

## EXTENT OF ADOPTION IN IMPROVED WHEAT TECHNOLOGY

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### ABSTRACT

*Wheat is a unique gift of nature to mankind as it can be moulded into innumerable products. Though much progress has been made in the field of agriculture research and education, the full benefits of these developments could not be realized by the farming community because of low adoption of technologies at the user's level. Research findings have indicated that there is an alarming knowledge practice gap in agriculture. It is estimated that the Indian farmers, in spite of huge human and financial resource allocation are adopting only 30 per cent of the available technologies. In order to meet the future food demand, the farmers must adopt the recommended technologies. Majority of farmers adopted recommended varieties and followed the chemical seed treatment for control of seed borne diseases. Regarding the basal dose application of N, P and K, only a few farmers applied nitrogen as basal dose. Majority of farmers applied phosphorus as basal dose and none of the farmers applied potash as basal dose. A few respondents applied the bio-fertilizers and the majority of farmers adopted chemical control.*

**Key words:** Yield Gap; Wheat; Adoption; Wheat technology

### INTRODUCTION

Wheat is a unique gift of nature to mankind as it can be moulded into innumerable products. Wheat is consumed by nearly 35 % of world population and contributes 20% food calories jump in wheat production from 12.3 (million tones) mt in 1965 to an all time record of 73.2 mt in 1999 which led the country to the self sufficiency in food (Nagarajan 1999). About 65 percent of the total wheat area of the country is grown under irrigated condition while the remaining is rainfed. The area under high yielding varieties has gradually gone up in last few years and today about 50 per cent of the total wheat area of the country is under high yielding varieties. The demand of wheat in India has been projected to be 109 MT by 2020. The Indian population is likely to reach an estimated 111.7 MT by 2012 A.D. retaining around the 33 per cent of population below the poverty line. Though much progress has been made in the field of agriculture research and education, but full benefits of these developments could not be realized by the farming community because of low adoption of technologies at the user's level. Research findings indicated that there is an alarming knowledge practice gap in agriculture. It is estimated that the Indian farmers in spite of huge human and financial resource are adopting only 30 percent of the available technologies (Saravanan and Gowda, 2000). In order to meet the future food demand, the farmers should adopt the recommended technologies. Keeping in this view, the study was planned with the following specific objectives;

1. To study the yield gap in wheat crop in the operational area.
2. To identify the potential technologies of wheat for adoption at users' level.
3. To study the extent of adoption of improved wheat technologies.

### METHODOLOGY

Village Bhopani of district Faridabad was selected purposively because the farmers of this village had small and marginal land holdings and were adopting paddy-wheat cropping pattern. To identify technologies for adoption in order to reduce the yield gap, a transect walk (participatory rural appraisal technique) was organized by involving the team of KVK with wheat growers. A semi-structured interview schedule was prepared to collect detailed information regarding improved wheat production technology. The randomly selected wheat growers of Bhopani village numbering 100 were considered as respondent for the purpose of the data collection. The data were collected through personal interview method. The yield gap refers to the quantitative difference between the potential farm yield and the actual farm yield obtained by the farmers. The yield gap was worked out by using the following formula:

$$\text{Yield gap} = \frac{\text{Potential yield} - \text{Av. Actual yield}}{\text{Potential yield}} \times 100$$

### RESULT AND DISCUSSION

Potential yield is the highest yield recorded in the study area during past five years. Average actual yield is the mean of individual actual yield. A high yielding variety PBW343 was grown in the area which is recommended for 50 q/ha potential yield but being harvested on 40.5 q/ha average actual yield. Showing yield gap of 22.9 per cent. The non-adoption of improved wheat practices might be attributed to yield gap.

*Extent of adoption:* In order to understand the reasons for low yield level, an analysis of extent of adoption of improved wheat practices was done. The actual adoption levels of the technologies by the farmers were also studied and the results are presented in Table 1.

Table 1. Extent of adoption of improved practices in wheat production

(N=100)				
S. No.	Practices	Recommended Practices	Existing Practices	Adoption (%)
1.	Variety	WH-291, WH-283 WH-147 HD-2329 HD-2285 RAJ 3765	HD-2329 HD-2285 WH-291	85
2.	Chemical seed treatment for			
a.	Seed born disease control	Bavistin/Vitavax @ 2 gm/Kg seed	Bavistin/vitavax @ 2 gm/Kg seed	99
b.	Termite Control	Endosulfan @ 3.5 ml/kg seed or Chlorophyriphos @ 1.5 ml/kg seed	Use of Chemicals 45 ml/ seed provided by pesticides dealers	15
3.	Application of chemical fertilizer (Basal Kg/acre)			
	Nitrogen (N)	30	08	08
	Phosphorus(P)	24	23	95
	Potash (K)	24	-	0.0
	Zinc Sulphate (ZnSO <sub>4</sub> )	10	10	100
4.	Method of application of nitrogenous fertilizers			
	Nitrogen split dose	(3 times)	2 times	20
5.	Use of Bio-fertilizer	3 Packets	1 Packet	5
6.	Irrigation	6	3-4	32
7.	Chemical weed control			
a.	For broad leaves	2, 4-D Sodium Salt (90%) @ 250 gm/acre after within 30-35 days sowing	2, 4-D Sodium Salt 65 @ 250 gm/ acre at the time of first irrigation	65
b.	For <i>Phalaris minor</i>	Isoproturon 75% @ 500 gm/acre within 30-35 days after sowing	Isoproturon 75% 78 @ 500gm/acre at the time of first irrigation	78

1. *Variety* : It could be seen from Table 1 that majority of farmers adopted recommended varieties. They were much concerned about varieties HD 2329, HD 2285 and WH291. Sowing of wheat was delayed due to harvesting of paddy crop.

2. *Chemical seed treatment* : Majority of farmers (92 per cent) followed the chemical seed treatment for control of seed borne diseases. They were using the recommended dose because the wheat seed bag contained the required amount of chemical package for control of seed born diseases. For the control of

termite, only 15 per cent farmers have adopted the recommended dose. Most of the farmers were adopting the locally available chemicals and in excess quantity. This might be due to lack of complete information with regard to chemical seed treatment for termite control.

3. *Application of basal dose of chemical fertilizers* : Regarding the basal dose application of N, P, K only 8 percent farmers applied nitrogen as basal dose. 95 per cent farmers applied phosphorus as basal dose and none of the farmers applied potash as basal dose. This might be due to lack of incomplete information with regard to application of basal of chemical fertilizers i.e. nitrogen and potash.

4. *Method of application of nitrogenous fertilizers* : Only one fifth (20 per cent) of the respondents adopted the recommended method of application of nitrogenous fertilizers. This might be due to the lack of complete information with regard to method of application of nitrogenous fertilizers.

5. *Use of bio-fertilizers* : Only few respondents (5 %) applied the bio-fertilizer. This was due to non-availability of bio-fertilizer in time. Majority of the farmers felt that there is no advantage in applying bio-fertilizers resulting in such a non-adoption. This may be probably due to the lack of visible impact of bio-fertilizers.

6. *Irrigation* : Of the total respondents, 32 per cent of the respondents followed the recommended number of irrigation. This might be due to the erratic supply of electricity because most of the farmers were having electricity operated water tube well in the area.

7. *Chemical weed control* : Majority of farmers adopted chemical weed control i.e. 65 per cent farmers applied chemical weed control for broad leave weeds and 78 per cent farmers used chemical weed control for *Phalaris minor*. For chemical weed control, most of the farmers did not adopt the recommended time. This might be due to wrong method of application of chemicals. Farmers generally broadcast these chemicals by mixing with urea at the time of first irrigation.

## CONCLUSION

There was still a yield gap in wheat crop. The adoption of recommended wheat production technologies was medium to high. The yield gap could be minimized by redesigning the training programmes after conducting the gap analysis for wheat production technologies and identifying the training needs of wheat growers.

## REFERENCES

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