

Rubia cordifolia Linn.

Synonym: *Rubia munjista* Roxb.

Family: Rubiaceae

Various Names

Common/Trade name: Manjit

Sanskrit name: Manjishtha

Hindi names: Manjitha, Manjit

Popular names in the southern region

- *Andaman & Nicobar Islands:* Not recorded
- *Andhra Pradesh:* Tamravalli, Manjishta
- *Karnataka:* Chithravalli, Katthee dhaare balli
- *Kerala:* Manjetti, Manchethi
- *Lakshadweep:* Manjetti, Manchethi
- *Puducherry:* Manjitti, Sevveli
- *Tamil Nadu:* Manjitti, Sevveli
- *Telangana:* Tamravalli, Manjishta

Distribution

Globally the species is distributed in Asia, Africa and Europe. Within India it is found throughout the hilly subtropical to sub-temperate regions of India, between 300 m and 2000 m altitudes.

Description

Scabrous climber, stem 4-angled, jointed; roots reddish. Leaves whorled, 4 in each node, equal or unequal, to 7 × 3 cm, ovate, acuminate at apex, cordate at base, 3-5-ribbed from base; petiole 2-5 cm long. Flowers 3 mm across; in axillary dichotomous cymes. Calyx tube turbinate, lobes 4, minute. Corolla lobes ovate, valvate, spreading, white. Ovules solitary in each cell. Fruit fleshy, globose, purple 4-5 mm across; seed one.

Uses

Manjit is a bitter, antiseptic, styptic, anodyne, depurative, and hypotensive drug. The plant is also used against blood dysentery, inflammations and urino-genital disorders. It is also an alternative, pigment stimulator and tonic.



Agro-ecological requirements

Rubia cordifolia occurs mostly in loamy soil rich in humus. The rainfall is high in the regions in which this plant grows.

Cultivation

Planting-stock production: The plant is propagated through seeds and two-node root cuttings. The seeds are collected during December and January. It is preferable to use seeds for large-scale cultivation, considering the cost factor and high rate of germination. The planting stock may be raised in nursery in January through seeds. The seeds obtained from dried ripe black fruits are sown in nursery beds either in rows or randomly by broadcasting. A thin layer of soil and organic manure is spread over the seeds, and the beds are regularly watered. After germination, seedlings with two to three leaves are transplanted in polybags for establishment. The plants can also be raised through cuttings containing two or three nodes, treated with commercially available rooting hormones or 3000 PPM (parts per million) IBA (indole-3-butyric acid) for rooting. Although cuttings give 90% success, it is still preferable to take up large-scale cultivation through seeds, which is economic and results in 80%–85% germination within 20 days. About 350 g of seeds are required to raise a nursery for planting in 1 hectare of land. Sometimes, seeds may be directly broadcast in the well-prepared field or sown in rows. In such cases, much higher quantities of seeds, to the tune of 1.5–2 kg, may be required.

Field planting: The soil is properly ploughed, harrowed once or twice and planked lightly to make it porous and weed free. farmyard manure @ 10 tonnes per hectare is applied to the soil as basal dose during land preparation. Seedlings/rooted cuttings are transplanted to the main field in April– May. An optimum spacing of 60 cm × 75 cm is recommended in the field, which gives an optimum crop stand of 22,000 plants per hectare. When the seeds are directly sown in rows or broadcast in the well-prepared field, singling is an important activity to provide optimum spacing to the growing plants. In the first year, first manual weeding is done 45 days after planting, and the second one is carried out 120 days after planting. Bamboo/shrub staking is done 30–45 days after transplanting. Inter cultural operations during second and third years may be carried out at least twice during each year.

Manuring/Fertilization: Farmyard manure/compost may applied 120-130 days after transplanting as top dressing.

Irrigation: Irrigation may be provided as and when necessary. However, the plant may be grown as a rain-fed crop in North-East India where the rainfall is high and evenly distributed throughout the year.

Pest and disease: No serious pests and diseases are reported.

Harvesting & Post-harvest processing

Rubia cordifolia starts flowering after one year in August and seeds mature in October–November. Roots can be harvested after two years at pre-flowering stage in October or late

fruiting stage by the end of November or even in early December when seed is required for next crop. The crop can, however, be allowed to stand in the field for three years. The hard roots are cut into small pieces and dried in the shade. The dried root pieces are packed in gunny bags for storage in cool and dry place.

Yield

Three tonnes of dry root is obtained per hectare of cultivated crop.

Economics of cultivation

Cost of cultivation for two years crop: ₹ 1,00,000 per hectare.

Market price: *Dried roots*- ₹140per kg (as on June 2019).

Total income: ₹ 4,20,000 per hectare.

Net income: ₹ 3,20,000 per hectare.

Quantitative quality standards (acceptable limits) (w/w)

- *Foreign material*: Not more than 1 per cent
- *Total ash*: Not more than 10 per cent
- *Acid insoluble ash*: Not more than 0.8 per cent
- *Alcohol soluble extractive*: Not less than 23 per cent
- *Water soluble extractive*: Not less than 47 per cent
- *Moisture content*: 8.8 per cent
- *Loss on drying*: 9.944 per cent

Note: *The farmers are advised to adopt suitable cultivation practices so as to meet the quality parameters and standards of the buyers.*