

AMENDMENTS TO APPENDICES I AND II OF THE CONVENTION

Other Proposals

A. PROPOSAL

Inclusion of *Berberis aristata* in Appendix II.

B. PROPONENT

India.

C. SUPPORTING STATEMENT

1. Taxonomy

11. Class: Dicotyledoneae
12. Order: Berberidales
13. Family: Berberidaceae
14. Scientific Name: *Berberis aristata* DC., Syst. Nat. 2: 8. 1821
15. Scientific Synonyms: None
16. Common Names: English:
French:
Spanish:
Hindi.: Kashmal, Rasaut, Chitra, Dar-hald
Sans.: Daruharidra
Kash.: Rasvat
Beng.: Darhaldi
Mal.: Maraderisina
Tam.: Maramanjai

17. Code Numbers:

2. Biological Data

21. Population Status: Exact status not designated.
22. Population Trend: Rare.
23. Distribution: Jammu & Kashmir, Himachal Pradesh, Uttar Pradesh (Garhwal Himalayas).
Nepal, Bhutan.
24. Habitat Availability: Temperate to subtropical Himalayas.
25. Geographic Trend: From north-west Himalayas eastward to Bhutan.

26. Threats: The bark and roots of the species are used in the preparation of Indian Ayurvedic medicine and for extraction of the alkaloid, berberine. As such the plant is being over-exploited.
3. Utilization and Trade:
31. National Utilization: The bark and rootbark is used in the preparation of a drug called "rasaut, rasauanti, rasanjan" used in Ayurvedic medicines in India. Used in skin diseases, blood tonics, liver complaints, jaundice and affections of the eye.
32. Legal International Trade: *Berberis aristata* is the principal species containing the alkaloid berberine. Berberine hydrochloride has been exported in the following amounts:
- | 1990/91 | 1991/92 | 1992/93 |
|--------------|-------------------|--------------|
| 8.47 Mtonnes | (Rs. 1,52,74,900) | 3.65 Mtonnes |
33. Illegal Trade: Accurate data unavailable.
34. Actual Potential Trade Impact: It is one of the chief source of the drug "rasaut" sold in the Indian market. The alkaloid content in stembark and root is "berberine" which is used in the preparation of drugs for cholera, diarrhoea, dysentery and eyetroubles. The bitter extract called "rasaut" is used as stomachic, laxative, diaphoretic antipyretic and antiseptic. The roots and stems also yield a yellow dye useful for tanning leather and cloth. For all these purposes, the species has got a rich potential trade impact.
35. Captive Breeding or Artificial Propagation (outside country of origin): Not known.
4. Conservation and Management:
41. Legal Status:
411. National: Export of plant, parts and derivatives now prohibited under Export (Control) Order.
412. International: None so far.
42. Species Management:
421. Population Monitoring: Monitoring projects being undertaken.
422. Habitat Conservation: Some areas of its occurrence are included in protected areas of Himachal Pradesh and Uttar Pradesh.
423. Management Measures: *In situ* conservation strategies are being examined and research in cultivation and the promotion thereof being undertaken.
43. Control Measures:
431. International Trade: None so far.
432. Domestic Measure: Fairly large quantities of roots are collected for the potential drug without adequate monitoring or measure. The Forest Dept. Govt. of U.P. has banned

extraction of roots of all *Berberis* spp. from the hills of U.P. Measures are being taken to protect the species in its natural habitat.

5. Information on Similar Species

51. Similarity in Appearance: *Berberis chitria* Edwards in Bot. Reg. 9: t. 729. 1823 (= *B. aristata* auct. non DC.; Hook.f. & Thomson in *Fl. Brit. India* 1: 110. 1872, p.p.) is closely allied to *B. aristata* DC., but the former is distinguished by pubescent angled, dark red stems spinose-serrate leaves, 9-11 cm long inflorescence and dark reddish brown berries.
52. Nature of Specimen in Trade: Roots which are yellowish brown, cylindrical, more or less knotty and hard are marketed intact or as pieces of maximum 45 mm in length. Bark is dark brown and soft, breaking away into powdery mass. The powder is bright yellow with slight odour and bitter taste.

6. Comments from Countries of Origin

No trade information available.

7. Additional Remarks

Description: Shrubs, 1-3 m tall, stem glabrous, pale brownish yellow, spines solitary towards apex, 1.5-3.0 mm long, 2-3 fid at base. Leaves subsessile, ovate to elliptic-ovate, entire or subentire. Flowers in 8-25 flowered raceme, 11-14 mm across, petals with 2 glands at base, yellow. Fruits ovoid or oblong ovoid, 9-11 x 6-7 mm, bright red.

8. References

Anonymous 1988. *The Wealth of India*. CSIR, New Delhi, (Rev. Ed.) Vol. 2: 114. 119.

Banerjee, R.N. 1993. *In Flora of India* Vol. 1:

