

ASHWAGANDHA



GENERAL INFORMATION

Ashwagandha is also known as wonder herbs as it have multiple medicinal property. It derives its named "Ashwagandha" as its roots smell like horse and it vitalize body. Its seeds, root and leaves are used for preparing various drugs. Drugs prepared from Ashwagandha used for stress reliever, to treat senile dysfunction also used to control anxiety, depression, phobia, schizophrenia etc. It is a branching shrub with average height of 30cm-120cm with fleshy, whitish brown roots. Flowers are greenish in color with orange-red berries. Rajasthan, Punjab, Haryana, Uttar Pradesh, Gujarat, Maharashtra and Madhya Pradesh are major growing states in India.

CLIMAE

Temperature

20-25°C

Rainfall

300-350mm

Sowing Temperature

20°C

Harvesting Temperature

20-35°C

SOIL

Ashwagandha gives best result when grown in sandy loam or mild red soil with good drainage having pH in the range of 7.5 to 8.0. Growing Ashwagandha is not possible in soil that retains moisture and remains waterlogged. The soil should be loose, deep and well drained. Black or heavy soils having good drainage are also suitable for ashwagandha cultivation.

POPULAR VARIETIES WITH THEIR YIELD

Jawahar Asgand-20 and Jawahar Asgand-134: High alkaloid variety. It is developed by CJawaharlal Nehru Krishi Vishwavidyalaya, Madhya Pradesh. Plant height is short and is known for its higher density planting. The crop yields in 180 days with a total withanolide content of about 0.30 per cent in dry roots.

Raj Vijay Ashwagandha-100: It is also developed by CJawaharlal Nehru Krishi Vishwavidyalaya, Madhya Pradesh.

Rakshita and Poshita: Developed by CSIR-CIMAP, Lucknow and are high yielding varieties.

WSR: Developed by CSIR-Regional Research Laboratory, Jammu.

Nagori: It is a local variety with feature of having starchy roots.

LAND PREPARATION

For Ashwagandha plantation, it requires well pulverized and levelled soil. For fine tilth, plough field 2-3 times and ploughing or harrowing should be done before rains and then farm yard manure is applied. Land is prepared in month of April-May.

SOWING

Time of sowing

For ashwagandha cultivation prepare nursery in the month of June-July.

Spacing

Depending upon the growth habit and germination percentage, use spacing of 20 to 25 cm line to line distance 10cm plant to plant distance.

Sowing Depth

The seeds are usually sown about 1 to 3cm deep.

Method of sowing

Transplanting method is used of seedlings in main field.

SEED**Seed Rate**

For good varieties use seed rate of 4-5kg per acre.

Seed treatment

To protect crop from seed borne disease and pest, before sowing do treatment with thiram or dithane M-45 (Indofil M-45) @3gms / kg of seeds. After treatment the seeds are then air dried and then use it for sowing.

NURSERY MANAGEMENT AND TRANSPLANTING

Before sowing the land must be ploughed with mould board plough and harrowed twice to bring the soil in fine tilth and fill the soil with plenty of organic matter to nourish the soil. Treated seeds are sown on raised nursery bed from ground level.

Before transplanting spray 10-20 tonnes of farmyard manure, 15kg of urea and 15kg phosphorus as a nutrient dose to the soil.

The seeds germinate in 5-7 days and are ready for transplantation in about 35 days. Apply water appropriately before transplanting so that seedling can be easily uprooted. Transplanting should be done in the field with 40cm wide furrows.

FERTILIZER**Fertilizer Requirement (kg/acre)**

UREA	SSP	MURIATE OF POTASH
14	38	-

Nutrient Requirement (kg/acre)

NITROGEN	PHOSPHORUS	POTASH
6	6	-

At the time of land preparation, about 4-8 tonnes of farm yard manure per acre should be mixed with soil and then the field is leveled with planking. After planking application of pata is done to level the field.

There is no use of chemical fertilizers and pesticides as it is a medicinal plant and grows via organic farming. Some organic manure such as Farm Yard Manure (FYM), Vermi-Compost, Green Manure etc. is used as per requirement. Some bio-pesticides are prepared from neem, Chitrakmool, Dhatura, Cows urine etc. to prevent from soil or seed borne diseases. For higher production of fertile soil 6kg of Nitrogen (Urea@14kg) and 6kg of Phosphorus (SSP@38kg) per acre application is needed. Application of 40kg of N and P per ha are sufficient to produce high root yield in low fertile soils.

WEED CONTROL

Normally two weeding are done to keep the field free from weeds. One is done in about 20-25 days of sowing and then second is done after 20-25 days of first weeding. The dose of isoproturon 200g/acre and Glyphosate 600g/acre should be used before sowing the seeds to control the weeds.

IRRIGATION

Excessive water or rain will harm the crops. If rain fall is heavy, then irrigation is not required otherwise once or twice irrigates the crops. Under irrigated conditions, the crop can be irrigated once in 10-15 days. First irrigation should be done after 30-35 days from germination and then second irrigation is done after 60-70 days from irrigation.

PLANT PROTECTION

- **Pest and their control:**

No major pests are seen in this crop. However the mite infestations or insects are seen.

Aphids:- It is a small bug which feeds by sucking sap from plants; a blackfly or greenfly. They reproduce rapidly and cause extensive damage to plants. To get rid from aphids combination of 0.5% malathion and 0.1% - 0.3% kelthane as foliar spray at 10-15 days interval should be done.

Insect attack:- The Shoot borer and mite are the major insects.

Shoot borer:- Shoot borer can be controlled with sumicidin at 10ml per litre.

Mite:- To control mite spray ethion 10ml/litre as soon as mites are noticed.

- **Disease and their control:**

Diseases such as seedling rot and blight are seen in crop

Seedling rot and blight:- It is a disease that is caused by insects or nematodes which kill seeds or seedlings. To prevent from this use disease free seeds or Neem can be used.

Leaf spot:- It is a large number of fungal, bacterial, or viral plant diseases which cause leaves to develop discoloured spots. To prevent the crop from disease it should be sprayed with Dithane M-45 at the rate of 3g/litre of water, when 30 days old and the spray should be repeated at 15days interval if the diseases persist.

HARVESTING

Plant starts yielding 160-180 days. Harvesting is done in the dry weather when leaves are drying and berries change its color into red-orange. Harvesting is done by hands by uprooting the whole plant or through machines such as power tiller or country plough without damaging the roots.

POST-HARVEST

In post harvesting the roots are separated from the plant and cut into smaller pieces i.e. 8-10cm in length and then it is air dried. After post harvesting, grading is done. The root pieces are stored in tin containers for sale. The higher the length of root pieces the higher it will fetch the price. Berries are plucked separately and then they are air dried and crushed so as to take out the seeds.

REFERENCES

- 1.Punjab Agricultural University Ludhiana
- 2.Department of Agriculture
- 3.Indian Agricultural Research Institute, New Delhi
- 4.Indian Institute of Wheat and Barley Research
- 5.Ministry of Agriculture & Farmers Welfare