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Kydia calycina Roxb.

Taxonomy and Nomenclature

Species name*: Kydia calycina* Roxb.
Family name: Malvaceae
Synonyms: *Kydia fraterna* Roxb., *Kydia roxburghiana* Wight
Vernacular (common name): White catkin, Pula, Baranga, Pichhola

Distribution and habitat

The tree is native to Southeast Asia including India, Bangladesh, Myanmar, Nepal, Pakistan Bhutan, Thailand, Vietnam, and Southern China. It occurs throughout the greater part of India chiefly in the mixed deciduous forests except in arid areas and wet areas of Andaman. It is common in the Sub-Himalayan tract through Central India to the Deccan plateau and in north-east India up to an altitude of 1600m. The absolute maximum shade temperature of its natural habitat ranges from 38^{0}C to 50^{0}C, the minimum being 2.5^{0}C to 15^{0}C. The mean annual rainfall varies from 500-2500 mm. It grows on a wide variety of soils but avoids stiff clayey soil with impeded drainage. Best growth is found in well-drained deep fertile alluvial soil. Dry shallow gravelly soils or saline soil are not suitable. It is a light-demander but can tolerate moderate shade in the young stage. It is fairly frost-hardy and drought resistant. It is sensitive to fire and browsing by animals. It is comparatively short-lived, but its rapid growth after the first season enables it to push its way through gaps till it reaches a height of 9-12m or more, and then it may be suppressed by larger and long-lived trees. It coppices well, pollards satisfactorily, and also produces root suckers.

Use

Seasoned wood is useful for interior work in building construction, and to a limited extent in making agricultural implements, matchboxes, splints, light packing cases, oars, carving, spoons, and ladles. The wood is suitable for veneers, plywood and small size implements like, brush backs, turnery, toys, bobbins, and pencils. The wood is used as fuel and for making charcoal. Inner bark yields a fiber used locally for making coarse ropes. The pulp can be used, in admixture with 30% bamboo chemical pulp, for newsprint of poor quality. The tree is valued for the leaves which are lopped for fodder. The wood is a good source of commercial potash. Parts of the plant are reported to have medicinal properties. Leaves are used for skin diseases, abscesses, wounds, cuts, and boils, leaf paste is applied to the body to get relief from pain; leaves are chewed to overcome the deficiency of saliva and for stomatitis; leaf decoction is used against fewer. The root is febrifuge, and used for rheumatism; stem bark decoction is given to cattle for dyspepsia. It is one of the recorded hosts of the Indian lac insect – *Kerria lacca.* Due to attractive flowers and fruits, the tree is considered ornamental.

Botanical description

It is a moderate-sized deciduous tree, attaining a height of 12-20m with a clear bole of 6m and a girth of 0.9-1.2m or more; bark 5-6 mm thick, greyish-brown, exfoliating in irregular flakes or thin long strips; young branches densely pubescent with minute greyish stellate hairs. Leaves simple, alternate, stipulate; stipules free, lateral, petiole 2.5-10 cm long, slender, stellate-tomentose; lamina 5-15 x 4-16 cm, broadly ovate to suborbicular, 3-5 lobed, base obtuse, cordate, round or truncate, apex obtuse or acute, margin crenate-dentate or subentire, coriaceous, stellate-tomentose above, velvety beneath; midrib with gland near the base beneath; lateral nerves 3-4 pairs.

Flowers polygamo-dioecious, white or pink, fragrant, in axillary and terminal panicles; peduncle stellate-tomentose; pedicel up to 5 mm long, stellate-tomentose; epicalyx lobes 4 or 6, oblong-stellate-pubescent; calyx 5-8 mm long, 5-lobed, divided to the

middle, lobes ovate-acute, stellate-tomentose outside, silky glaucous within, accrescent; corolla 1.8 cm across in male flowers, to 1 cm across in female flowers,; petals 4-5, adnate to the staminal column, spathulate, ciliate along the margins, clawed at base; staminal column glandular throughout, hairy at base, 5-branched at apex with 4-6 sessile reniform anthers at its top; pistillode with a short style; ovary superior, 3-locular, ovules 2 in each locule; stylar branches 3, glabrous; stigmas large, peltate, minutely hairy; staminode with 3-5 clefted staminal column, each with 2-3 connate, rudimentary anthers at its apex.

Fruit and seed description

Fruit is a capsule with 3 locules, 3-6 mm across, subglobose, stellate-tomentose, completely enclosed within the calyx with persistent epicalyx lobes that function as wings during seed dispersal. One seed in each locule, reniform to ellipsoid, concentrically striated, glabrous, brownish. 37,000-40,000 fruits or 70,000-200,000 seeds weigh one kg.

Flowering and fruiting habit

Flowering and fruiting start at a young age. The flowers bloom from July to October, in some areas as late as January. Bees are the main pollinators. Fruits start to form in November, and mature from December to February. The ripe fruits remain long on the tree and shed in March-April.

Seed collection

Seed collection is generally done in the months of February-March by lopping the branches and collecting the dry and brittle inflorescence either whole or in pieces. The optimum time of collection is when the seeds are fully matured, which can be seen as the color of the fruits and seeds are brown and black respectively. The moisture content of fruits and seeds at this stage is typically 10-15% and 8-10% respectively.

Processing and handling

Fruits are rubbed in a cloth bag to remove the fragile fruits and calyx. Seeds are then cleaned by winnowing or by seed blower.

Dormancy and pretreatment

The seeds are considered having physical dormancy as the germination percentage of fresh seeds is low (2-10%), but seeds pretreated with boiling water get better germination. In this process, water is removed from heat when it starts boiling and seeds are poured in and allowed to soak in it overnight. Pretreated seeds can attain 50-70% germination.

Storage and viability

Seeds are orthodox type and can tolerate drying to 4-5% moisture content and freezing temperature. At ambient conditions (15-40)°C, the viability of seeds does not decline up to at least two years, if seeds are stored with 3-4% moisture content. Seed viability can be extended for more than two years if stored at low temperatures (15 to -20°C) with 3-8% moisture content.

Sowing and germination

The plant can be propagated by transplanting nursery-raised seedlings or by direct sowing. In the first method, seeds are sown in lines 20 cm apart or in soil-filled polythene bags. Germination starts in about 16-28 days and takes another two weeks to complete. The seedlings are thinned out to avoid overcrowding. The development of seedlings is slow in the first season, but growth is vigorous in the second season and onwards; well-watered and weeded seedlings can attain 1.2 m height at the end of the second year.

Pest and Diseases

Kydia calycina is relatively pest and disease resistant. However, it can be susceptible to some common pests and diseases. Some insects defoliate the leaves, bore into and feed on the bark, flowers, or sap of twigs, and mine or roll the leaves. *Trirachys holosericeus*, a stem borer is recorded in the species. A few *Xyleborus* species bore into felled trees. *Cephaleuros virescens*, an algal pathogen is also reported.

Selected readings

Anon. 1992. The wealth of India: Raw Materials. Council of Scientific & Industrial Research, New Delhi, India.

Luna, R.K. 1996. Plantation trees. International Book Distributors. Dehra Dun, India.

Troup R. S. 1921. The silviculture of Indian trees. Vol. I, pp 146-149. Government of India.

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