

Proposal: To delete annotation to the listing of *Aquilaria* spp. and *Gyrinops* spp. in Appendix II, and replace it with a new annotation with new number as follows:

All parts and derivatives, except:

a) seeds and pollen;

b) seedling or tissue cultures obtained *in vitro*, in solid or liquid media, transported in sterile containers;

c) fruits;

d) leaves;

e) mixed oil containing less than 15% of agarwood oil, attached with labels of following words

"Mixed oil containing xx% of agarwood obtained through controlled harvesting and production in collaboration with the CITES Management Authorities of XX (name of the export state) ";

samples of the labels and list of relevant exporters should be communicated to the Secretariat by export states and then inform all parties through a notification;

f) exhausted agarwood powder, including compressed powder in all shapes;

g) finished products packaged and ready for retail trade, this exemption does not apply to beads, prayer beads and carvings.

Proponent: China, Kuwait, Indonesia

Summary: *Aquilaria* and *Gyrinops* are two genera of trees in the family Thymelaeaceae, the former with 15 generally recognised species, the latter with eight, distributed from India to New Guinea. In some trees, a still imprecisely understood combination of wounding, vectors of infection (bacterial infection, fungus) and resinous response induces the formation of a resinous heartwood (agarwood) that is fragrant and highly valued. The primary source of agarwood in reported trade is *Aquilaria malaccensis*. Agarwood is used in perfumes, incense and traditional medicines, and as an essential oil, distilled from the wood. Carvings and beads, including prayer beads, are also produced from the wood. So-called exhausted wood powder – the residue left after the distillation process – is often compressed to make incense sticks and small statues.

All agarwood-producing taxa are currently included in Appendix II; *Aquilaria malaccensis* was listed in 1994, and the rest of the genus *Aquilaria* and *Gyrinops* spp. in 2004. The two genera are currently covered by annotation #4, the relevant parts of which are: "All parts and derivatives, except: a) seeds, spores and pollen (including pollinia); b) seedling or tissue cultures obtained *in vitro*, in solid or liquid media, transported in sterile containers; c) cut flowers of artificially propagated plants".

International agarwood trade is complex, as it is traded in a variety of forms and at various stages of processing, from raw whole pieces to finished products such as perfumes, which may contain only small amounts of agarwood oil. Some processing of agarwood to produce end-products takes place in range States; some takes place elsewhere with resulting products, either sold domestically or re-exported to other consumer countries.

Of the main products in trade, large whole pieces of wood may be traded for further processing or for sale as prestige items; wood chips are traded for burning as 'incense wood', or for further processing; un-exhausted powder is generally a by-product of carving or wood chip production and is traded for further processing; exhausted powder is also traded for further processing; oil may be traded in pure form or in various concentrations for further processing; the various end-products listed above (carvings, beads and prayer beads, medicines, incense sticks, perfumes, tea etc.) are also traded.

At present all these parts and derivatives are covered by the Appendix-II listing.

According to the CITES trade database the key *Aquilaria* commodities originating from the wild reported in export have been wood chips and powder. Wild-origin timber and pieces are also reported as exported in fairly high quantities. Some wild origin oil has been exported, with quantities of oil reported as exports by range States recently showing an upward trend. *Gyrinops* species are recorded in trade in much lower quantities than *Aquilaria*; wood chips are the main commodity reported in trade.

The proponents seek to adopt a new annotation that will apply only to *Aquilaria* spp. and *Gyrinops* spp.. The relevant differences between the proposed annotation and existing annotation #4 are the **exemption of**: fruits; leaves; mixed oil containing less than 15% of agarwood oil (labelled as indicated); exhausted agarwood powder, including compressed powder in all shapes; finished products packaged and ready for retail trade, except for beads, prayer beads and carvings.

Two of the proponents of the present proposal (Indonesia and Kuwait) have also proposed an amendment to *Resolution Conf. 13.7 (Rev. CoP14)* on control in trade of personal and household effects (see document CoP16 Doc. 47) to exempt the following when they are deemed personal or household effects: - Specimens of agarwood – up to 1 kg woodchips, 60 ml oil, and two pieces of beads, (or prayer beads, necklaces, bracelets) per person.

Analyses: Under *Resolution Conf. 11.21 (Rev. CoP15)* regarding Use of Annotations in Appendices I and II, the Parties recommended that two main principles be followed as standard guidance when drafting future annotations for medicinal plants:

- i) controls should concentrate on those commodities that first appear in international trade as exports from range States; these may range from crude to processed material; and
- ii) controls should include only those commodities that dominate the trade and the demand for the wild resource.

The essential questions are whether any of the products proposed for exemption in the current proposal meet the above criteria or not, and if not whether exempting them would create implementation problems for regulation of the other products in trade that do meet these criteria.

Leaves and fruits are a minor part of the trade, and can be non-destructively harvested. It would appear that exempting these from CITES controls will not cause conservation, implementation or enforcement problems.

Oils: Because current CITES reporting does not indicate the percentage purity of oils in trade, it is not possible to determine what proportion of the reported export trade in agarwood oil from range States at present is accounted for by oils less than 15% purity. From an understanding of the trade dynamics it can be inferred that oil at less than 15% concentration is likely to be relatively small and that it is therefore not a product that dominates the initial export trade or the demand for the wild resource. It also seems likely that products containing less than 15% agarwood oil are likely to be finished products packaged for the retail trade, which would in any case be exempted under proposed paragraph g).

It is not clear how easy it would be to distinguish oils of less than 15% purity from more concentrated or pure oils. Realistically, for mixed oils this would have to be based on labelling. The proposal is for a form of labelling similar to that currently used for *Hoodia* spp. (see proposal CoP16 Prop. 52) to distinguish the two. This labelling is not known to have been used in practice, at least in part because the commercial demand for *Hoodia* extract has not materialised to the extent anticipated when the taxon was listed in 2004. It is not clear from the present agarwood proposal whether this labelling is intended to apply to all agarwood mixed-oil products in trade, or only those exported by range States. It is assumed that labelling of this form would not be expected to apply to finished products composed of or containing mixed-oils, as these would be exempted under paragraph g) for which no such labelling is specified.

Powder: A substantial amount of reported export from range States of agarwood has been in the form of powder. These quantities are likely to include un-exhausted powder (i.e. not a byproduct of any distillation process), which would not be exempt from Appendix-II controls. It is not clear how easy the two forms might be to distinguish, although the proponents state that there are consistent differences between the two forms. Exhausted powder is clearly not a product that dominates the demand for the wild resource and is unlikely to dominate the trade, although because at present different kinds of powder are not distinguished in the CITES trade database, it is not possible to determine what proportion of the powder reported in trade is exhausted.

Finished products The kinds of finished products that would be included in the exemption are not specified. The proponent notes in the supporting statement that the exemption does not apply *inter alia* to patent medicines; however the proposal would exclude “g) finished products packaged and ready for retail trade” and does not mention not exempting patent medicines, which would presumably be considered to be “finished products”.

Background information

Table: All trade in key *Aquilaria* commodities as reported by exporter (excluding re-exports) 1995 onwards.

Aquilaria species	Commodity	Source	Quantity	Unit
	Chips	Wild	7255770	kg
	Chips	Art Prop	410197	kg
	Timber/timber pieces/sawn wood/logs	Wild	323994	kg
	Timber/timber pieces/sawn wood/logs	Wild	300	CUM
	Timber/timber pieces/sawn wood/logs	Art Prop	50424	kg
	Powder	Wild	1353756	kg
	Powder	Art Prop	176188	kg
	Oil	Wild	1307	kg
	Oil	Wild	1269	litres
	Oil	Art Prop	6010	kg
	Oil	Art Prop	46.4	litres
	Derivative/extract	Wild	1030	kg
	Derivative/extract	Art Prop	1852	kg

Table: *Aquilaria* wood equivalent calculations for oil and derivative/extract reported as exports (excluding re-exports), 1995 onwards.

Commodity	Source	Quantity	Unit	Pure Oil wood equivalent (kg) *	15% oil wood equivalent
Oil	Wild	1307	kg	188208	28231
Oil	Wild	1269	litres	182736	27410
Oil	Art	6010	kg	865440	129816
Oil	Prop	46.4	litres	6682	1002
Derivative/extract	Art	1030	kg	148320	22248
Derivative/extract	Wild	1852	kg	266688	40003

Antonopoulou *et al.* (2010) suggest a conversion rate of 1kg or 1 litre of pure oil requiring 144 kg* of wood. This would equate to nearly 520 000 kg additional wood (chips) to produce the amount of wild sourced oil and derivatives reported in the table above, assuming all shipments are of pure oil. If all shipments were of oil less than 15%, this would equate to a maximum of around 80 000 kg of wood.

Notable amounts of oil (and extract) have been reported as re-exported (Wild: 15 280 kg and 1044 litres; Artificially Propagated 206 kg) which are significantly higher than quantities reported as exports. These figures lend support to observations (Compton *in litt.*, 2012) that significant volumes of oil extraction are carried out in end-processing markets, such as the Middle East.

CoP16 Inf. 3 notes that “powder” can be in two forms:

Not exhausted Sawdust & Powder - Fine Agarwood substance obtained mostly as by product while working on Agarwood chips or grounded/fine Agarwood. Usually dark in colour with odour.

Exhausted Powder - The residual Agarwood powder which has been distilled to obtain Agarwood oil and does not contain any essential oil. Usually pale with little odour.

Exhausted powder is often traded as a secondary product for use in forming incense sticks. For high quality end-products, merchants prefer to grind wood chips to make their own powder, so that they can be sure of its purity, rather than importing possibly adulterated supplies from source country or middlemen traders (Compton *in litt.*, 2012).

A TRAFFIC report on agarwood trade in Malaysia estimates that the oil extraction process produces approximately 7 kg of exhausted powder from 15 kg chips (Lim and Awang Anak, 2010). If all the powder reported as exported in CITES trade data were ‘exhausted powder’ this would have been the equivalent of around 3 million kg of chips, using this calculation. This is far in excess of the amount of powder that would have been produced as exhausted powder from the quantities of oil from wild sources. It would therefore appear that all powder exported is not “exhausted”. The proposal only seeks to exclude exhausted powder, which is said to be distinguished from non-exhausted powder by its pale colour and little odour.

Of the 968 kg of carvings exported all but 50 kg exported by Indonesia as wild sourced were reported from Viet Nam declared as artificial propagated. Broad *in litt.* (2012) notes that there is a market in Asia for well-formed pieces of agarwood as high quality, prestige items.

A total of 16 kg of medicine (*Aquilaria* species only) has been reported as re-exported.

Reviewers: S. Broad, J. Compton.

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