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Soymida febrifuga (Roxb.) A. Juss.

Taxonomy and Nomenclature

Species name: Soymida febrifuga (Roxb.) A. Juss.
Family name: Meliaceae
Synonyms: *Swietenia febrifuga* Roxb., *Swietenia obtusifolia* Stokes, *Swietenia soymida* A. Duncan
Vernacular (common name): Indian Redwood, Bastard cedar, Rohini, Raktarohan

Distribution and habitat

Soymida febrifuga is native to India and Sri Lanka at an elevation of up to 900m. In India, it is distributed in the hilly districts of North Western, Central, and Southern India, extending southward. It is naturally found on dry stony hills and lateritic soils. It can also grow on lime soils and black cotton soil. The absolute maximum temperature of its natural habitat is 40ºC to 46ºC and the minimum is 0ºC to 10ºC. The normal rainfall ranges from 650-1500 mm. It succeeds in moist well-drained soils and prefers a pH in the range of 5.5 - 6.5, but tolerates 4.5 - 7.8. It is drought-resistant species.

Use

The heartwood is dark red-brown, and the sapwood is thin and whitish. The wood is close-grained; extremely hard and very durable. The wood is used in house-building as rafters, beams, and posts, furniture, agricultural implements. It is well-suited for carving and turnery. Due to ease of working and its hard surface, the timber is also used as flooring. For fine decorative work, it is comparable with Spanish mahogany, and is used in frames, stiles, paneling, in partition work in offices. The bark produces good quality tannin, a dye, and gum. It also yields a strong red fiber formerly used for making ropes. The bark is used as a local medicine for the treatment of diarrhea, dysentery, and fever and also as a general tonic; decoction is used in gargles, rheumatism swellings, and gangrene. It has been used as a febrifuge instead of quinine (from *Cinchona* sp.) by local people to treat Malaria.

Botanical description

Indian redwood is a large semi-deciduous tree growing up to 30m high with a straight trunk and a dense, large, rounded canopy of numerous branches; bark very rough and brownish, exfoliating in plates or scales, wood bright red. Leaves alternate, exstipulate, on very long stalks, pinnately compound, 30—45 cm long with about 12 shortly stalked leaflets either opposite in pairs or alternate, 5—10 cm long, the terminal ones smaller, ovate, oblong, obtuse, blunt at apex, base often unequal, entire, thick, glabrous, veined. Flowers regular, bisexual, small, greenish white, shortly stalked in small lateral cymes on the divaricate branches of the large paniculate axillary or terminal inflorescences which are 20—30 cm long, bracts minute; sepals 5, small, orbicular, spreading, flat, imbricate; petals 5, larger than sepals, rounded with a longish claw, spreading, concave, veined, greenish white; stamens 10, filaments united for half their length into a fleshy, cup-shaped, hypogynous short tube, upper half free, broad, very thick and fleshy, each terminating in two divaricate pointed lobes, anthers placed between the lobes, introrse, short, 2-celled; ovary superior, smooth, ovoid, 5-locular with numerous pendulous ovules in each loculus, style short, broad, stigma large, flat on a level with the crown of stamens, 5-lobed;

Fruit and seed description

Fruit is a woody capsule, reddish-purple, blackish brown when mature, oblong-ovoid, 5-chambered, dehiscing from apex septifragally into 5 valves each of which splits into 2 layers and also separate from the large, persistent, 5-angled columella; seeds imbricate in two rows, pendulous from the top of the columella, compressed, margined, winged at both ends with a soft felty covering. 9,000-14,000 seeds weigh one kg, i.e. 1000 pure seed weight is 70-110 g.

Flowering and fruiting habit

Flowers appear in February-May together with the flush of new leaves. Fruits mature in May-June. Seeds are dispersed by wind.

Seed collection

Fresh fruits should be collected from the tree in the third to fourth week of May (in Central India) when the color of the fruit and seed are still green and white respectively. The moisture contents of fruit and seed at this stage of maturity are 50-70% and 45-55% respectively. Below this moisture content range, capsules are prone to break and seeds are blown away in hot air. Fruits are collected by lopping the branches or plucking before their splitting.

Processing and handling

After collection seeds are dried in the shade. Capsules dehisce naturally after drying. Seeds are extracted manually, and wings are removed before storage.

Dormancy and pretreatment

Seeds have no dormancy and pretreatment is not required for germination.

Storage and viability

Seeds are orthodox and can tolerate desiccation to 3-5% moisture content and freezing temperature. Seeds were not viable for more than six months if stored at ambient conditions (room temperature 15°-37°C). Viability can be extended for more than two years if stored at 5°C or lower.

Sowing and germination

Germination is epigeous. Propagation is done by seeds by direct sowing of the seeds or planting out seedlings from a nursery. Direct sowing on ridges 30 cm high is better than transplanting nursery-raised plants. Germination is completed in 10-21 days. 50-60% of seeds germinate in controlled conditions. Germination is best in porous and well-drained soil. Growth is very slow. Regular weeding and moderate watering favor their growth. They are sensitive to frost and damped soil. Sometimes defoliation in seedlings occurs due to an attack by insects.

Pest and Diseases

The tree is subjected to defoliation by insects. The sapwood of dry timber is attacked by *Lyctus africanus* L. and *Trogoxylon spinifrons* Les. (ghoon borers). The plant is also reported as alternative host plant of Mahogany shoot borer *Hypsipyla robusta*.

Selected readings

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

Troup R. S. 1921. The silviculture of Indian trees. Vol. I, pp187-191, Government of India.

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