



# Knowledge of Farmers Regarding Isabgol (*Plantago ovata*) Production in Jodhpur Region of Rajasthan

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## ABSTRACT

Isabgol (*Plantago ovata*) is one of the important medicinal and commercial crops of Rajasthan. The present study was conducted in Barmer and Jodhpur districts of Rajasthan. From Jodhpur and Barmer district two panchayat samities in relation to Isabgol growers from each district were selected due to highest area and production of the crop. From four selected panchayat *samities*, eight Isabgol growing villages namely Jagriya, Padiyal, Jaisla, Nokda Bhatiyani, Ajani ki dhani, Jambh Shakti dham udaser, Bhawar, Harpalia were selected randomly. The personal profile and knowledge level of 120 respondents was measured through an interview schedule prepared in consultation with the experts. Knowledge index developed by the investigator was used to measure knowledge level of farmers. The study revealed that majority of farmers were young and middle aged, 22.50 per cent farmers were illiterate, majority (86.67 %) were having medium and large size of land holding, majority (84.0 %) of farmers were having their annual income in the range of Rs 1,00,792/- to Rs 2,49,208/-. Results also showed that majority (69.17 %) of farmers were in the category of medium knowledge level. Almost all the farmers (86.66 MPS) were having knowledge about irrigation management which was ranked first amongst all the package of practices of Isabgol.

**Key Words:** Growers, Irrigation, Management, Knowledge index, Land holding, Production.

## INTRODUCTION

Isabgol (*Plantago ovata* Forsk) is one of the important medicinal and commercial crops in India. It is a natural laxative, rich in vitamins like A, C, D, E and K and minerals like Ca, Mg, P, Fe and K, Omega-6 and Omega-3. Isabgol is Chemically composed of Xylose 59%, Arabinose 22.3%, Uronic acid 6.1%, Galactose 3.7%, Glucose 3.5%, Rhamnose 3% and Mannose 1.6% (Singh, 2016). The mucilage content in Isabgol seed cultivated in India is higher. Colloidal mucilage is valuable for medicinal application (Pagaria and Kantwa, 2014) and this crop is commercially cultivated mainly in the states of Rajasthan, Gujarat and Madhya Pradesh. Rathore and Mathur (2020) concluded that the government should undertake training and extension activities to the farmers for the management of the pest and diseases of Isabgol

crop during unfavorable climate to reduce losses of crop and to increase the production of crop for better return for the farmers. Further, Meena *et al* (2019) emphasized that the highest training need was expressed about selection of seed and seed rate, irrigation management and harvesting, storage and marketing by both of the groups e.g. beneficiary and non-beneficiary respondents. Likewise, the present study was undertaken with the objective to study the profile and the knowledge level of farmers about recommended Isabgol production technology.

## MATERIALS AND METHODS

The present study was conducted in Jodhpur region of Rajasthan. This region comprises of two districts Barmer and Jodhpur. Two panchayat samities in relation to Isabgol growers from each district were selected as having highest area

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Table1. Personal profile of Isabgol growers.

n=120

| Sr. No. | Variable             | Category                         | Frequency | Percentage |
|---------|----------------------|----------------------------------|-----------|------------|
| 1.      | Age                  |                                  |           |            |
|         |                      | Young (up to 35 yr)              | 67        | 55.83      |
|         |                      | Middle (from 35 to 50yr)         | 40        | 33.33      |
|         |                      | Old (above 50 yr)                | 13        | 10.84      |
| 2.      | Education            |                                  |           |            |
|         |                      | Illiterate                       | 27        | 22.50      |
|         |                      | Can read only                    | 11        | 9.17       |
|         |                      | Can read & write only            | 16        | 13.33      |
|         |                      | Primary school                   | 22        | 18.34      |
|         |                      | Middle School                    | 13        | 10.83      |
|         |                      | High School                      | 19        | 15.83      |
|         |                      | Graduate                         | 9         | 7.50       |
|         |                      | Above graduate                   | 3         | 2.50       |
| 3.      | Land holding         |                                  |           |            |
|         |                      | Land less (0 ha.)                | 0         | 0          |
|         |                      | Marginal (Up to 1.00 ha.)        | 0         | 0          |
|         |                      | Small (1.0 to 2.00 ha.)          | 10        | 8.33       |
|         |                      | Semi Medium (2.00 to 4.00 ha.)   | 6         | 5.00       |
|         |                      | Medium (4.00 to 10.00 ha.)       | 55        | 45.84      |
|         |                      | Large (More than 10.00 ha.)      | 49        | 40.83      |
| 4.      | Income from          |                                  |           |            |
|         | Agriculture          | Below ₹ 1,00,792                 | 26        | 21.67      |
|         | Mean= ₹ 1,75,000     | From ₹ 1,00,792 to ₹ 2,49,208    | 84        | 70.00      |
|         | S.D.= ₹ 74208        | Above ₹ 2,49,208                 | 10        | 8.33       |
|         | Non-Agriculture      |                                  |           |            |
|         | Mean= ₹ 50,000       | Below ₹ 22,919                   | 10        | 8.33       |
|         | S.D.= ₹ 27081        | From ₹ 22,919 to ₹ 77,081        | 97        | 80.83      |
|         |                      | Above ₹ 77,081                   | 13        | 10.84      |
| 5.      | Extension Contact    |                                  |           |            |
|         | Mean = 6             | Low (score below 2.57)           | 2         | 1.67       |
|         | S.D. = 3.43          | Medium (score from 2.57 to 9.43) | 108       | 90.00      |
|         |                      | High (score above 9.43)          | 10        | 8.33       |
| 6.      | Social participation |                                  |           |            |
|         | Mean=5.00            | Low (Score below 3.35)           | 9         | 7.50       |
|         | S.D.=1.65            | Medium (Score from 3.35 to 6.65) | 97        | 80.83      |
|         |                      | High (Score above 6.65)          | 14        | 11.67      |

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and production of the crop. From four selected panchayat *samities*, eight Isabgol growing villages namely Jagriya, Padiyal, Jaisla, Nokda Bhatiyar, Ajani ki dhani, Jambh Shakti dham udaser, Bhawar, Harpalia were selected randomly. From the selected villages, a sample of 15 respondents from each village was chosen. Hence, the personal profile and knowledge level of 120 respondents was measured through an interview schedule prepared in consultation with the experts. A knowledge test regarding Isabgol cultivation practices was developed by the investigator in consultation with the experts. One score was assigned to each correct answer and zero to each incorrect answer. The knowledge level of farmers was measured by using the following formula:

$$\text{Knowledge Index} = \frac{\text{Obtained score by respondent}}{\text{Maximum score}} \times 100$$

Ranks were accorded in the descending order according to the MPS obtained. This was used to find out the severity of constraint in order of priority.

## RESULTS AND DISCUSSION

### Age

The data (Table1) showed that majority (55.83%) of farmers were found in young age group followed by middle (33.33%) and old age group (10.84%). It was also inferred that majority (89.16%) of the farmers belonged to young and middle age group. This might be because of the fact that young and middle age farmers took more interest in latest Isabgol production technology due to their high energy level as compared to old ones. The findings were in accordance with the findings obtained by Jakkawad *et al* (2020).

### Education

The data Indicated that majority of farmers (22.50 %) were illiterate followed by 18.34 per cent, 15.83 per cent, 13.33 per cent, 10.83 per cent, 9.17 per cent farmers having primary school, high school, can read & write only, middle school and

can read only education respectively, while 7.50 per cent and 2.50 per cent farmers were graduates and above graduates, respectively. The findings were in accordance with the findings obtained by Chavai *et al* (2015) and Hasan *et al* (2016).

### Land holding

It was found that majority of the farmers 55 (45.84 %) possessed medium category of land holding followed by 49 (40.83 %) with large land holding and rest 10 (8.33 %) with small land holding, and 6 (5.00 %) with semi medium land holding categories, respectively. Thus, in Jodhpur region most of the farmers were in medium and large categories (86.67%) according to their land holdings. Similar findings were obtained by Khandawe and Suryawanshi (2015) and Jakkawad *et al* (2020)

### Income

It was revealed that majority (84.00 %) of farmers were having income from agricultural sources which ranged from ₹ 1,00,792/- to 2,49,208/- and were in medium level of income group. On the other hand, 10 (8.33 %) farmers were in high income group and remaining 26 (21.67%) farmers were in low income group. It was also found that regarding income from non-agriculture sources, majority of farmers (80.83%) were in medium level income group. On the other hand, 13 (10.84 %) farmers were in high income level group and remaining 10 (8.33%) farmers were in low income level group. The reason behind this might be that, majority of Isabgol growers were having medium to large farm size, which was directly related to their medium income. The findings were in accordance with the findings obtained by Chavai *et al* (2015) and Jakkawad *et al* (2020).

### Extension contact

The data (Table 1) explained that majority of Isabgol growers (90.0%) had medium extension contacts while 8.33 per cent and 1.67 per cent farmers were having high and low extension contacts, respectively. The reason for having high

**Table 2. Distribution of farmers according to knowledge level about Isabgol production technology. n=120**

| Sr. No. | Knowledge level                              | Frequency | Percentage |
|---------|--|-----------|------------|
| 1.      | Low knowledge (Score below 35.79)            | 18        | 15.00      |
| 2.      | Medium knowledge (Score from 35.79 to 48.21) | 83        | 69.17      |
| 3.      | High knowledge (Score above 48.21)           | 19        | 15.83      |
|         | Total  | 120       | 100        |

Mean = 42.00 S.D = 6.21 F= Frequency

extension contacts might be that Isabgol cultivation requires good technical knowledge and skill so they contacted more with extension personnel for getting required information. The findings were in accordance with the findings obtained by Mohapatra (2013).

### Social participation

Majority of farmers (80.83 per cent) had medium social participation followed by 11.67 per cent and 7.50 per cent high and low social participation, respectively. The results showed that majority of farmers were in medium to high social participation. The probable reason might be that the majority of farmers were actively involved in Bhajani mandali, farmers club and school committees working at village level in the research area. Similar findings were obtained by Rathod and Pawar (2014) and Jakkawad *et al* (2020).

### Knowledge level of the farmers about recommended Isabgol production technology

The knowledge level of the farmers about recommended Isabgol production technology was measured with the help of knowledge test schedule regarding Isabgol cultivation practices which was developed by the investigator. Ten Isabgol cultivation practices having 36 questions were included after discussion with subject experts to measure the knowledge level of the respondents. The range of knowledge score was from 0 to 62. Knowledge score was assigned to the respondents on the basis of their performance. One mark was assigned to each correct answer and zero to each

incorrect one. This range was divided into three categories based on the mean score (42.00) and S.D. score (6.21) as presented below. The statistical data regarding the knowledge level of farmers about recommended Isabgol production technology have been presented in Table 2.

The data (Table 2) revealed that 69.17 per cent of the Isabgol growers were having medium knowledge whereas, 15.83 per cent and 15.00 per cent were having high and low knowledge, respectively about the recommended Isabgol production technology. Further, the farmer's knowledge regarding different practices of recommended Isabgol production technology was analysed separately. The mean per cent score (MPS) was obtained by multiplying total score of the respondents by hundred and dividing it by the total maximum achievable score under each practice. The relative importances of all the 10 aspects of recommended Isabgol production technology were highlighted by ranking. The findings of the study were in conformity with the findings of Chandra (2005), Roy *et al* (2007), Chouhan (2008) and Rajbhar *et al* (2017) Tiwari *et al* (2018), Kumar and Kumawat (2019).

It was evident that all the farmers (86.66 MPS) were having knowledge about irrigation management and hence this practice was ranked first. The second highest 84.58 MPS was about harvesting followed by time of sowing (75.20 MPS) and use of high yielding varieties (73.91MPS) which were ranked third and fourth, respectively (Table 3). The knowledge of different aspects like seed rate and recommended spacing, seed

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**Table 3. Rank wise knowledge of Farmers knowledge regarding recommended Isabgol production technology. n=120**

| Sr. No. | Package of practices           | MPS   | Rank |
|---------|--------------------------------|-------|------|
| 1.      | Irrigation management          | 86.66 | I    |
| 2.      | Harvesting                     | 84.58 | II   |
| 3.      | Time of sowing                 | 75.20 | III  |
| 4.      | Use of high yielding varieties | 73.91 | IV   |
| 5.      | Seed rate and spacing          | 73.54 | V    |
| 6.      | Seed treatment                 | 71.38 | VI   |
| 7.      | Soil & field preparation       | 66.66 | VII  |
| 8.      | Fertilizer application         | 64.58 | VIII |
| 9.      | Weed management                | 57.22 | IX   |
| 10      | Plant protection measures      | 51.87 | X    |

MPS= Mean Percent Score

treatment, soil and field preparation, fertilizer application, weed management, plant protection measures were moderately known by the farmers with 73.54, 71.38, 66.66, 64.58, 57.22, 51.87 MPS and assigned fifth, sixth, seventh, eighth, ninth and tenth rank, respectively. The findings of the study were in conformity with the findings of Chandra (2005), Singh *et al* (2014).

### CONCLUSION

It was concluded that majority (83.16 %) of farmers belonged to young and middle age group, 22.5 % farmers were illiterate, only 10.00 % farmers were graduate and post graduate, with regard to the land holding majority (86.67 %) farmers were in medium and large land holding categories, majority (84.00 %) of farmers were in the category of medium income group regarding annual income from agriculture, and non-agriculture respectively. Majority (90.00 %) of farmers were in medium extension contacts and majority (80.83 %) of farmers were in medium level of social participation. Further, it can be concluded that majority of farmers (69.17 %) were having medium level of knowledge regarding Isabgol production technology, followed by 15.83 per cent and 15.00 per

cent of the farmers were falling under high and low level of knowledge regarding Isabgol production technology, respectively. It was evident from the study that all the farmers (86.66 MPS) were having knowledge about irrigation management and hence this practice was ranked first. The second highest 84.58 MPS was about “harvesting” followed by time of sowing (75.20 MPS) and use of high yielding varieties (73.91 MPS) which were ranked third and fourth, respectively.

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