Research Article

Constraints faced by the wheat growers in adoption of wheat production technology

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SUMMARY : The study was conducted to find out constraints faced by wheat growers in adoption of wheat production technology. The constraints which were most perceived by the wheat growers were non-availability of production inputs at village level, lack of easily available credits, fragmentation of land holding, lack of soil testing facilities at nearby place and high cost of diesel.

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BACKGROUND AND OBJECTIVES

Wheat (*Triticum aestivum* L.) is the second most important cereal crop after rice in India. It plays a vital role in stabilising national food supply and ensuring food-cum-nutritional security. Presently, India is the second largest wheat producing country in the world, next to China. Wheat crop is grown under adverse agro-climatic conditions and occupies more than 25 million hectare areas in India, with the production above 72 million tonnes, having national average productivity of 2800 kg/ha. The major wheat growing states of India are Uttar Pradesh, Punjab, Hariyana, Rajasthan, Madhya Pradesh and Bihar, producing 25.02, 15.50, 9.44, 6.39, 5.63 and 4.7 million tonnes of wheat, respectively. Bihar accounts for 2.3 million hectare areas with 4.7 million tones production and 2.1 tones per hectare productivity. Which is much lower than the north-western wheat growing states of country. Wheat is also the second most important cereal crop after rice (59.6%) in the Madhubani district of Bihar. The district occupies 26.05 per cent area under wheat followed by pulses (7.34%) and oil seed (4.25%). But inspite of vast area and immense potentiality for boosting wheat production, Madhubani still remains one of the deficit district due to its low productivity. This low production and productivity can be enhanced if the farmers are provided information related to latest wheat production technology including the new varieties. The demand for wheat in India by 2020 has been projected to be between 105 to 109 million tones. Most of this increase from the present level of 72.06 million tones (2011-12) has to come from increase in productivity, as the land area under wheat is not expected to expand further. Efficient management of production input along with varietals improvement is the two basic aspects that can help us in achieving the target amidst various constraints. In Bihar, land vacated by late sown paddy, early potato or other late maturing *Kharif* crops are increasingly being put to wheat cultivation. A sizeable chunk of area also remains waterlogged or wet till early or mid December, where wheat is sown when the water recedes. Cumulatively about 40 per cent of wheat area, in the state, is covered under late or very late sown wheat with low level of productivity. The expansion of crop cultivation in unfavourable area leads to decline in productivity. Looking to these facts, the present study was carried out with

the objective to ascertain the constraints faced by the wheat growers in adoption of wheat production technology.

RESOURCES AND METHODS

The study was conducted in Madhubani district of North Bihar, was purposely selected for the study. There are twenty one blocks of Madhubani district. Out of twenty one blocks, two blocks were selected on the basis of the productivity figure. Rajnagar block (with highest productivity figure) and Kaluahi (with lowest productivity figure) were selected as locale of the study. Further, two villages from each block were chosen following the same criteria. Finally 45 respondents from each village were selected by following the random sampling technique from each categories; Hence, the sample respondents for the study constituted of the wheat growers belonging to small, medium and large farmers groups in their size in each strata of the four selected villages from two blocks. In this way, finally total 180 respondents were selected for the study *i.e* 45 respondents from Lakshmipur, 45 respondent from Kasiauna, 45 respondent from Karmauli and 45 respondents from Babupali village of Rajnagar and Kaluahi blocks, respectively. An interview schedule was prepared in view of the objective of the study and data were collected by personal interview from the selected wheat growers. The wheat growers were asked to give the information about the constraints countered by them. For each of these constraints total number of wheat growers in percentage was workout and rank order was given from the highest percentage to the lowest percentage.

OBSERVATIONS AND ANALYSIS

The ultimate objective of generation of any technology, particularly in the field of agriculture, is its speedy diffusion and quicker adoption by the farmers at large. But a number of constraints might be held responsible for slowing down the rate of adoption of that technology. The Table 1 shows that, the constraints perceived by the wheat growers.

Input related constraints:

A perusal of Table 1 indicates the various inputs related constraints. Under this category a total of seven constraints were listed and ranked by the individual respondent. Non-availability of inputs at village level was observed as the most serious constraints, followed by lack of information about recent inputs (seed, insecticides, fertilizer and weedicides) and lack of reliable source of inputs. As this area is inhabited by poor farmers having small holding, lack of information about recent inputs was ranked second. Other constraints such as lack of reliable source of inputs and lack of delivery system at village level were also ranked in higher order.

Technological related constraints:

Most of the farmers of the study areas were small and medium and were facing technical constraints seriously. Lack of soil testing facility at nearby place and lack of knowledge about fertility status of soil and soil testing were ranked first and second, respectively. Under this category lack of knowledge about doses and rate of fertilizer, weedicides and insecticide application was ranked third. Lack of water for irrigation for their crop was ranked fourth. This constraint was found unique in nature. On the one hand farmers were irrigating their crop three to five times; on the other hand they ranked it among the major constraints. It is because of reason that the water table goes down due to rise in temperature during the first fortnight of March and by the second fortnight of March wells, canals and other reservoirs get dried. In order to harness the irrigation potential suitable short duration and early maturing varieties should be promoted in the district.

Economic related constraints:

Under economic constraints, lack of easily available credit was perceived most prominent. High rate of interest and exploitation by money lenders was ranked second. Dominance of non-institutional source of credit and high cost of diesel was ranked third and fourth, respectively. Farmers feel that there is difficulty in repayments due to crop failure and they ranked fifth. The problems at first and fifth ranks indicated that bank were not facilitating loan disbursement to the farmers. Farmers were bound to take loans from money lenders to avoid the complicated bank procedures.

Market related constraints:

Under this category out of four constraints perceived by them, first rank was assigned to the constraints lack of knowledge of support procurement price (82.22%). This showed that the unawareness of the farmers about the government policies. As the government agencies are not involved in procurement of wheat from the farmers in the state, there is need to develop organized marketing infrastructure throughout the state and farmers should be sensitized towards to cooperative marketing of their produce, across the country to fetch better price. The other constraints perceived by the farmers in order of their importance in descending order were poor marketing facilities resulting high risk (77.22%), lack of knowledge about latest market measure (72.22%) and exploitation by leaders/archeries (70.55%) were ranked second, third, and fourth constraints, respectively.

Miscellaneous constraints:

Among the miscellaneous constraints, fragmentation of

land was ranked first by 85.00 per cent of the farmers. Poor state extension machinery, high risk of natural hazards, non-availability of storage facilities, lack of information source on wheat production at village level and non-availability of labour during peak season and high rate of wages were ranked II, III, IV, V and VI, respectively.

From Table 1 regarding overall rank, the most prominent constraints perceived by wheat growers was assigned to the first rank, non-availability of inputs at village level (86.11%). This was followed by other descending order constraints like, lack of easily available credit (85.55%), fragmented land holding (85.00%), lack of information about recent inputs (84.44%) and lack of soil testing facilities at nearby place. Similarly Jaiswal and Sharma (1990) also studied the constraints in adoption of improved technology of rice.

Table 1: Constraints faced by the wheat growers in adoption of wheat production technology (n=180)

Sr. No.	Constraints	Frequency	Percentage	Rank	Overall rank
Input related constraints					
i.	Non-availability of funds for purchase	125	69.44	VI	XXVII
ii.	High cost of inputs	129	71.66	V	XXIII
iii.	Lack of delivery system at village level	137	76.11	IV	XVI
iv.	Lack of reliable source of inputs	149	82.77	III	VII
v.	Non-availability of input at village level	155	86.11	I	I*
vi.	Lack of information about recent inputs (seed, fertilizer, insecticide and weedicides)	152	84.44	II	IV*
vii.	Adulteration of inputs	123	68.33	VII	XXIX
Technological constraints					
i.	Non-availability of power machine at proper time	136	75.55	VI	XVII
ii.	High rental charge of machinery	128	71.11	VII	XXIV
iii.	Non-availability of diesel at proper time	126	70.00	VIII	XXVI
iv.	Lack of knowledge about doses/rates	144	80.00	III	XI
v.	Lack of information about the importance of organic matter in soil	140	77.77	V	XIII
vi.	Lack of knowledge about fertility status of soil and soil testing	147	81.66	II	IX
vii.	Lack of soil testing facility at nearby place	151	83.88	I	V*
viii.	Non-availability of FYM	100	55.55	IX	XXX
ix.	Lack of irrigation facilities	143	79.44	IV	XII
Economic constraints					
i.	Lack of easily available credit	154	85.55	I	II*
ii.	Dominance of non-institutional source of credit	135	75.00	III	XVIII
iii.	High rate of interest and exploitation by money lenders	150	83.33	II	VI
iv.	Difficulty in repayment due to crop failure	132	73.33	V	XXI
v.	High cost of diesel	134	74.44	IV	XIX
	Marketing constraints				
I	Poor marketing facilities resulting high risk	139	77.22	II	XIV
ii.	Lack of knowledge of support procurement price	148	82.22	I	VIII
iii.	Lack of knowledge about latest market measure	130	72.22	III	XXII
iv.	Exploitation by leaders/arhaties	127	70.55	IV	XXV
Miscellaneous constraints					
i.	Non-availability of labour during peak season and high rate of wages	95	52.77	VI	XXXI
ii.	Non-availability of storage facilities	133	73.80	IV	XX
iii.	High risk of natural hazards	138	76.66	III	XV
iv.	Fragmentation of land holding	153	85.00	I	III*
v.	Lack of information source on wheat production at village level	124			
vi.	Poor state extension machinery	146	81.11	II	X

Conclusion:

It is clear from the above discussion that majority of wheat growing farmers perceived constraints in the adoption of wheat production technology were non-availability of input at village level, lack of easily available credit, fragmentation of land holding, lack of information about recent inputs (seed, fertilizer, insecticide and weedicides), lack of soil testing facility at nearby place.

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