

## *Pinus roxburghii* Sarg.



**Family:** Pinaceae

**Local/common names:**  
Chirh, Chir pine, Saral,  
Birjora pine

**Trade name:** Chir pine

**Profile:**

The chir pine is a pine native to the Himalayas and is found in abundance at low-medium altitudes along the entire range. The chir pine is widely planted for timber in its native area. It is also occasionally used as an ornamental tree, planted in parks and gardens in hot dry areas, where its heat and drought tolerance is valued. The tree is also tapped commercially for its resin. When distilled, the resin yields an essential oil known as turpentine, and non-volatile rosin. The proportion of rosin and turpentine oil in chir pine is 75% and 22% respectively with 3% losses. Turpentine is chiefly used as a solvent in pharmaceutical preparations, the perfume industry, in the manufacture of synthetic pine oil, disinfectants and insecticides. It is one of the most important raw materials for the synthesis of terpene chemicals, which are used in a wide variety of industries such as adhesives, paper and rubber. Chir pine rosin is principally used in paper, soap, cosmetics, paint, varnish, and rubber industries.

**Habitat and ecology:** The plant naturally grows in dry, grassy areas. It is found commonly in scrubs, meadows and near cultivated beds of agricultural fields. The species grows better on calcareous soil. *Pinus roxburghii* is native to the Himalayas and its range extends from northern Pakistan (North-West Frontier Province, Azad Kashmir), across northern India (Jammu and Kashmir, Punjab, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh) to Nepal and Bhutan. Although it generally occurs at lower altitudes than other pines (e.g. *Pinus wallichiana*) in the Himalaya, the tree is occasionally found in the temperate Himalayas from Kashmir to Sikkim between 1500-3600 m. It is widespread in Chamba, Kinnaur, Lahaul and Spiti districts in Himachal Pradesh and in the high altitude zones of Uttarakhand.

**Morphology:** *Pinus roxburghii* is a tall tree growing up to a height of 55 m with a spreading crown and more or less whorled branches. The bark is grayish brown, often reddish, deeply fissured and rough. The leaves are reduced to needles and are long, acicular, triquetrous, light green and in clusters of three. The male cones are about 1.5 cm long while the female cones are 12-25 cm long, borne solitary, ovoid and are brown and woody on ripening. The seeds have long, membranous wings which aid in their dispersal by wind.

**Distinguishing features:** The trees have prominent thick, dark reddish brown, deeply and longitudinally fissured bark. The needles are found in groups of three as against five needled *Pinus* species. The cones can be distinguished by the presence of two flabellate-triangular resin canals. Additionally, the seed cones are shortly pedunculate and ovoid.

**Life cycle:** Flowering occurs in April and fruiting in June. Seeds mature during October-November.

**Uses:** Oleoresin (turpentine oil) is extracted from the leaves of chir pine. Turpentine oil extracted from *Pinus roxburghii* is used in pharmaceutical preparations, perfumery industry, synthetic pine oils, disinfectants, insecticides and denaturants. It is feebly antiseptic and is useful as an expectorant in chronic bronchitis. It is especially recommended in the treatment of gangrene of the lungs and has been found beneficial as a carminative in flatulent colic, also arrests minor haemorrhages in tooth sockets and the nose. As enema, the oil is useful in obstinate constipation, tympanitis and seat worm infestations. Externally it is used as

rubefacient in diseases like lumbago, arthritis and neuralgia. Vaidis of Joshimath use turpentine oil to cure skin diseases and the bark for orthopaedic purposes.

**Market rate:** Data not available