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Technological Gap in Adoption of Pulse Crop Production

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ABSTRACT

The technological gap between existing and recommended technologies of pulse crops was studied during 2011-12 among 50 respondents through Krishi Vigyan Kendra, Sant Kabir Nagar, Uttar Pradesh. It was found that a majority (56 %) of the farmers belonged to low technological gap category followed by medium (36 %) and high technological gap (8 %) in the use of high yielding varieties (HYVs) of pulse crops. In case of seed rate, 60, 28 and 12 per cent of the farmers belonged to low, medium and high technological gaps, respectively. In respect of seed treatment, a large proportion of farmers (44 %) were found in high technological gap category and 46 per cent farmers had high technological gap in method of sowing followed by medium (28 %) and low technological gap (26 %). The respondents were facing constraints in terms of unavailability of quality seeds in time, high cost of seeds, heavy weed infestation, high incidence of diseases and pests. Under socio-economic constraints, high cost of labour, high cost of inputs, unavailability of skilled labour in time, lack of support price and lack of subsidy for inputs were expressed as constraints by 78, 70, 62, 52 and 44 per cent of the respondents, respectively. Under technological constraints 66.00 per cent respondents also faced difficulties regarding weak extension support, lack of conviction and awareness about technologies.

Key words: Pulse crops, production technology, pulses scenario, technological gap, constraints

INTRODUCTION

The important pulse crops are Chickpea (48 %), Pigeon pea (15 %), Mungbean (7 %), Urdbean (7 %), Lentil (5 %) and Field pea (5 %). Productivity of pulses in the country has increased from 625 kg/ha in 2007-08 to 699 kg/ha in 2011-12. However, the average productivity of pulses in India is less than the average productivity of 890 kg/ha in the world. The major pulse producing states are Madhya Pradesh (24 %), Uttar Pradesh (16 %), accounted Maharashtra (14 %), Andhra Pradesh (10 %), Karnataka (7 %) and Rajasthan (6 %), which together, for about 77 per cent of the total production (Reddy *et al.,* 2013). The area, production and productivity of pulses in Sant Kabir Nagar district of Uttar Pradesh are 8625 hectares, 7614 metric tonnes and 8.83 q/ha, respectively (District Sankhyikiya Patrika 2011).

The traditional method of crop raising still dominates in pulses cultivation which causes low production of crops. In spite of agricultural modernization in pulse crops, farmers are still facing diverse technological gap in cultivation. Keeping these in view, an attempt was made to analyze those factors which affect the pulses production with the following objectives, to ascertain the technological gap in recommended package of practices of pulse crops and to find out constraints of low production in pulse crops.

METHODOLOGY

The study was conducted since area *of* district was covered under the pulse crops in 2011-12) in Sant Kabir Nagar district of Uttar Pradesh. The Malauli village of Hainsar block was purposively selected. The total 50 respondents were chosen at random from the selected village. For studying the technological gap, 8 important cultivation practices *i.e.* HYV, seed rate, seed treatment, method of sowing, fertilizer management, time of irrigation, intercultural operation and plant protection measures were considered. In this investigation, the constraint refers to the difficulty or problem faced by the respondents in adopting the recommended production technologies of pulse crops were studied. The data were collected with the help of well-structured interview schedule by personal approach. The technological gap refers to the gap between the recommended package of practices and practices actually applied in farming. The formula used for measuring the technological gap was as follows.

$$\text{Technological gap} = \frac{R - A}{R} \times 100$$

Where, R= Recommended technology

A= Technology actually adopted by the farmers.

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RESULTS AND DISCUSSION

The technological gap between existing and recommended technologies of pulse crops in district Sant Kabir Nagar is presented in Table 1. It clearly reveals that a majority (56 %) of the farmers belonged to low technological gap category followed by medium (36 %) and high technological gap (8 %) in the use of high yielding varieties (HYVs) of pulse crops. In case of seed rate, 60, 28 and 12 per cent of the farmers belonged to low, medium and high technological gaps, respectively. In respect of seed treatment, majority (44 %) of farmers were found in high technological gap category. It is also clear that majority of the farmers (46 %) had high technological gap in method of sowing followed by medium (28 %) and low technological gap (26 %). This might be due to lack of knowledge about the technological practices.

The data further indicated that the majority (72 %) of farmers belonged to medium technological gap followed by low (18 %) and high technological gap (6 %) in fertilizer management. A majority (52 %) of respondents were found to be in low technological gap category in the aspect of time of irrigation. With regards to intercultural operation, majority (46 %) of the farmers were in medium technological gap category, 32 per cent in high and 22 per cent of respondents were in low technological category. It was also found that majority (60 %) of the farmers had high technological gap category in case of plant protection measure followed by medium (30%) and low (10 %). This might be due to lack of knowledge and high cost of plant protection chemicals. The results are in line of conformity with the finding of Burman *et al.* (2010) and Singh *et. al.* (2011).

Table 1: Practice wise technological gap in pulse crops production technology

(n=50)

Technology	Technological gap (in %)		
	Low	Medium	High
HYVs seed in terms of area	28 (56.00)	18 (36.00)	4 (8.00)
Seed rate	30 (60.00)	14 (28.00)	6 (12.00)
Seed treatment	8 (16.00)	20 (40.00)	22 (44.00)
Method of sowing	13 (26.00)	14 (28.00)	23 (46.00)
Fertilizer management	9 (18.00)	38 (72.00)	3 (6.00)
Time of irrigation	26 (52.00)	22 (44.00)	2 (4.00)
Intercultural operation	11 (22.00)	23 (46.00)	16 (32.00)
Plant protection measure	5 (10.00)	15 (30.00)	30 (60.00)

Constraints in pulses production

The constraints faced by the farmers in adoption of recommended production technology of pulse crops are presented in Table 2. Non availability of suitable high yielding varieties was the most important constraints as reported by 76 per cent of the respondents. High yielding variety seeds were not available in time at local market and block level agricultural office. Besides, these were also not available in an adequate quantity to fulfill their needs. The cost was very high in the local market due to less availability. Fifty six per cent respondents faced difficulties about high cost of HYVs followed by heavy weed infestation (46 %) and insect-pest and disease incidence (38 %). Some of the respondents faced the problem of heavy damage due to pod borer in their crop. High cost of labour, high cost of inputs and unavailability of skilled labour in time were expressed as constraints by 78, 70 and 62 per cent of the respondents, respectively. Lack of subsidy for inputs was seen as problem by 44 per cent of the respondents. Lack of responsible support price was reported by 52 per cent of the respondents. Some of the respondents expressed that the subsidy amount given by the State and Central Government was very low compared to the actual sale price of various inputs recommended. Lack of awareness and knowledge about certain recommended technologies was the response given by 22 per cent of the respondents. Weak extension activities at village level were reported by 66 per cent of the respondents. Lack of conviction in new technology was also expressed by 28 per cent of the respondents in the pulses cultivation. Majority of the respondents were not convinced about the merits of production technologies and did not adopt them.

Table 2: Constraints faced by the farmers in adoption of rape seed and mustard production technologies

(n=50)

Constraints	N	%age	Ranks
Bio-physical constraints			
• Unavailability & no use of high yielding varieties in time	38	76.00	I
• High cost of seeds	28	56.00	II
• Heavy weed infestation	20	46.00	III
• High incidence of disease and insect pest	19	38.00	IV
Socio-economic constraints			
• High cost of inputs	35	70.00	II
• High rates of labour	39	78.00	I
• Unavailability of skilled labour	31	62.00	III
• Lack of subsidy for inputs	22	44.00	V
• Lack of support price	26	52.00	IV
Technological constraints			
• Lack of awareness about recommended technologies	11	22.00	III
• Lack of conviction, poor management	14	28.00	II
• Weak extension support at village level	33	66.00	I

CONCLUSION

The study revealed that 56 per cent of the respondents adopted the pulses production technology to low level whereas, 36 and 8 per cent of the respondents adopted to medium and high level, respectively. The maximum pulses growers were facing hindrances in the production technology due to unavailability of seeds of high yielding

varieties in time. High cost of seed, heavy weed infestation, and high incidence of pest and diseases were other important constraints perceived by the respondents. It is recommended that efforts should be intensified to create awareness and enhance knowledge.

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