

# *Pistacia integerrima* Stew. ex Brandis

Fam : Anacardiaceae

Ayurvedic name	Karkarashringi, Shringi
Unani name	Kaakarasingi
Hindi name	Kakrashinghi
English name	Pistanchio tree or Zebra wood
Trade name	Kakrashinghi
Parts used	Galls, kernels, foliage, bark



Fruits of *Pistacia integerrima*

## Morphological Characteristics

It is a moderate sized deciduous tree with rough grey bark. Leaves are 15-23 cm long with or without a terminal leaflet. Petiole is terete, puberulous. Leaflet is stalked, 4-5 sub-opposite pairs, lanceolate, coriaceous, entire and arched.

## Floral Characteristics

Flowers are greenish – yellow or brownish in colour, dioecious, 0.2 cm diameter, reddish in lateral, puberulous panicles, appearing with or just before the young leaves. The male flowers are in compact panicles, pubescent, 5-15 cm long. Stamens are 5-7 in number. Female flowers lack panicles, 15-26 cm long, elongate, sepals 4, linear and bracts deciduous. Fruit is a drupe, broader than long, glabrous, rugose, grey. Seeds are collected during May-June.

## Distribution

This plant is distributed over dry scrub forests in North - Western Himalayas between 300 and 2400m msl. Plant is also cultivated in Punjab.

## Climate and Soil

- Plant grows well in open rocky grounds and over limestone soil with good amount of organic matter.

## Propagation Material

- Healthy seeds after careful scarification.

## Agro-technique<sup>12</sup>

### Nursery Technique

- **Raising Propagules:**

Seeds are raised in nursery during June-July. About 80-100 kg of seeds is required for one hectare area. Seed germination is

<sup>12</sup>Agro-technique study carried out by National Bureau of Plant Genetic Resources (NBPGR), Bhowali, Uttaranchal

only 50%. Seeds are germinated in about 30 days after sowing.

- **Propagule Rate and Pretreatment:**

80-100 kg seeds/ha at a spacing of 1m X 1m is required. No pretreatment is required.

### **Planting in the Field**

- **Land Preparation and Manure Application:**

Land is ploughed once with harrowing and 2-3 ploughing to have a fine tilth. Organic compost (FYM) @ 25 to 30 t/ha is thoroughly mixed with the soil during land preparation.

- **Transplanting and Optimum Spacing:**

- Seedlings are transplanted with the onset of monsoon rains during July-August. An optimum spacing of 1m X 1m is given for accommodating 10,000 trees/ha.

- **Intercropping System:**

The plant can be grown as a pure crop or herbaceous medicinal plants can be grown as filler crop with it.

- **Interculture and Maintenance Practices:**

Regular weeding and hoeing operations are required after 30 to 60 days of

transplantation. Weeding is required for 2-3 years in early stages.

- **Irrigation Practices:**

It requires irrigation in first year depending upon soil and climatic conditions. Afterwards 2-3 irrigations are required during summer upto 3 years old crop.

### **Harvest Management**

- **Crop Maturity and Harvesting:**

The tree has a long span of life, that is 30-40 years. It takes about 9-10 years to bear flowers and fruits in July-August and insect galls are formed in natural habitat after 15-20 years during December-February.

- **Post-harvest Management:**

Mature galls are hand picked and stored in air-dried places.

- **Chemical Constituents:**

Essential oil from galls contains  $\alpha$ -pinene, camphene, dl-limonene, 1,8-cineole,  $\alpha$ -terpineol, aromadendrene and caprylic acid. Other constituents of galls are  $\beta$ -sitosterol and triterpene acids, pistacienoic acids A and B;

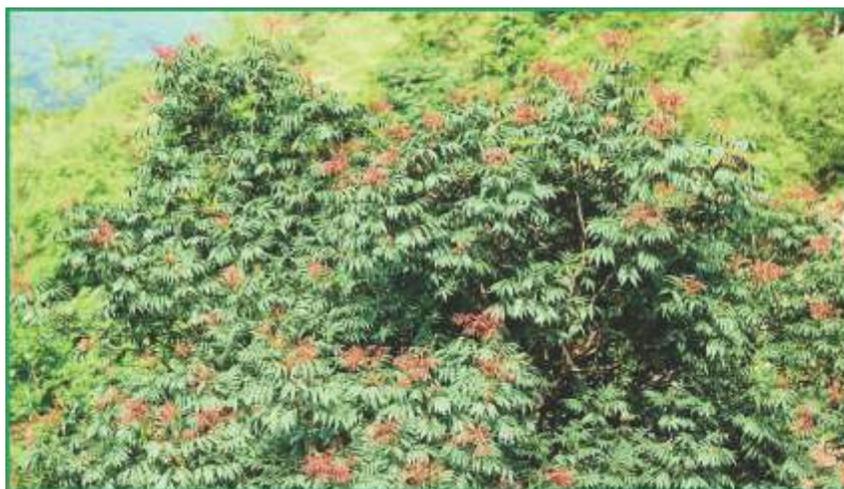
- **Yield:**

An average tree of 15-20 years old produce 0.40 kg of galls. It is a natural

phenomenon and no efforts have been made to introduce gall formation to increase yield or its size under plantation. A yield of 25 kg gall may be estimated per ha of plantation.

### **Therapeutic Uses**

Galls possess antiasthmatic, astringent and expectorant properties. Essential oil from galls is antibacterial, antiprotozoal, anthelmintic and antimicrobial in action.



Close view of plant *Pistacia integerrima*