

Gymnema sylvestre (Retz.) R. Br. ex Smith

Synonym: *G. affine* Decne.; *G. humile* Decne.; *G. geminatum* R. Br.; *Asclepias geminata* Roxb.;

Family: Apocynaceae

Ayurvedic Name: Meshashringi

Hindi Name: Gurmar, Madhunashni

Trade Name: Gurmar

Habit: Gregarious woody climber

Part Used: Leaf

Active Ingredient: Gymnemine



Biological activity: Antidiabetic, Antipyretic, Analgesic, Antiallergic, Antimicrobial, Anti-inflammatory

Traditional and Therapeutic use: Hypoglycaemic, astringent, stomachic, antiperiodic, diuretic, tonic. It is also used to treat urinary tract disorders.

Morphological and floral characteristics: Gregarious woody climber, much branched. Young stems and branches are pubescent. Leaves are 3–5 cm long and upto 3 cm broad, ovate-elliptic, acute or shortly acuminate, pubescent on both sides; base rounded or heart shaped with 6–13 mm long pubescent petioles. Flowers occur in umbellate cyme inflorescences. Calyx is pubescent, nearly divided to the base. Corolla is yellow, tube campanulate with thick, ovate, and recurved lobes. Follicles are up to 7.5 cm long and 1 cm broad, rigid, lanceolate, and attenuated into a beak. Seeds are about 1.3 cm long, narrowly ovoid–oblong, flat, with a thin, broad, brown, and glabrous marginal wing. Flowering occurs in October–January, while fruits mature from March to May.

Distribution: The species occurs in all tropical zones of India and is a common climbing plant in central and southern India.

Climate and Soil: The plant grows in tropical and subtropical humid climate. It is common in hills of evergreen forests. Sandy loam soil is best for its cultivation. It may be cultivated on a variety of soils including graveled soil.

Nursery technique

Raising Planting material: Seed germination is poor; hence, plants are preferably raised vegetatively through cuttings. Terminal and axillary cuttings with three to four nodes from one-year-old plants are the best planting material. Cuttings can be obtained throughout the year in moist humid conditions of South India. In North and Central India, cuttings are preferably planted in February–March. Polybags are filled with soil, sand, and FYM in 1:2:1 ratio, and terminal or axillary cuttings are planted in them. The stem cuttings are dipped in IBA (indole-3-butyric acid; 100 PPM (parts per million) for six minutes before planting in the nursery to promote rooting. The

cuttings are placed under humid conditions in shade houses or mist chambers for development of roots. About 6700 rooted cuttings are required for plantation in 1 hectare of land.

Main field plantation

Land preparation: The land should be given a deep disc ploughing, followed by harrowing and levelling. About 10 tonnes of FYM is mixed with the soil as a basal application at the time of land preparation.

Transplanting and optimum spacing: The period between June and August is best for transplanting the rooted plants in the field. An optimum spacing of 1 m × 1.5 m is recommended for a crop stand of about 6700 plants per hectare.

Fertilizers: Manure at the rate of 10 tonnes per hectare should be mixed thoroughly with the soil at the time of field preparation. Additional 3-4 tonne per hectare should be applied in every six months.

Weed control: Manual weeding at an interval of one to two months is required.

Irrigation: Irrigation is required at least once in a week during summer season and once in a fortnight during winters.

Diseases and pest control: An aphid (*Aphis* sp.) is observed to attack the apical tender parts of the plant during rainy season. However, if the damage is not severe, no control measures are required. Use of chemical pesticides should be avoided since leaves are to be regularly plucked for harvest.

Crop maturity and harvesting: Leaves that are about 30–40 days old can be plucked for use, and harvesting can be done every three –four months. However, better yield is obtained after one year of growth.

Post-harvest management: Leaves are dried in shade and the dried leaves are packed in polythene bags. The moisture content of the dry leaves should be less than 8% to prevent deterioration.

Yield: About 1250 kg of dry-weight leaves can be obtained per hectare per year.