



Research Article

Adoption behaviour of wheat production technology

■ B.S. MEENA

ARTICLE CHRONICLE :

Received:
30.05.2012;

Revised :
29.08.2012;

Accepted:
28.09.2012

SUMMARY : The study was conducted to find out the adoption pattern of farmers' on wheat production technologies in Sriganganagar district of Rajasthan with a randomly selected 150 wheat farmers from five villages. Findings of the study revealed 52.00 per cent respondents had adopted the wheat production technologies at medium level followed by 31.33 per cent at higher adoption level and 16.67 per cent at low level of adoption of package of practices of wheat crop recommended by the scientists of ARS, Sriganganagar. The sizeable number of farmers was having high knowledge of wheat production technology perhaps due to large land holding, and high extension contact. The adoption of individual package of practices was studied and found that more than 70 per cent farmers having full adoption of HYVs, land preparation, seed treatment, fertilizers use, manual weed control, irrigation and use of FYM. Farmers using recommended seed rate and sowing crop on time was 69.33 and 67.33 per cent, respectively. Partial adoption level of wheat improved technologies found in use of weedicides, plant propagation and sowing time. This might be due to lack of knowledge about the improved production technologies among the wheat farmers. The findings were passed on to scientists and extension officials of the districts for taking necessary steps to bridge the gap in adoption of wheat production technologies.

How to cite this article : Meena, B.S. (2012).Adoption behaviour of wheat production technology. *Agric. Update*, 7(3&4): 283-286.

KEY WORDS:

Wheat, Package of practices, Adoption

BACKGROUND AND OBJECTIVES

India is one of the main wheat producing and consuming countries of the world. After the Green Revolution in the 1970's and 1980's the production of wheat has shown a huge increase. The major states that are involved in the cultivation of wheat are those located in the plains like Uttar Pradesh, Punjab and Haryana and Rajasthan. They account for nearly 80 per cent of the total wheat produced in the country. Wheat is a *Rabi* crop that is grown in the winter season. Sowing of wheat takes place in november to december and harvesting is done during the months of april. The wheat crop needs cool winters and hot summers, which is why the fertile plains of the Indo-Gangetic region are the most conducive for growing it. Though well-drained loams and clayey loams are considered the ideal soil for wheat, good crops of wheat have also been raised on sandy loams and black soils of the peninsula region. The enormous pressure to produce more food from less land with shrinking

natural recourses is a tough task. Presently, the area under wheat is almost stagnant and there is no scope for horizontal expansion. It needs to improve the production technologies of the crop and same have to be adopted by the wheat growers to obtain higher level of productivity (Daya Ram *et al.*, 2010). Irrigated North Western Plain Zone (I b) comprising of Sriganganagar and Hanumangarh districts is situated in the North-Western part of Rajasthan covers a geographical area of 20.6 lac hectares in which about 15.5 lac hectare is net cultivated area and 60 per cent of net cultivated area is irrigated. Gang, Bhakra and Indira Gandhi canals are the main source of irrigation in the region. Wheat is an important *Rabi* crop in canal irrigated north western zone 1 b of Rajasthan. Scientist of Agricultural Research Station (SKRAU), Sriganganagar has developed improved production technologies of wheat for higher yield in irrigated condition. This study was designed to know the adoption of improved production technology by farmers of the zone 1 b

Author for correspondence :

B.S. MEENA
Department of
Agricultural Extension,
Agricultural Research
Station (S.K.R.A.U.),
SRIGANGANAGAR
(RAJASTHAN) INDIA
Email: bsmeena1969@
rediffmail.com

of Rajasthan. The outcomes of the study have provided a sound basis for further improvement in production technologies for wheat crop to achieve higher level of productivity.

RESOURCES AND METHODS

The present study was undertaken in five villages *viz.*, Jameetsinghwal, Odki, Mirjewala, Netewala and Kundawali of Sriganganagar district in Rajasthan. A sample of 150 farmers, thirty from each village was selected randomly for studying the adoption pattern of production technologies. Technology adoption pattern was measured by the extent of gap *i.e.* difference between existing practices and recommended package of practices. The individual practices adoption was measured in three point continuum- full adoption, partial adoption and nil adoption. The farmers who use the whole technology as recommended were grouped in full adoption and farmers who use only a component of particular recommended technology had taken in the partial adoption category. The respondents' farmers who did not use a particular wheat technology were grouped into nil adoption categories. A schedule was constructed for assessing the gap in adoption covering all packages of practices of wheat crop and administered to individual respondent. Data collected were analyzed as per objective of the study with suitable statistical techniques.

$$\text{Adoption (Wheat technology)} = \frac{\text{Obtained score}}{\text{Max. obtainable score}} \times 100$$

OBSERVATIONS AND ANALYSIS

The main findings and discussion of the research were being presented theme wise below:

Adoption level:

Adoption level of wheat growers have been calculated and presented in the Table 1.

Table 1 showed that majority of farmers (52%) belonged to medium level of adoption followed by high level (31.33 %). Approximate one third of the farmers are in high level of adoption category might be due to having large land holding and have better access to information agro-technologies. Remaining 16.67 per cent of respondents fell in low level of adoption perhaps due to small size of land holding and lack of knowledge of improved wheat production technologies. The

results of the study are in conformity with findings of Sharma *et al.* (2010) reported similar results on their study on adoption behaviour of rice growers. However, the results differed with the findings of Kumbhare and Singh (2011) who reported more number of farmers in high level of adoption.

Adoption behaviour:

The adoption behaviour of individual wheat production technologies have been worked out and presented in Table 2.

Land preparation and sowing:

The study found that majority of farmers (70%) was using recommended land preparation practices while 30 per cent did not followed them as recommended. This may be due to late harvesting of previous crop and lack of canal water supply. The wheat crop was sowed on recommended sowing time (67.33%) while about one third respondents (32.67%) did not followed the actual period. Among the respondents 69.33 per cent used recommended wheat seed. The farmers who sowed their wheat crop in normal sowing time used recommended seed rate (100 kg./ha.) While in late sown crop it was partially deviate- excess or less. Majority of farmers (71.33%) treated their wheat seed with recommended insecticides, while 20 per cent farmers treated seed only with one insecticide or bio-fertilizers culture and remaining 8.67 per cent farmers did not treated wheat seed before sowing (Table 2).

HYVs:

The study indicated that 73.33 per cent of respondents were using high yielding varieties of wheat crop and 10 per cent of the respondents were using local wheat varieties perhaps due to non-availability of seed on time and taste of particular local seed. Remaining 16.67 per cent of the wheat growers used both HYVs and local varieties seed (Table 2).

Manures and fertilizers:

At the time of field preparation, 78 per cent of the respondents used Farm Yard Manure as per availability (2-3 ton/ha.) and 18 per cent used less than recommended. Majority of the respondents (83.33%) applied chemical fertilizers (NPK) as basal dose at sowing and 13.33 per cent use only N fertilizers as basal and remaining farmers did not used this chemical fertilizers as basal dose. In the standing wheat crop, 90 per cent of the farmers under study applied urea as top dressing at first and second irrigation and 6.67 per cent of

Table 1 : Categorization of respondents extent of adoption

Sr. No.	Level of adoption	Score range	No.	(n=150) %
1.	Low (Mean-SD)	<15	25	16.67
2.	Medium(Mean ±SD)	15-28	78	52.00
3.	High (Mean+SD)	>28	47	31.33

Mean= 21.5 SD = 6.5

Table 2 : Extent of adoption of wheat production technology**(n=150)**

Sr. No.	Wheat technologies	Extent of adoption		
		Full adoption	Partial adoption	No adoption
1.	Land preparation	105 (70.00)	45 (30.00)	---
2.	HYVs	110 (73.33)	25 (16.66)	15 (10.0)
3.	Seed rate	104 (69.33)	42 (28.00)	4 (2.66)
4.	Sowing time	101 (67.33)	49 (32.66)	--
5.	Seed treatment	107 (71.33)	30 (20.00)	13 (8.67)
6.	Farm Yard Manure (FYM)	117 (78)	27 (18.00)	6 (4.00)
7.	Fertilizers:			
	Basal (NPK)	125 (83.33)	20 (13.33)	5 (3.33)
	Top dressing	135 (90.00)	10 (6.67)	5(3.33)
8.	Irrigation	87 (58.00)	23 (15.00)	40(27.00)
9.	Weed management:			
	Hoeing and weeding	143 (95.33)	4 (2.66)	3 (2.00)
	Use of weedicides	53 (35.33)	85 (58.66)	12 (8.00)
10.	Plant Protection Measures	84 (56.00)	40 (26.66)	26 (17.33)
11.	Harvesting and Threshing	122 (81.33)	28 (18.66)	--

Figures in parenthesis indicate percentage

them other fertilizer like DAP as top dressing (Table 2).

Irrigation:

The main source of irrigation water in the study area is Gang canal. The study found that 58 per cent farmers applied 5-6 irrigations as recommended in package of practices while 15 per cent applied less than four irrigations perhaps due non availability of canal water and remaining 27 per cent applied more than 6 irrigations, excess water use which needs to be discourage by the extension agency (Table 2).

Weed management:

For effective control of weeds in wheat crop, hoeing and weeding and use of weedicides are recommended. Table 2 revealed that majority of the farmers (95.33%) practiced hoeing and weeding as recommended, while 35.33 per cent farmers also used recommended weedicides to control weeds in their wheat fields and 58 per cent used both manual and weedicides. Presently farmers are more inclined towards using weedicides to control weeds in wheat crop as labour cost is rising in the study area.

Plant protection:

It is evident from Table 2 that majority (56%) of farmers followed plant protection measures as per recommendation and 26.66 per cent partially adopted the measure and remaining (17.33%) farmers did not adopt the plant protection measures in their wheat crop. The poor adoption of plant protection practices might be due to lack of knowledge among farmers

and requires sincere efforts by the extension agency in this area.

Harvesting and threshing:

The results indicated that majority (81.33%) of the farmers used sickle and hand method to harvest their wheat crop and threshing was done with tractor drawn thresher. Remaining (18.33%) farmers got harvested their wheat crop with hired combine harvester.

Conclusion:

The study was conducted in Sriganganagar district of Rajasthan to ascertain the adoption level of wheat production technologies with randomly selected 150 wheat growers. The study found that more than half (52%) of farmers belonged to medium level of adoption of wheat production technologies where as 31.33 per cent farmers were having high adoption of the wheat package of practices. The adoption of individual package of practices was studied and found that more than 70 per cent farmers having full adoption of HYVs, land preparation, seed treatment, fertilizers use, manual weed control, irrigation and use of FYM. Farmers using recommended seed rate and sowing crop on time was 69.33 and 67.33 per cent, respectively. Partial adoption level of wheat improved technologies was found in use of weedicides, plant propagation and sowing time. This might be due to lack of knowledge about the improved production technologies among the wheat farmers.

REFERENCES

Daya Ram et al. (2010). Correlates of improved wheat production technology. *Indian Res. J. Ext. Edu.*, **10** (1) : 62-64.

Kumbhare, N.V. and Singh, K. (2011). Adoption behaviour and constraints in wheat and paddy production technologies. *Indian Res. J. Extn. Edu.*, **11** : 41-44.

Sharma, F.L., Verma, R.C. and Jain, H.K. (2010). Adoption behaviour of rice growers in southern Rajasthan. *Rajasthan J. Extn. Edu.*, **17 & 18** : 187-190.