

Species Specific
National Campaign on

Ashwagandha

“A Health Promoter”



Regional-cum-Facilitation Centre (Southern Region)
National Medicinal Plants Board
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INTRODUCTION

Withania somnifera (L.) Dunal (Family: Solanaceae), known in trade as Ashwagandha and Indian ginseng, is a commercially important medicinal plant. It has been used as a nervine tonic in indigenous medicine since 3000 BC. In Charak Samhita, it is mentioned that Ashwagandha plant has "smell of a horse" (hence the name Ashwagandha; ashwa means horse, gandha means smell) and ``ability to increase vigour of the consumer''. As per tests, Ashwagandha with its cognition-promoting effect is useful for children with memory deficit, and old age people showing signs of memory loss. The root powder of this plant is useful in managing neurodegenerative ailments. Ashwagandha is an adaptogen that helps to maintain physical and mental balance. It also has anti-inflammatory, antiarthritic, and antineuronal effects. Ashwagandha is beneficial for numerous diseases, including asthma, cold and coughs, diabetes, epilepsy, hyperlipidaemia, leprosy, female sexual dysfunction, male infertility, osteoarthritis, and much more. The leaves are used to treat fever and painful swellings. The flowers are astringent, depurative, diuretic and aphrodisiac. The seeds are anthelmintic.



Ashwagandha is an annual to perennial small or medium erect greyish undershrub, with strong disagreeable odour like horse's urine. The plant is covered with very short, small, fine, branched silver-grey hairs. The leaves are simple, with slightly waved margins. Flowers are generally small, greenish, axillary, solitary or in cymes. The mature fruits are orange-red and the seeds are normally many, discoid, reniform and yellow. Roots are long, woody and tuberous.

About 7,000 tons of dry roots of Ashwagandha are required annually by the Indian drug industries against an annual production of 1,500 tonnes.

AGRO-TECHNIQUES

Ashwagandha is a drought tolerant crop. It grows well in dry tracts where the climate is generally dry with mean annual rainfall between 600 mm and 750 mm and temperature between 14°C and 42°C. Black and laterite soils having good drainage are suitable. The soil should be loose, deep, well drained and slightly alkaline (pH 7.5-8.0). Ashwagandha is a short duration (4 to 4.5 months) late rainy season (Kharif) crop.

For cultivating Ashwagandha, plough the land once with mould board plough and harrow twice to bring the soil to fine tilth. About 10-20 tonnes of farm yard manure per hectare should be mixed into the soil at the time of last ploughing. The field is then levelled by planking.

Seeds broadcast as well as transplanting seedlings from nursery beds are the two methods of cultivation of Ashwagandha. Seeds are recalcitrant type. About 3.50 to 4.25 lakhs of seeds will weigh one kilogram. Broadcasting seeds at the rate of 15 kg per hectare is the most common method for cultivation of ashwagandha in rainfed areas. The germination percentage of seeds is 80 per cent. The optimum time for sowing is 2nd to 3rd week of August. If rainfall is more, then sowing can be delayed up to September.

Apart from broad sowing, line sowing and raised bed sowing are also gaining popularity. Transplanting seedlings is another method of cultivation Ashwagandha. For raising seedlings, seeds are sown in well-prepared, raised nursery beds. In June-July, the seeds are sown in lines spaced at 5 cm at about 1-3 cm deep in soil and cover with light soil. A light irrigation after sowing of seeds ensures good germination. Germination commences within 6-7 days of sowing, and completes within ten days. When the seedlings are 6 weeks old and sufficiently tall, they are transplanted at 15 x 15 cm spacing in well-prepared land in July-August. About 5 kg of seeds are required to provide enough seedlings for planting one hectare.

CROP MANAGEMENT

In fields where seeds are sown, by broadcasting or in the line, seedlings should be thinned out by hand at 25-30 days after sowing to maintain a plant population of about 3 to 6 lakh plants per hectare. One hand-weeding at an early stage is sufficient to enable the Ashwagandha plants to take over the growth of weeds. Organic mulching (using residues of previous crops) can be done both for inhibiting weed growth and conserving soil moisture. Excessive rainfall or watering is harmful for Ashwagandha crop. Thus, one or two lifesaving irrigations can be given if required.

In some places, Ashwagandha crops may be affected by insect pests such as aphids and hadda beetles, and diseases such as seedling rot and *Alternaria* leaf blight. Bio-pesticides prepared by using neem (*Azadirachta indica*), chitrakmool (*Plumbago indica*), dhatura (*Datura metel*) and cow urine may be used to control insect pests, and neem cake can be applied to soil to control diseases.



HARVESTING

Ashwagandha plants start flowering and bearing fruits from December onwards. Mature fruits can be collected for extracting seeds for further propagation.

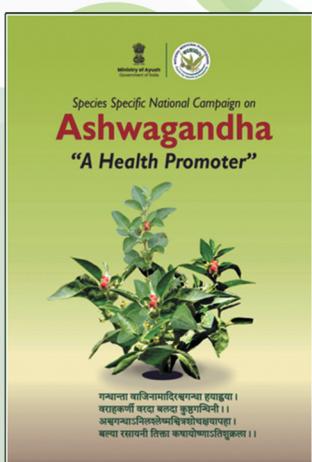
Roots of Ashwagandha will be ready for harvest during January-February, at 4 to 4.5 months after planting, when leaves start drying and berries become orange red. Ashwagandha should be harvested in the dry weather. Harvesting is done by uprooting the whole plant without damaging the roots. There should be sufficient moisture in the soil at the time of harvesting for easy uprooting of the plants. From the harvested crop, roots are separated from aerial parts by cutting the stem 1 - 2 cm, above the base and dried for 10 days under sun and then packed in white polythene bags.



120 days old crop ready for harvest
in Hulcoti, Gadag, Karnataka

ECONOMICS OF CULTIVATION

An average yield of 625-750 kg of Ashwagandha roots (dry weight) can be obtained from one hectare land. The cost of cultivation ranges from Rs. 20,000 to 25,000 per hectare with an average revenue of Rs. 92,500 to Rs. 1,12,500 per hectare. With an average B:C ratio of 4.5, cultivation of Ashwagandha also generates about 100 man-days of work per hectare during the cropping period 5 to 6 months.



NMPB-RCFC (SOUTHERN REGION)

NMPB-RCFC (Southern Region) is one of the seven Regional cum Facilitation Centres of the National Medicinal Plants Board (NMPB). NMPB functioning under the Ministry of AYUSH (Govt. of India).

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