Available online at
www.agrospheresmagazine.vitalbiotech.org

ISSN (E): 2582 – 7022

Agrospheres:e- Newsletter, (2023) *4*(1), 8-11

Article ID: 459

Good Agricultural Practices for Ashwagandha Production

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Article History
Received: 29. 12.2022
Revised: 5. 01.2023
Accepted: 12. 01.2023

INTRODUCTION

Botanical name: *Withania Somnifera*

Ashwagandha is also known as "Indian ginseng". According to Ayurveda, it is a very useful plant. Its roots are used to cure debility, anemia, and impotence. The regular use of ashwagandha improves vigor and immune power. Ashwagandha Cultivation is a hardy and drought-tolerant plant that grows well in dry regions.

Opportunities for cultivation:

The global interest in this plant and the high demand for its roots provide ample scope to cultivate this plant on commercial scale. Other opportunities for cultivation include: Present price for roots is attractive, crop gives economically remunerative returns in comparison to traditional crops, ease of cultivation under rained condition, the crop can be integrated with traditional crops through crop sequencing, opportunities for marketing leaf and seed exist, bye-products can be profitably be utilized, value addition can increase profits, however, current exports are limited and large scale exports of roots and value added products need to be explored.

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Distribution

In India, it is found in the plains of Madhya Pradesh, Gujarat, Rajasthan, western Uttar Pradesh, Maharashtra, Karnataka, Gorkha Punjab and Haryana and in the plains of Himalayas up to 1200 meters. Ashwagandha is cultivated on a large scale (in about 10 thousand hectares) in Mandsaur and Neemuch regions of Madhya Pradesh.

Chemical Organization:

At its root flyable oil, steroidal lactones: widenolide and steroidal lactones (withanolides, withaferins) and saponins (Mishra et al., 2000) are found, of which somniferin is the main one.

Uses of Ashwagandha:

Are used in strength and enhancers, drug formulation, arthritis, tumors, cancer, antimicrobial, immunomodulatory, antioxidant, anthelmintic, insomnia, weakness, ulcers, painful inflammation, blood pressure sedative, stigmatization, white stains etc.

Climate:

Tropical region where rainfall is 600 mm. to 1200 mm it is suitable for there. The crop needs open sunlight during its growing period. 20 °C to 35 °C the temperature is most suitable for its cultivation.

Land:

Ashwagandha can be cultivated in different types of land. But loam soil with good drainage is most suitable. Sandy loamy or light red soil with pH it can also be cultivated in 7.5-8.0 HO.

Preparation of field:

Before plowing, we plow the field properly. It does not require much fertilizer and fertilizer etc. for cultivation. But if the field is less fertile, 8 to 10 trolleys apply dung fertilizer per hectare.

Sowing Time:

Ashwagandha is sown in the month of August or September after the rainy season. Advanced varieties of this crop should be grown for good production. The improved varieties have been developed by Jawahar Asgandh-20 and Jawahar Asgandh-134 Horticulture College, Mandsaur. In addition, Rakshita and Poshita are advanced varieties developed by CIMAP Lucknow.

The seed rate and sowing method:

The crop of Ashwagandha requires a seed rate of 12 kg per hectare if you choose to go for the broadcasting method. The line to line method is best suited because it increases the root yield. The seeds should be sown about 2 cm to 3 cm deep and should be covered with light soil. Plant to plant distance of 8cm to 10 cm and line to line distance of 20 cm to 25 cm should be maintained.

Method of sowing:

Ashwagandha sowing the seeds directly by spraying them in the fields and mixing sand or fine manure equal to five times the seed. It can also be sown in queues.

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Germination:

Ashwagandha germination starts within 10 to 15 days. After about a month, they decompose the plant of Ashwagandha. About 80 to 1000 plants are kept in a square meter and the remaining plants are removed. The distance from plant to plant is about 10-12 cm.

Thinning and weeding:

The seeds sown by broadcasting or in the line in furrows should be thinned out by hand at 25-30 days after sowing to maintain a plant population of about 30-60 plants per square meter (about 3.5 to 6 lakh plants/hectare). The plant density to be used may depend on the nature and fertility of the soil. On the marginal land the population is kept high. If some fertilizer (N:P:K::20:20:0) is applied then the population should preferably be kept at a lower level. One hand weeding at an early stage is sufficient to enable the Ashwagandha plants to take over the growth of weed which get suppressed by its smothering effect.

Irrigation:

Ashwagandha does not require much irrigation. But to maintain moisture in the field, irrigate at intervals of 15 to 20 days. More irrigation increases the amount of fiber in the roots, which reduces the quality of the roots.

Manure / Fertilizer:

Ashwagandha crop does not require much quantity of manure / fertilizer, yet cow dung manure has been considered profitable. Apart from this 20 kg Nitrogen and 40 to 50 kg P. Using sowing time per hectare increases productivity.

Pests and Diseases:-

Aphids, mites and insect attack, seedling rot and blight are some common pests and diseases found in ashwagandha cultivation. However, No serious pests are found in ashwagandha crops. Selecting disease-free seeds before sown is necessary to reduce these incidents. Bio-pesticides could be prepared from Neem, Datura, Cow's urine, Chitrakmool, to prevent Ashwagandha from diseases. Apart from this, having proper soil drainage and by adopting Crop rotation we can reduce the impact of any diseases.

Post harvest and harvesting work:

1. The crop is ready for harvesting after 150 to 180 days.
2. The maturity of the crop is assessed by drying of leaves and yellow to red fruits.
3. The entire plant is uprooted and the root is thoroughly cleaned with water.
4. Then add it near the stem 1-2 cm. The top is cut off.

The roots are followed by 7-10 cm in the cross. Is cut into pieces.

Different grades of roots:

The dried roots are beaten with a club to remove adhering soil and to break off thin, brittle, lateral rootlets. Lateral branches, root crown and stem remains are carefully trimmed with a knife. Root pieces are then sorted out into following grades.

1. "A grade root - root length up to 7 cm and thickness 1.0-1.5 cm, solid and bright white.
2. " B "grade root - root length 5 cm and thickness are 1.0 - 1.5 cm bright white
3. 'C' grade root - the root length is 3-4 cm and thickness is less than 1 cm solid joints.
4. Low grade root - are small pieces of root cut from 50-75 kg seeds.

Yield:

The yield of the Ashwagandha crop depends on soil fertility, irrigation, and farm management practices. We can obtain about 6 to 8 q of roots and 50 kg of seeds from one-hectare land.

Value addition:

Value added products from Ashwagandha include root powder, capsules, root extract, herbal beer etc. in addition to the traditional drugs made from this plant. Health drinks, herbal tea, functional foods, nutraceuticals and cosmeceuticals are some of the value added products on which enterprises can be set up.

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Precautions:

Liquid preparations of Ashwagandha may contain sugar and/or alcohol. Caution is advised for patients with diabetes, alcohol dependence or liver disease. Consulting doctor or pharmacist about the safe use of Ashwagandha is advocated. Ashwagandha is not recommended for use during pregnancy. Consulting doctor before using Ashwagandha is necessary. Because of potential risk.

Cost - Profit (Estimated):

Production cost : 20000/-

Yield	: 6 q
Market Price	: 150 per kg
Total Profit	: 600x150= 90000/-
Net profit	: 70000/ha.

Note: The above cost is not constant and may depend on current market labor/cost of the material used in the crop.

Health Benefits of Ashwagandha:

There are some health benefits of Ashwagandha:-

- Ashwagandha improves the immune system.
- Ashwagandha helps to control cholesterol.
- It is good for our hearts.
- Ashwagandha promotes wound healing.
- Ashwagandha helps to reduce stress, depression, and anxiety.
- It stimulates underactive thyroid.
- It increases strength and muscle mass.
- It helps in reducing pain and swelling.
- It improves our memory power.
- It is beneficial to both males and females in their reproductive systems.
- It boots energy levels.
- It is good for the eyes and joints.
- It prevents cancer cells from growing.

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