Withania somnifera (L.) Dunal

Synonyms: *Physalis somnifera* L.

Withania microphysalis Suess.

Family: Solanaceae

Various names

Common/Trade names: Ashwagandha, Asgandh

Sanskrit names: Amukkura, Ashvagandha, Kushthagandha, Rajgandha.

Hindi names: Asgandh, Chirpotan, Punir

Popular name/s in the southern region

- *Andaman & Nicobar Islands*: Not recorded
- *Andhra Pradesh*: Asvagandhi, Dommadolu
- *Karnataka*: Angara Baeru, Ashvagandha, Mohini Gida
- *Kerala*: Amukkuram
- *Lakshadweep*: Amukkuram
- *Puducherry*: Karappaanthazhai Amukkuram
- *Tamil Nadu*: Karappaanthazhai Amukkuram
- *Telangana*: Asvagandhi, Dommadolu

Distribution

Withania somnifera is distributed from Africa, the Mediterranean to India and Sri Lanka. In India it is distributed in the sub-Himalayan tracts, ascending up to 1000 m. It is found in Himachal Pradesh, Punjab and throughout the drier parts of India including most parts of Andhra Pradesh, Karnataka and Tamil Nadu.

Description

It is a perennial herb that grows up to 30-75 cm height. Branches are hairy. Leaves are simple arranged alternately and measures 6-12 cm long and 2.5-5 cm broad. Flowers are small and green, arranged in few flowered axillary clusters. Fruit is a rounded berry of about 0.5 cm across, orange red in colour, seeds many and small.

Uses

Ashwagandha products are recommended for treatment of various ailments which include polyarthritis, rheumatoid arthritis, lumbago, painful swellings, spermatorrhoea, asthma, leucoderma, general debility, sexual debility, amnesia, anxiety neurosis, scabies, ulcers, marasmus and leucorrhoea.

Agro-ecological requirements

Ashwagandha is grown on sub-marginal wastelands and low fertile areas. The plant grows well in red, sandy, black and loamy soil with pH 6.5-8.0 with good water drainage. It prefers a sub-tropical climate. Areas receiving 600 to 750 mm rainfall are best suited to this crop. The crop requires dry season during the growing period. Late winter rains are conducive for the proper development of the roots.

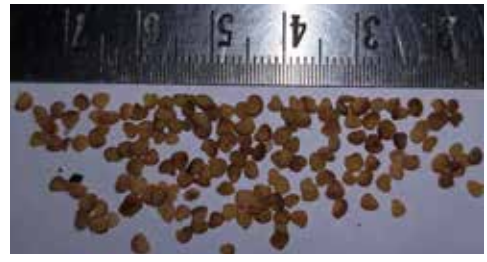
Cultivation

Planting stock production: Seeds are sown in well-prepared, raised nursery beds in lines spaced at 5 cm and about 1-3 cm deep, and covered with light soil. Germination commences in 6-7 days of sowing and completes in ten days. Six weeks old tall seedlings are ready for field planting. Alternatively, sow the seeds directly in the main field by broadcasting and covering with a thin layer of soil.

Improved varieties: Jawahar Asgand-20, Jawahar Asgand-134, Rakshita, NMITLI-118, Chetak, Pratap and Poshita (developed by CIMAP, Lucknow).

Field planting: Six weeks old seedlings are transplanted at distance of 20-25 cm and10-15 cm between plants in rows. Density of 30 to 60 plants/ m2 or 3 to 6 lakhs seedlings are needed to plant in one hectare.

Manuring/Fertilization*:* Ashwagandha does not require heavy manuring. Farmyard manure or vermicompost is applied at the rate of 200-300 kg per hectare.



Irrigation: Light shower after transplantation ensures better establishment of seedlings. There is no need of irrigation if rainfall is at regular intervals. Excessive rainfall/water is harmful to the crop. Life saving irrigation is necessary, may be provided at required intervals.

Pests and Diseases: The early stages (seedling stage) of Ashwagandha are affected by fungal disease like damping off, seedling blight, seed rotting, die-back etc. Leaf curl tobacco and urtches broom disease are also noticed. Diseases can be manifested by using botanicals (*Azadirachta indica*, *Tagetus* spp. etc) and bio controlling agents like *Trichoderma harzianum* and *Pseudomonas fluorescens.*

Harvesting & Post-harvest processing

The crop is ready for harvesting in 150 to 180 days after transplanting. Maturity of the crop is judged by the occurrence of drying of leaves and presence of yellow-red berries. The entire plant is uprooted and roots are separated from aerial parts by cutting the stem 1- 2 cm, above the base. The berries are plucked from the dried plants and are threshed to obtain seeds.

Roots are carefully hand sorted into the following four grades.

Grade A: Root pieces 7 cm long, 1-1.5 cm diameter, brittle, solid and pure white from outside.

Grade B: Root pieces 5 cm long, 1 cm diameter, brittle, solid and white from outside.

Grade C: Root pieces 3-4 cm long, less than 1 cm diameter and solid.

Lower grade: Root pieces smaller, hollow and yellowish from outside.

Yield

An average yield under commercial cultivation is 0.5- 0.7 tonnes of dried roots and 30- 40 kg seeds.

Economics of cultivation

Approximate cost of cultivation:₹ 25,000 per hectare.

Market price: *Roots:* ₹ 230/kg (as on July 2019)

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

- *Foreign matter*: Not more than 1.0 %
- *Ash*: Not more than 8.0 %
- *Acid-insoluble ash*: Not more than 2.0 %
- *Alcohol-soluble extractive*: Not less than 18.0 %
- *Water-soluble extractive*: Not less than 22.0 %

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