.02.1995 |
| | <i>Aquilaria</i> spp., <i>Gyrinops</i> spp. | II | #1 | 12.01.2005 |
| Orchidaceae | <i>Bletilla striata</i> | II | #8 | 01.07.1975 |
| | <i>Dendrobium nobile</i> | II | #8 | 01.07.1975 |
| | <i>Gastrodia elata</i> | II | #8 | 01.07.1975 |
| (b) Annotated with #2, #3, #7 and #9 | | | | |
| Family | Taxon | App. | Annot. | Entry into force |
| Berberidaceae | <i>Podophyllum hexandrum</i> | II | #2 | 18.01.1990 |
| Apocynaceae | <i>Rauvolfia serpentina</i> | II | #2 | 18.01.1990 |
| Ranunculaceae | <i>Adonis vernalis</i> | II | #2 | 19.07.2000 |
| Zygophyllaceae | <i>Guaiacum coulteri</i> | II | #2 | 13.02.2003 |
| | <i>Guaiacum officinale</i> | II | #2 | 11.06.1992 |
| | <i>Guaiacum sanctum</i> | II | #2 | 01.07.1975 |
| Araliaceae | <i>Panax ginseng</i> | II | #3 | 19.07.2000 |
| | <i>Panax quinquefolius</i> | II | #3 | 01.07.1975 |
| Ranunculaceae | <i>Hydrastis canadensis</i> | II | #3 | 18.09.1997 |
| Scrophulariaceae | <i>Picrorhiza kurrooa</i> | II | #3 | 18.09.1997 |
| Valerianaceae | <i>Nardostachys grandiflora</i> | II | #3 | 18.09.1997 |
| Leguminosae | <i>Pterocarpus santalinus</i> | II | #7 | 16.02.1995 |
| Apocynaceae | <i>Hoodia</i> spp. | II | #9 | 12.01.2005 |
| Taxaceae | <i>Taxus wallichiana</i> | II | #10 | 16.02.1995 |
| | <i>Taxus chinensis</i> , <i>T. fuana</i> , <i>T. cuspidata</i> , <i>T. sumatrana</i> | II | #10 | 12.01.2005 |
| Compositae | <i>Saussurea costus</i> | I | | 01.08.1985 ^(a) |
| Sources: | | | | |
| Annotations | www.cites.org, viewed 25.2.2005 | | | |
| Entry into force | UNEP-WCMC (2003): Annotated Cites Appendices and Reservations | | | |
| (a) <i>Saussurea costus</i> (Syn.: <i>S. lappa</i>) was included in App. II on 1.7.1975 with Annotation "Designates root". | | | | |

Table 2: Currently valid #-annotations after CoP13

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| <p>"In accordance with Article I, paragraph (b), sub-paragraph (iii), of the Convention, the symbol (#) followed by a number placed against the name of a species or higher taxon included in Appendix II or III designates parts or derivatives which are specified in relation thereto for the purposes of the Conventions as follows:"</p> | |
| #1 | <p>Designates all parts and derivatives, except:</p> <ul style="list-style-type: none"> a) seeds, spores and pollen (including pollinia); b) seedling or tissue cultures obtained <i>in vitro</i>, in solid or liquid media, transported in sterile containers; and c) cut flowers of artificially propagated plants. |
| #2 | <p>Designates all parts and derivatives, except:</p> <ul style="list-style-type: none"> a) seeds and pollen; b) seedling or tissue cultures obtained <i>in vitro</i>, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; and d) chemical derivatives and finished pharmaceutical products. |
| #3 | <p>Designates whole and sliced roots and parts of roots, excluding manufactured parts or derivatives such as powders, pills, extracts, tonics, teas and confectionery.</p> |
| #4 | <p>Designates all parts and derivatives, except:</p> <ul style="list-style-type: none"> a) seeds, except those from Mexican cacti originating in Mexico, and pollen; b) seedling or tissue cultures obtained <i>in vitro</i>, 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; and e) separate stem joints (pads) and parts and derivatives thereof of naturalized or artificially propagated plants of the genus <i>Opuntia</i> subgenus <i>Opuntia</i>. |
| #5 | <p>Designates logs, sawn wood and veneer sheets.</p> |
| #6 | <p>Designates logs, sawn wood, veneer sheets and plywood.</p> |
| #7 | <p>Designates logs, wood-chips and unprocessed broken material.</p> |
| #8 | <p>Designates all parts and derivatives, except:</p> <ul style="list-style-type: none"> a) seeds and pollen (including pollinia); b) seedling or tissue cultures obtained <i>in vitro</i>, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants; and d) fruits and parts and derivatives thereof of artificially propagated plants of the genus <i>Vanilla</i>. |
| #9 | <p>Designates all parts and derivatives except those bearing a label "Produced from <i>Hoodia</i> spp. material obtained through controlled harvesting and production in collaboration with the CITES Management Authorities of Botswana / Namibia / South Africa under agreement no. BW/NA/ZA xxxxxx".</p> |
| #10 | <p>Designates all parts and derivatives except:</p> <ul style="list-style-type: none"> a) seeds and pollen; and b) finished pharmaceutical products. |
| <p>Source: www.cites.org, viewed 25.2.2005; In bold = terms used to describe medicinal plant trade commodities</p> | |