

Desmodium gangeticum (L.) DC.

Synonym: *D. cavaleriei* H. Lev.; *D. lanceolatum* Walp.; *D. latifolium* Wight

Family: Leguminosae

Ayurvedic Name: Shalparni

Hindi Name: Salparni

Trade Name: Sarivan

Habit: Undershrub

Part Used: Roots and whole plant

Active Ingredient: Lauric Acid,
Glucopyranoside



Biological activity: Antipyretic, Anticatarrhal, Anti-inflammatory, Aphrodisiac, Antioxidant, Diuretic, Analgesic, Antidarrheal, Galactagogue, Antiemetic, Antithrombotic, Expectorant

Traditional and Therapeutic use: Febrifuge, aphrodisiac, analgesic, diuretic, antiinflammatory and haemorrhagic. It is used in postnatal complaints, diarrhoea, chronic fever, biliousness, cough, vomiting, and asthma. It is an important ingredient of dasmoolarishta and chyavanprash; the Ayurvedic formulations.

Morphological and floral characteristics: Sub-erect, diffusely branched undershrub, up to 120-cm tall. Stem is short and woody at base. Leaves are unifoliate, ovate to ovatelanceolate, membranous, and mottled with grey patches. Inflorescence is elongated, lax, terminal or axillary raceme. Flowers are purple, lilac to white in colour. Fruit is a pod, moniliform (beaded), six to eight jointed. Joints of pods are sparsely pubescent with hooked hairs. Joints separate into indehiscent one-seeded segments at ripening. Seeds are compressed and kidney shaped. Flowering and fruiting occur twice a year, from May to June and from September to October.

Distribution: The species is common as an undershrub in forests and wastelands throughout tropical and sub-tropical regions of India, predominantly in the lower Himalayan regions and Gangetic plains. It is never found in open grassy lands, but quite often found as orchard weed.

Varieties: ZFDG-1 (A variety developed by ZFHC)

Climate and Soil: Tropical and subtropical dry climate is suitable its cultivation. It grows well in partial shade in moist orchards on loam to clay loam soil, with soil pH 8.5–9.0. It can also thrive well in heavy soils with high clay content.

Nursery technique

Raising Planting material: The crop can be raised easily through seeds, which germinate without any pretreatment. Seeds are collected during July–August and October– November. The collected seeds retain their viability for three years under normal storage conditions. The seedlings can be raised from seeds in the nursery in March–April. Seeds are sown in polybags with a potting mix

containing equal amounts of soil, sand, and FYM (farmyard manure). The seeds germinate in about 7–10 days and the seedlings are ready for transplanting in the main field after 45–50 days. Seeds planted directly in the field produce uneven or dense crop stand. Approximately, 3–4.5 kg seeds are needed for raising about 50 000 seedlings for 1 hectare plantation. No particular pretreatment is required; however, seeds soaked overnight in water show quicker germination.

Main field plantation

Land preparation: The field should be prepared well by giving one ploughing and two harrowing's, followed by planking.

Transplanting and optimum spacing: Transplantation in irrigated farms can be done after seedlings attain 45 days of age. If dry conditions prevail, transplantation may be delayed till early July under rain-fed conditions. An optimum spacing of 45 cm × 45 cm is recommended, which can accommodate approximately 50,000 saplings per hectare. For intercropping with widely spaced main crops such as Aonla, planting can be done in two adjacent rows at a spacing of 30 cm × 30 cm.

Fertilizers: 10 tonnes FYM/hectare should be mixed thoroughly with the soil at the time of field preparation. Nitrogen and phosphorus should be applied at the time of planting at the rate of 20 kg/hectare and 40 kg/hectare, respectively. Nitrogen and phosphorus can also be applied in the form of DAP (di-ammonium phosphate) at the rate of 100 kg/hectare. Zinc should be applied in deficient soils at the rate of 20 kg/hectare at the time of planting.

Weed control: Frequent weeding and hoeing are done manually at the initial stages and once in a month after rainy season is completed.

Irrigation: In rain-fed conditions, irrigation depends upon the amount and frequency of rainfall. Irrigation once a month during winter season is sufficient.

Diseases and pest control: No serious disease or insect pests have been observed. The roots of plantations older than one year are often severely damaged by rats in some dry regions. The rodents may be controlled by standard control measures.

Crop maturity and harvesting: The plants mature in six to seven months by November–December, and may be harvested as whole plants. If root is required for medicinal purpose, the plant may be allowed to stand for one year and harvesting may be done in April. One year old crop produces higher yield.

Post-harvest management: Irrigation is withheld three weeks before harvesting. The whole plant is dug out with spade and roots are separated. The produce is washed, cleaned, and dried in shade. The dried produce is packed in gunny bags and stored under humidity-free conditions.

Yield: The total herb yield per hectare is estimated to be 5 – 5.5 MT on dry weight, while the dry weight yield of roots is estimated to be 1 -1.5 MT per hectare.