Research Paper

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AGRO- TECHNIQUES FOR CULTIVATION OF ISABGOL (Plantago Ovata Forsk)

Agriculture

KEYWORDS : Agro- techniques, Cultivation, Isabgol.

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ABSTRACT

Isabgol is a well known medicinal plant used in the treatment of habitual constipation, IBS, chronic diarrhea , dysentery, asthma, kidney troubles since ages. Scientifically this herb is known as Plantago Ovata Forsk and belongs to plantaginaceae family. Though various species of Isabgol are therapeutically used in day to day practices still people do not show much interest to cultivate these species. Here an attempt was made to develop standard agro techniques for the cultivation of three species of Isabgol namely G-2, Niharika and Jawahar. It is observed in the study that the yield of G-2 is more in comparison to other two species.

Introduction –

Procurement of genuine raw drug sample for medicinal use is very much essential to get the desirable and optimum therapeutical effect. For the production of raw material of standard content and quality, proper agro techniques for cultivation of medicinal plants should be followed. It not only helps in conservation & development of medicinal plants but also in dissemination of authentic scientific information to the growers. Isabgol is one such important plant having a great medicinal & commercial importance. It is botanically Plantago ovata Forsk which belongs to plantaginaceae family.It is a well known medicinal plant used in indigenous medicine for many centuries as a remedy for stomach ailments. It derives its name from two Persian words, 'asp' and 'ghol' which means horse-ear, referring to its characteristic boat-shaped seeds.[1] Dried seed & husk of this plant possess expectorant , antitussive, cooling , diuretic, anti inflammatory, emollient and demulcent properties.[2] In traditional system of medicine it is considered as safe laxative particularly for habitual constipation, IBS, chronic diarrhea and dysentery.[3] It is also used for the treatment of asthma, bronchitis, glandular swelling, gout, rheumatism and urinary tract infections [4] [5].

Isabgol requires less water and can easily thrives/ grows in saline soil and water without much efforts. Hence cultivation of such an important medicinal plant must be encouraged among common people and farmers to get sufficient quantity of genuine drug. In turn it also helps in uplifting the economy of the farmers and in increasing the fertility of soil by intermix culture of farming/intercropping.

Distribution – Isabgol is widely distributed in temperate and tropical regions. In India it is cultivated as a cash crop in Gujarat, Rajasthan, M.P. Punjab and Haryana.[6]

Botanical description-

It is a stemless, soft, hairy annual herb which grows upto a height 1-1.5. ft. Leaves are opposite, narrow and linear in shape. A large number of flowering shoot arises from the base of the plant. Flowers are numerous, small and white in colour. Flowering occurs after 50-60 days of plantation. Seeds are ovoid-oblong, boat-shaped, smooth, rosy-white, concave on one side and convex on the other. The concave side of the seed is covered with a thin white membrane, forming the seed coat [7] [8]

Vernacular Names- [9]

Sanskrit-Ashwagol, Ishadgola, Ashwakarnabeeja, Sheetabeeja.
Eng.- Ispaghula, Psyllium, Blond psyllium, Spogel seeds.
Hindi- Isabgol, Isabgul, Issufgul, Ispaghul, Isubgol.
Beng.- Eshopgol, Isabgul, Ishopgul, Ispaghul.
Guj.- Isapghol, Isafghol, Ghoda Jeeru, Umtojeeru, Uthamujeerun,.
Mal.- Karkatasringi, Snigddhajirakam, Ispaghal.
Mar.- Isabgola, Isapghol.
Punj.- Iisapghol, Bartang, Abghol.
Tam.- Iskolvirai, Iskol, Isphagol, Ishappukolvirai, Ishappukol.
Oriya- Isabgul.
Urdu- Ispaghul.

Properties and Action -[10] [11]

Guna-Snigha,guru,pichhil
Rasa-Madhur
Vipak- Madhur
Veerya- Sheeta
Doshakarma- Vatapittashamana
Action: Snehan, Mutrajanan, Dahatrishnahara, Jwaraghna

Aims and Objective

- To develop standard agro technique/ Good Agriculture Practice for cultivation of various species of Isabgol.
- To create awareness among common people to cultivate aromatic and medicinal plants.
- To enhance the economy of common people and farmers.

Material and Methods

Soil and climate – Isabgol grows well in salty loamy soil having the pH between 5-8 with high nitrogen and low moisture content. It thrives well in cool and dry weather that's why it is sown during winter season.

For this study 3 areas of land of ½ acre each are selected at Herbal Garden of Ch. Brahm Prakash Ayurved Charak Sansthan, New Delhi for cultivation of 3 species of Isabgol. The soil and water testing of demarcated land was done and It was found that the p^H of both soil and water was more than 8.

Land Preparation –

- First of all weeds and clods are removed from the earmarked land manually.
- Ploughing and leveling of land was done with cultivator and harrow. It makes the entire land soft.
- At the time of last ploughing FYM at @ 1ton/ ½ Acres is mixed into the soil.
- Then the earmark land was divided into suitable plots of convenient size.
- Horizontal line at a gap of 1 ft was done for sowing of seed.
- The land was named as L1, L2 and L3 for the cultivation of

Gujarat Isabgol – 2, Niharika Isabgol and Jawahar Isabgol respectively.

Planting Materials – The soil and water of this region is akaline in nature. Hence the above said three species of Isabgol has been selected for cultivation. Fresh authenticated viable seeds were procured from Amity Centre for Agricultural extension services (ACAES), sector-125, Expressway Noida, UP. As the seeds are small and light, the seeds are mixed with sufficient quantity of fine sand or sieved FYM. The seeds are sown in the last week of November 2013 @ 1kg / ½ Acre by broadcast method.

After broadcasting seeds are swept lightly with the broom to cover them with some soil followed by light irrigation. Germination starts on 5th day after sowing.

Manure

- At the time of field preparation FYM @1ton/ ½ Acres was mixed as mentioned earlier.
- Vermi Compost@ 50kg each was added once in a month in the soil of L1, L2 & L3.

Irrigation:

- Immediate light irrigation was done after sowing.
- After germination, light irrigation was done regularly once in a week.
- The last irrigation was done at the time when maximum spikes have reached the milk stage.
- Light irrigation is ideal because this crop does not sustain water logging condition.

Weed control Management –

- The first weeding is done after 20 days of sowing.
- Later on 3-4 weeding was done at regular interval till harvesting.

Harvesting – In first week of April, 2014 the harvesting of crop was done when the lower leaves of the plant becomes yellow and the spike turns to brown color. The harvesting was done in the morning and dried in shade.

Post harvesting methods

- After harvesting husks are separated from the seeds manually.
- Seeds are cleaned by using sieve.
- Seeds and husked are packed separately in air tight container after weighing.

Yield - After proper drying, weight of all 3 species was taken and mentioned as under:

Sr.No.	Demarcated Land	Species	Yield
1.	L1	G -2	186 kg
2.	L2	Niharika	157 kg
3.	L3	Jawahar	148 kg

Discussion and conclusion – Isabgol is a medicinally useful plant and can easily grow without much difficulty. Hence, the cultivation should be encouraged to get standard husks and seed of Isabgol. It also improves the economy of farmers as it has a high cost benefit ratio. The yield of G -2 is higher in comparison to other two species.

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