

## ASTERACEAE (= Compositae)

**Saussurea costus** (Falc.) Lipsch. [= *Saussurea lappa* (Decne.) Sch. Bip.]

*Common English name:* Costus root.

*Vernacular names :* Beng. & Hindi : Kur, Kut, Pachak; Guj.: Kur, Upalata; Kan.: Koshta; Kash.: Chobi-i-qut, Kuth, Post-khai; Mal.: Sepuddy; Mar.: Kushta; Sans.: Kushta; Tam.: Goshtam, Kostum, Putchuk; Tel.: Chongala, Kustam.

*Trade name :* Kuth / Uplet.

*Distribution :* INDIA: Western Himalayas: Jammu & Kashmir (Kishenganga valley & higher elevations of Chenab valley), Himachal Pradesh (Chamba) and Uttarakhand; PAKISTAN.



**Saussurea costus** (Falc.) Lipsch.

Photo Courtesy: P.K. Pusalkar

*Habitat:* In sub-alpine Himalayas, on open hill slopes at altitudes ranging from 2400-3900 m.

*Population status / Cause for RET:* Critically Endangered due to indiscriminate collection (for its roots) and destruction of habitat. Its commercial cultivation was taken up during 1920's & 1930's in Kashmir, Lahul and Garhwal in its natural habitat. Also cultivated in Lahul and at Leh Gene bank.

*Description:* Herbs, 1-2.5 m high, pubescent. Roots stout, inverted cone-shaped, up to 60 cm long, greyish to dull brownish, with characteristic odour. Basal leaves scaberulous above, glabrate beneath, margins irregularly

toothed; petiole 60-90 cm long, lobately winged; cauline leaves semi-amplexicaul, 15-30 cm long, sessile or with shorter petiole. Involucral bracts ovate-lanceolate, glabrous, purple. Flowers in heads, 2.5-4 cm in diam., axillary or terminal clusters of 2-5, sessile. Petals dark purple. Anther tail fimbriate. Achenes ca 8 mm long, compressed, curved. Pappus hairs brown, double feathery.

*Fl. & Fr.:* June - September.

*Medicinal properties and other uses :* The roots have an acrid, strong and sweet aromatic odour and bitter taste with neutral potency. The root of this plant is credited with anodyne, anti-arthritis, aphrodisiac, astringent, stimulant, digestive, diaphoretic, deodorant, antiseptic, diuretic, emmenagogue, expectorant, febrifuge, spasmodic, vermifuge and tonic properties. In India, it is cultivated in the Himalayas as a medicinal plant and also for its use in perfumery and for preserving furs. It is used singly or as an ingredient in the drug formulations prescribed for the treatment of cough, bronchitis, colic, dental trouble, diarrhoea and dysentery, liver dysfunction, pulmonary disorders, fever, flatulence, hair wash, headache, hysteria, chest complaints, nervous disorders, irregular menstrual problems, promoting urination and rheumatism. The plant is also believed to help prevent greying of hair. Dry roots (Kuth, Costus) are strongly scented and yield an aromatic oil used in making insecticides. The roots contain an alkaloid, 'saussurine', which is medicinal. It is used in skin diseases, asthma, high blood pressure and stomach ailment. Also used as carminative, prophylactic and sedative. Dry roots constitute the drug 'Saussurea'. In Kashmir the roots are used to protect woollen fabrics. Kuth is also distilled for its essential oil.

*Commercial / Ex-Im data :* The trade reported is for the roots, live plants, derivatives, extracts, oil and formulations. Kulu is the biggest centre of trade. The raw drug (roots) collected from wild plants comes mainly from Jammu & Kashmir while the cultivated sources come from Lahul Valley of Himachal Pradesh. Jammu & Kashmir State's Forest Development Corporation located at Baramulla handles the commercial supply of the raw drug collected from Jammu & Kashmir. Small quantities of the raw drug are also produced from Uttarakhand. Lahul Kuth Growers Co-operative Marketing Society based at Manali markets this raw drug produced by cultivation in Himachal Pradesh. This raw drug is also available with

the drug dealers located at Chamba, Kullu and Manali in Himachal Pradesh; Rishikesh and Ramnagar in Uttarakhand. Crude drug markets located at Amritsar, Delhi and Mumbai undertake commercial supplies on specific demand. Presently, roots of this plant are mostly exported to Hong Kong, France and Singapore. It is also exported to China, Thailand, Vietnam, Japan, Sri Lanka, Siberia and Netherlands. Estimated consumption by the domestic herbal manufacturing units has been assessed at a range between 100 and 200 MT (dry wt.). Kuth exported to Europe, primarily France and The Netherlands is used for oil production. Export to France started in 1964-65 and Japan in 1965-66 with steadily increasing trends. Export price varies among different countries. Export price to Thailand was highest, Rs. 9.77/kg during 1970-74 and to that of Singapore was Rs. 6.44/kg. The current market price of roots of this plant ranges from Rs. 80 to 100/- per kg. Essential oil of the roots of this plant varies from Rs. 10,000 to 12,000 per kg.

**During 2000:**

- 0.422 kg, 11.194 kg, 2.017 kg, 1.219 kg and 0.619 kg of roots/rhizomes extract has been exported to United Arab Emirates (CITES Permit no. A 1630, A 1931, A 1632, A 1634 and A 1635 respectively);
- 0.160 kg, 0.516 kg and 0.547 kg of roots/rhizomes extract were exported to Bahrain (CITES Permit nos. A 1633, A 1629 and A 2054 respectively);
- 1.04 kg and 1.044 kg of roots/rhizomes extract were exported to Saudi Arabia (CITES Permit nos. A 1639 and A 2057);
- 1.60 kg, 5.738 kg, 5.738 kg, 1.071 kg, 0.799 kg and 1.38 kg of rhizomes/roots extract was exported to United Arab Emirates (CITES Permit nos. A 1637, A 1640, A 1641, A 1642, A 2059 and A 2060 respectively);
- 0.108 kg of roots/rhizomes extract were exported to New Zealand (CITES Permit no. A 1689);
- 5000 kg of roots were exported to New Zealand (CITES Permit no. A 1676);
- 20,000 kg of roots were exported to France (CITES Permit no. A 1711 and A 1712);
- 5 kg of oil was exported to US (CITES Permit no. A 1710).

**During 2001:**

- 108.5 gm of plant extract of resinoid formulations was exported to New Zealand (CITES Permit no. A 1716);
- 5 kg of oil was exported to US (CITES Permit no. A 1715);
- 5000 kg of roots were exported to France (CITES Permit no. A 1723);
- 3000 kg of roots were exported to Switzerland (CITES Permit no. A 1729).

**During 2002:**

- 5.184 kg of root extract were exported to Saudi Arabia for using in preparation of ayurvedic medicine (CITES Permit no. A 2071);
- 5.8 kg of root extract was exported to Australian Antarctic territory (CITES Permit no. A 1740);
- 22.5 kg of root resinoid was exported to France (CITES Permit no. A 1730);
- 3500 kg of roots were exported to France (CITES Permit no. A 1731);
- 108.5 gm of root extract has been exported to New Zealand (CITES Permit no. A 1732);
- 10,000 kg of roots has been exported to France (CITES Permit no. A 1733).

**During 2004-2005**

- India imported 216.5 MT of *Kuth* roots for a value of Rs. 27.6 lakhs.

Cases of offence detected, which violate CITES, EXIM Policy and Wild Life (Protection) Act, 1972:

- 5 kg seized at IGI Air Cargo, New Delhi (dt. 18.04.2000) on way to Switzerland, consignor being M/s Mendala Incense, New Delhi;
- 115 kg detained at F.P.O. New Delhi (dt. 01.08.2000) on way to Germany, consignor being Dr. Damdong, Jamling, Himachal Pradesh.

- 15 kg and 8 kg of herbal agarbatti containing *S. costus* detained at F.P.O., New Delhi (dt 01.03.2001), on way to USA and UK respectively, consignor being Tara Project Access Dharamshala, Himachal Pradesh;
- 1 kg seized at Chennai Sea Port (dt. 27.04.2001), on way to Srisivan Temple, Singapore, Consignor being Naga Impex, Chennai;
- 10 kg seized at Kolkata airport (dt. 16.08.2001), on way to USA, consignor being ADMIX, P- 229, Bangur.
- 60000 capsules containing *S. costus* has been seized at C.F.S., Delhi (dt. 02.01.2002) on way to Singapore, consignor being Amsar Pvt. Ltd., Indore, M.P.
- 11 kg of preparation containing *S. costus* has been detained at Mulund, C.F.S. (dt. 25.09.2002) consignor being China General Merchant, Mumbai.
- 15 packets of *S. costus* have been detained at IGI Air Cargo, New Delhi (dt. 27.11.2002) on way to UAE, consignor being M/s Kairali Pharmaceutical, New Delhi.
- A consignment of Ayurvedic medicine from Yoga guru Baba Ramdev's pharmacy was among medicines confiscated by authorities in February 2010 in Delhi because they contained derivatives of Kuth, a protected plant under the Wildlife (Protection) Act, 1972. In total, 23 consignments were seized at different airports and seaports in the country during international Operation TRAM (TRAFFIC Alert in TRAFFIC POST Issue of June 2010: 5).

*Adulteration of Kuth oil* : Kuth oil is adulterated with oil of vetiver due to their similar physico-chemical properties, which can be detected by their odour. Oil from the roots of *Inula helenium* L. is also used for adulterating. True resinoid is sometimes adulterated with resins from roots after extracting oil with steam.

*Legal* : Listed in Appendix I of CITES. Features in the Negative List of Exports. Included in the 'Schedule VI' of the Wild Life (Protection) Act 1972 of India.

*References* :

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Walter, K.S. & H.J. Gillett (1998). 1997 IUCN Red List of Threatened Plants. P. 190.