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Economic Analysis of Frontline Demonstration of Barley in Kargil District of Jammu and Kashmir

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ABSTRACT

Krishi Vigyan Kendra Kargil laid out Frontline demonstration to study the impact of High yielding variety and split doses of nitrogen in Barley. 25 farmers were selected randomly for demonstrating the technology during the year 2011-12 and 2012-13. Each demonstration was of 0.25 hectare. The crop was sown in the first fortnight of May. The average yield and economic analysis of the demonstration and the farmers practice were calculated. During both the years the highest average yield was found in high yielding varieties with split dose of nitrogen *i.e.* 25.3q/ha and 26.2q/ha as against the farmers practice *i.e.* 19.2q/ha and 16.7q/ha and the percentage increase was 31.78 and 56.89 more as compared to farmers practice. The average net return of the demonstration during 2011-12 and 2012-13 was Rupees 30080 and 31880 as against rupees 19600 and 14600 under farmers practice. The percentage increase in income was found to be 53.47 and 118.36 during both the years respectively.

1. Introduction

Kargil district of Jammu and Kashmir is extending to an area of 14036 Sqkm. About 75 percent of the population is residing in rural areas and hence engaged in agriculture to earn their livelihood. The total cultivable area of the district is 19,437 Ha with a net sown area of 11,454 Ha. Wheat and barley are the two major cereal crops grown in the district. Barley (Hordeum vulagare) being the staple food of the district covers an area of 4558 hactares Ha which is about 23.45 percent of the total cultivable area of the district with a production of 77486 Quintal and productivity of 17 q/hac. The district has been considered as productively potential region of barley crop due to favorable soil and climatic condition. However there is still a wide gap between the production potential and actual production realized by the farmer. This may be due to partial adoption of recommended package of practice and non-adoption of high yielding varieties by the farmer. However there is immense potential to increase the production and productivity of barley in the region. In this context Frontline demonstration on the concept of 'seeing is believing' was conducted with the objective to motivate the farmer to adopt high yielding varieties and Improved package of practices and to get feedbacks from them.

2. Methodology

The impact study was conducted in Kargil where Frontline Demonstration (FLDs) on Barley at Farmers field on High Yielding Variety Norbu with split doses of Nitrogen was conducted during the consecutive Kharif seasons of 2011-12 and 2012-13. The impact assessment was done on comparative basis between FLD farmer and Non FLD farmer's field. 25 farmers were selected randomly for demonstrating the technology on their field during the year 2011-12 and 2012-13. The soil of the demonstration field was sandy loam with low in nitrogen. The crop was sown in the first fortnight of May. Each demonstration was of 0.25 hectare and the recommended package of practice was adopted in the demonstration plots. The demonstration on farmer's field was regularly monitored from sowing to harvesting by the KVK team to popularize the technology in large area. The outcome of the demonstrations were depicted to the farmers through Kisan Mela, Kisan Goshti, Trainings and Field days. The average yield and economics of demonstration and check plots was recorded and analyzed.

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Different parameters as suggested by Yadav *et al.* (2012) and Dayanand *et al.* (2012) were used for calculating gap analysis, cost and return. The analytical tool used for assessing the performance of the FLDs are as follows.

$$\boldsymbol{Extension\ Gap = Demonstration\ Yield - Farmers\ parctice}$$

$$\boldsymbol{Technology\ Gap = Potential\ Yield - Demonstration\ Yield}$$

$$\boldsymbol{Technology\ Index = \frac{Potential\ Yield - Demo\ yield}{Potential\ Yield} \times 100}$$

$$\boldsymbol{B.C\ Ratio = Gross\ return / Gross\ cost}$$

3. Result and Discussion

3.1 Yield analysis:

From the table 1 it is revealed that the highest average yield during the year 2011-12 and 2012-13was recorded in HYV variety Norbu (25.3 q/ha and 26.2 q/ha) by applying split doses of nitrogen and improved packages of practices as against the farmers practice (19.2 q/ha and 16.7 q/ha) and the percentage increase in yield was observed as 31.78 and 56.8 percent respectively over the farmers practice.

3.2 Gap analysis:

Table 2 reveals a wide extension gap (6.1q/ha and 9.5 q/ha) during the year 2011-12 and 2012-13 respectively. It indicates the need to motivate and educate the farmers through various means for adoption of High Yielding varieties and improved packages of practices to bridge the gap. Introduction of high yielding varieties and adoption of latest technologies is very much essential to increase the productivity and production of barley crop in the district. It was also observed that the there is a wide technology gap during the two different years. Technology gap during 2012-13(3.8) was lower than during 2011-12 (4.7). The difference in technology gap during different years could be due to differential climatic conditions. The technology index indicates the feasibility of the evolved technology at farmer's field. Lower the technology index higher is the feasibility of the technology. Higher technology index reflects the inadequacy of the technology or insufficient extension service to transfer the technology. The technology index during 2012-13 was lower (12.6) than during 2011-12 (15.6).

3.3 Economic Analysis of Frontline demonstration of Barley on Farmers field

The data from table 3 revealed that the adoption of new HYV of barley coupled with split doses of nitrogen not only results in higher yield but also provide higher benefit cost ratio *i.e.* 2.47 and 2.55 as against 2.04 and 1.78 in the farmers practice. This may be due to higher yield obtained under High yielding varieties and recommended practices. It was also observed that frontline demonstration recorded higher gross return and net return as compared to the farmers practice

Table 1. Yield analysis of Frontline Demonstration of Barley on Farmers field

Year	No of Demonstration	Technology Demonstrated	Demonstration yield Q/Ha	Farmers Practice Q/ha	Percent increase
2011-12	5	HYV Norbu	25.3	19.2	31.78
2012-13	15	HYV Norbu	26.2	16.7	56.89

Table 2. Gap analysis of Frontline Demonstration of Barley on Farmers field

Year	Technology Demonstrated	Potential yield q/ha	Demonstration Yield q/ha	Farmer's Practice q/ha	Extension Gap q/ha	Technology Gap q/ha	Technology Index q/ha
2011-12	5	30	25.3	19.2	6.1	4.7	15.6
2012-13	15	30	26.2	16.7	9.5	3.8	12.6

Table 3. Economic Analysis

year	Practice	Gross cost Rs/ha	Gross return Rs/ha	Net return Rs/ha	B.C Ratio
2011-12	Demonstration	20520	50600	30080	2.47
2011-12	Farmers practice	18800	38400	19600	2.04
2012-13	Demonstration	20520	52400	31880	2.55
2012-13	Farmers practice	18800	33400	14600	1.78

Conclusion

The FLD conducted to study the performance of the high yielding variety and improved package of practice motivated the other farmers to adopt the technologies on their respective farm which in turn increase their income and skill. Further the extension agencies must lend technical support to popularize the technology in the district so that both the production and profitability may increase.

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