Agri Articles
(e-Magazine for Agricultural Articles)
Volume: 02, Issue: 03 (MAY-JUNE, 2022)
Available online at http://www.agriarticles.com
©Agri Articles, ISSN: 2582-9882

Sarpagandha (*Rauvolfia serpentina*) Cultivation in India

(*Ravindra Kumar Meena[1], Deepak Kumar Koli[2], Ganesh Kumar Koli[1], Ram Kishor Meena[3] and Khemendra Choudhary[1])
[1]CCS Haryana Agricultural University, Hisar, Haryana (125 004), India
[2]ICAR-Indian Agricultural Research Institute, New Delhi, Delhi (110 012), India
[3]SKN Agriculture University, Jobner, Rajasthan, (303329), India
* ravimeena101295@gmail.com

Perennial shrub Sarpagandha (*Rauvolfia serpentina*) is known as serpentine root or serpentina root is one of the most important crude drugs which has been used in the indigenous system of medicine from ancient times. The importance of this root drug and the alkaloids obtained from it has been recognized in allopathic system in the treatment of hypertension or as a sedative and tranquilizing agent. A large number of alkaloids have been isolated from the roots of this plant such as ajmalicine, ajmaline, ajmalinine, rescinamine, reserpine, serpentine, serpentinine *etc*.

Climate

Sarpagandha grows in a wide range of climatic conditions. However, hot and humid tropical regions with sufficient rainfall are the most suited places. A range of temperature 10-30^{o} C is found favourable for the plants.

Soil

The plant grows in a variety of soils ranging from sandy alluvial loam to red lateritic loam having acidic to neutral reaction.

Propagation

A) Seed

The ripe seeds collected from the beginning of June to the end of October retain their viability for six months. Seeds are sown in raised beds at a depth of 1 cm in the nursery in lines 10 cm apart with 5 cm distance from seed to seed. About 5.5 kg of seeds sown in 0.05 ha area of nursery give adequate number of seedlings to plant one hectare. The seeds germinate within three weeks.

B) Root cuttings

The large tap roots as well as lateral secondary rootlets are employed for preparing the cuttings of 2.5-3.0 cm. planting is done in holes of 5 cm deep at the advent of monsoon and covered with 2.5-5.0 cm top layer of soil. The cuttings sprout within three weeks if good moisture is maintained during the period.

C) Stem cuttings

Stem cuttings of 15-20 cm length with three internodes should be planted in the month of July-August in the nursery and kept moist. They strike roots within 60 days afterwards they are transplanted to the main field.

Planting

June and July are suitable months for transplanting seedlings and vegetatively propagated plants. The seedlings, which are 7.5-12.0 cm high, are carefully dug out from nursery beds and planted. Regular irrigation, weeding and manuring are required for optimum growth.

Fertilizer

Organic manure is recommended @ 25-30 tonnes per hectare. A basal dose of 20 kg nitrogen (N), 30 kg phosphorus (P_2O_5) and 30 kg-potash (K_2O) is applied per hectare and two top dressing of 20 kg may be applied annually during the growing season.

Irrigation

Irrigation should be given at regular intervals. The crop may be irrigated fortnightly during hot dry season and once a month during winter.

Weed Control

Do weeding followed by hoeing to keep the field weed free. In initial i.e. first year two weedings are done and in next i.e. second year one weeding followed by one hoeing is done at growing period of plant. If flowering starts in initial period, flowers should be nipped to raise root growth.

Plant Protection

A) PEST

Caterpillar

Caterpillars roll the leaves and feed on tender leave and causes defoliation. To Control caterpillar Spray endrin 0.03%.

B) DISEASE

Die back

To control this disease 2-3 spraying with Dithane Z.78 (0.2%).

Leaf spot/leaf blight/powdery mildew

To control this disease 2-3 spraying with 0.5% Bordeaux.

Harvesting and Yield

The ideal age for the harvesting of the roots is after two or three years from the planting. In addition to the thick tap root, fibrous secondary roots should also be collected as they are rich in the alkaloid content. Digging forks are required to dig out the roots. Irrigation before the digging, will facilitate easy picking of main as well as secondary roots. The root-bark should not be damaged during harvesting. About 2000 kg of dried roots can be obtained from one hectare. The average total alkaloid yield is 2.4% in the root-bark as compared to 0.40% in the root wood.

Drying

The harvested roots are thoroughly dried before storage. After air-drying, the roots are artificially dried so as to reduce the moisture content to about 3%. The dried roots are broken into small pieces of 15-20cm and packed in airtight containers for storage in a cool, dry place. Roots stored in godowns may be periodically exposed to the air.