RESEARCH ARTICLE

IMPACT OF FRONT LINE DEMONSTRATION ON ISABGOL CROP IN BARMER DISTRICT OF RAJASTHAN

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Received-05.12.2020, Revised-27.12.2020

Abstract: The present study was conducted in Gudhamalani, Panchayat Samiti, Barmer district of Rajasthan. From Panchayat Samiti was selected maximum number (70) of front line demonstrations on Isabgol crop conducted by Krishi Vigyan Kendra, Gudamanalani , Barmer district during the last two years (2018-19 to 2019-20). The results revealed that the average yield recorded in the FLD,s field and farmer's field was 9.15 and 7.79 q/ha' during 2018-2019 and 2019-20, respectively. The result showed 13.40 to 21.90 per cent yield increase in FLDs over farmers practice during 2018- 19 to 2019-2020. Therefore, front line demonstration programme was an effective tool for increasing the productivity of isabgol and changing knowledge, attitude and skill of farmers. This created greater awareness and motivated the other farmers to adopt improved practices of isabgol.

Keywords: Blond psyllium, Husk, Net returns, Demonstration, Yield attributes

INTRODUCTION

Blond psyllium (Plantago ovata Forsk) is one of the most important medicinal crops grown for its seed and their mucilaginous husk (bhussi) used for medicinal purposes (Aishwath and Ram, 2008). It is an annual herb belonging to family plantaginaceae and most commonly grown in temperate region as cash crop for its export value. At present, blond psyllium has acquired the name "Dollar earner" in North Gujarat and South Western Rajasthan. As a whole, India commands a near monopoly in production and export of the seed and husk in the world market. India produces 98% blond psyllium of the world's total production (Rajendaran, 2009). About 80-90% of the produce is exported to various countries. The seeds of blond psyllium are mainly valued for their mucilaginous rosy white husk. It contains about 30% mucilage and hemi cellulose that is mainly composed of xylose, arabinose, galacturinic acid, rhaminose and galactose. In addition to mucilage, the seeds contain semi drying fatty oils (5%), small amount of acubin and tannin. The mucilage present in its husk has medicinal properties and used in the treatment of constipation, dysentery and other intestina complaints. Husk has a high water absorbing capacity and therefore, used as an anti-diarrhoea drug. Its seed and husk are used in Unani, allopathic and Ayurvedic medicines and they have cooling and demulcent effect. In addition to these medicinal uses, it is also used in dyeing, calico printing, in the ice cream as a stabilizer, confectionery and cosmetic industries (Thakur et al., 2012). The seed without the husk, which contain about 17-19% protein, is used as cattle feed. The productivity of blond psyllium is low, however, it can be improved by adopting improved agronomic manipulations, viz., improved varieties, appropriate sowing time and nutrient supplementation etc. To make any crop successful in any area, it must have good varieties and improved production technology to achieve its higher yield potential. Yielding ability of various varieties vary due to their genetic make up. Weather conditions to which the crop is exposed during its life cycle is considered to be principal input parameters affecting its productivity, despite availability of other inputs and improved crop husbandry practices. Delay and early sowing causes poor growth and reduction in yield. Evolving appropriate sowing time and most suitable variety under prevailing conditions seem to be of paramount importance for achieving higher yield with least cost. Although, it does not make heavy demand of soil nutrients but it is well known fact that judicious application of fertilizer increase the crop yield. Most of the Indian soils specificaly light textured ones of Rajasthan are deficient in nitrogen, which is one of the basic plant nutrients. It is involved in formation of protein, nucleic acid, growth hormones and vitamins and is an integral part of chlorophyll. An adequate supply of nitrogen is associated with vigorous vegetative growth and dark green colour. The information about improved production technologies of blond psyllium under semi-arid region of Rajasthan are not available as it is one of the new crop for some parts of Rajasthan, still in the process of introduction, it is imperative to workout its specific cultural requirements under given set of conditions, particularly with respect to nitrogen fertilizer requirement, sowing time and growing of high yielding varieties. Keeping all these facts in view, the present investigation was undertaken to study the effect of sowing time and nitrogen on growth, yield attributes, yield, economics and quality of blond psyllium varieties.

MATERIALS AND METHODS

The present study was conducted in Gudhamalani Panchayat Samiti, Barmer district of Rajasthan.

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These Panchayat Samiti were selected maximum number of front line demonstrations on Isabgol crop were conducted by Krishi Vigyan Kendra, Gudamalani district during last two year (2018-2019 to 2019-2020). The primary data were collected from the farmers with the help of interview schedule and interpreted and presented in terms of percentage and the qualitative data were converted into quantitative form and expressed in terms of per cent increased yield. Thus, a total sample size comprised of 50 respondents from 06 villages where FLDs were conducted by KVK, Gudamalani, Barmer district of Rajasthan and were included for the study.

Table 1. Area, Production and Produtivity of Isabgol in Barmer District

S.No.	Year	Area (ha)	Production (mt)	Productivity (kg/ha)
2015-16				
Kharif				
1	2015-16	107368	28777	268
2	2016-17	133089	55089	414
3	2017-18			
4	2018-19	133089	55089	414

RESULT AND DISCUSSION

The result obtained from the present investigation has been discussed below:

Major difference between demonstration package and farmers practices of Isabgol:

The differences in adoption of demonstration and local farmers practices of Isabgol production technologies were measured as per recommended package and practices in which the major differences were observed regarding high yield variety (HYVs), seed rate, seed treatment and balance use of fertilizers. Table 1 shows that under FLDs only recommended HYVs, seed rate @ 05 kg/ha, carbendazim @ 3 g/kg PSB+ *Azotobactor* 500g/ha each seed with fungicide, insecticide for seed treatment given to the farmers for demonstration. Whereas, under farmers practice they generally used local self-seed at high seed rate without treatment. These differences in the packages were in line with the findings of Singh and Varshney (2010), Verma *et al.* (2010), Khan and Chauhan (2005) and Veerasamy *et al.* (2003). The results obtained during last two years (2018-19 to 2019-20) are presented in the Table 3. The results revealed that the average yield recorded in the FLDs field and farmers field was 9.30 and 8.20 q/ha during 2018-2019 and in FLDs field and farmer's field yield was 9.0 and 7.38 q/ha' during 2019-2020, respectively. The result shows (Table 3) that 13. to 21.9 per cent yield increase in FLDs over farmers practice during 2018-19 to 2019-2020. These effects in the demonstration packages were in line with the findings of Singh and Varshney (2010), Verma *et al.* (2010) and Veerasamy *et al.* (2003). Similar work by Narolia *et al.* (2003) was done on the growth and quality of isabgol by phosphorus, PSB and zinc (Kumar *et al.*, 2013) also worked on the assessment of genetic variability and magnitude of correlation co-efficient among different traits in isabgol.

Table 2. Difference between demonstration package and farmers practices of Isabgol

Sr. No.	Particular practice	Domonstration package	Farmers practices
1.	Variety	RI 1	Local
2.	Seed rate	05 kg/ha	15 - 20 kg/ ha"
3.	Seed treatment	Carbendazim @ 3g/kg PSB+ *Azotobactor* 500g/ha each	Not applied
4.	Sowing method	Line sowing	Broadcasting
5.	Fertilizer doses	30: 25: 00 (N : P: K kg/ha)	Less quantity without knowledge
6.	Plant Protection	Need based spray of insecticides and pesticides	No use of insecticide and Fungicides

Table 3. Year wise result of demonstration conducted

Years	No. of FLDs	No. of Demonstration	Ave. demo.	Yield of local check	Percentage
2018-19	10	25	9.30	8.20	13.4
2019-20	10	25	9.00	7.38	21.95

CONCLUSION

It is concluded that the front line demonstration programme was an effective tool for increasing the productivity of crops and changing knowledge, attitude and skill of farmers. The 13.40 to 21.95 per cent (2018-2019 to 2019-20) yield increase in FLDs over farmers practice (traditional) was recorded in Isabgol cultivation. This created greater awareness and motivated the other farmers to adopt improved practice of Isabgol. These demonstrations also built the relationship and confidence between farmers and scientists. The beneficiary farmers of FLDs also play an important role as source of information and pure seeds for wider dissemination of the HYV of isabgol for other nearby farmers.

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