

Technological Gap in Rice–Wheat Production System

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ABSTRACT

Rice and wheat are the staple food of larger part of India's population and also most important cereal crops of kharif and rabi seasons. The study was carried out on the technological gap in the recommended rice and wheat production system in Purwa and Sumerpur blocks of Unnao district of Uttar Pradesh in 2004-05. A sample of 80 respondents was selected from villages. From each village 10 resource rich and 10 resource poor farmers were selected on the basis of stratified random sampling technique and data were collected with the help of pre-tested interview schedule. The study revealed that majority of resource rich and resource poor farmers did not follow seed treatment in rice. However, for almost all the practices significant number of farmers exhibited partial technological gap. The gaps were least towards nursery management practices like seedbed preparation, weed management and selection of varieties. Regarding rice production practices in main field, resource rich and resource poor farmers did not follow gap filling and in almost all the practices significant number of farmers reflected partial technological gaps. The practices like transplanting distance, harvesting and threshing, use of recommended aged seedlings reflected low gaps in case of most of the farmers. In case of wheat, farmers did not follow plant protection measures whereas more than 80 per cent farmers did not apply seed treatment of wheat. However, for almost all the practices, significant number of both categories of farmers showed partial technological gap in wheat. The practices of wheat like seed rate, harvesting and threshing and selection of varieties showed least gap in case of both categories of farmers.

Key words: Rice-wheat cropping system; Technological gap in rice and wheat

Rice and wheat are the staple food of larger part of India's population and also most important cereal crops of kharif and rabi seasons, respectively. Technology is the prime mover of change and thus, technology fatigue and technology gap should be avoided. This will be a call for revitalization of research, education and extension system. The present study was thus carried out with the specific objectives to find out the technological gap in rice and wheat production system.

METHODOLOGY

The present study was conducted in the Purwa and Sumerpur blocks of Unnao district of Uttar Pradesh selected purposively because of the dominance of rice-wheat production system in Unnao district. Thereafter, four villages, two from each block were selected on random basis. From each village, 10 resource rich (RR) and 10 resource poor (RP) farmers were selected on the basis of stratified random sampling. Thus, a sample of 80 respondents in total was selected for the final interview. The data were collected personally with the help of pre-tested scheduled. The technological gap was computed on a three-point scale of full, partial and no gap.

RESULTS AND DISCUSSION

Level of Technological gap in cultivation of rice : The technological gap has been computed on a three point

scale of full, partial and no gap. The data so gathered were analysed and presented in Table 1 and 2.

The findings (Table 1) clearly show that about 82 and 100 per cent of the resource rich and resource poor farmers, respectively did not follow seed treatment whereas, 15 and 25 per cent did not apply chemical fertilizers in raising nursery, rather they used farm yard manures. However, for almost all the practices, significant number of both categories of farmers exhibited partial technological gaps. The gap was least in case of practices like seed rate, seedbed preparation, weed management and irrigation.

As far as rice practices in main field, the findings also reveal that 100 per cent respondents did not follow gap filling whereas, 25 and 50 per cent and 20 and 50 per cent did not apply recommended quantity of fertilizers and time of fertilizers application, respectively. However, for almost all the practices, significant number of farmers (resource rich and resource poor) reflected partial technological gap. The gap was the least in case practices like - harvesting and threshing, transplanting distance, weed management and use of aged seedlings.

The analysis presented in Table 2 exhibited more gap in case of resource poor farmers for various nursery and main field practices of rice. Higher gap was visible in case of seed treatment, selection of field, use of varieties for both farmer's categories.

Table 1 : Level of technological gap in rice cultivation (N=80)

Sl. No.	Practices	Full		Partial		No	
		RR	RP	RR	RP	RR	RP
(A) Nursery management							
1.	Selection of field	-	-	25 (62.50)	40 (100.00)	15 (37.50)	-
2.	Field preparation	-	-	32 (80.00)	37 (92.50)	8 (20.00)	3 (7.50)
3.	Varieties	-	-	30 (75.00)	40 (100.00)	10 (25.00)	-
4.	Seed rate	-	-	-	12 (30.00)	40 (100.00)	28 (70.00)
5.	Treatment of seed	33 (82.50)	40 (100.00)	-	-	7 (17.50)	-
6.	Sowing time	-	20 (50.00)	29 (72.50)	12 (30.00)	11 (27.50)	8 (20.00)
7.	Required seed bed	-	-	10 (25.00)	20 (50.00)	30 (75.00)	20 (50.00)
8.	Sowing of seed	-	-	20 (50.00)	30 (75.00)	20 (50.00)	10 (25.00)
9.	Fertilizers quantity	3 (7.50)	10 (25.00)	24 (60.00)	25 (62.50)	13 (32.50)	5 (12.50)
10.	Irrigation	-	-	15 (37.50)	30 (75.00)	25 (62.50)	10 (25.00)
11.	Weed management	-	-	19 (47.50)	20 (50.00)	21 (52.50)	20 (50.00)
(B) Main field							
12.	Field preparation	-	10 (25.00)	27 (67.50)	26 (65.00)	13 (32.50)	4 (10.00)
13.	Age of seedlings	-	12 (30.00)	18 (45.00)	21 (52.50)	22 (55.00)	7 (17.50)
14.	Transplanting distance	-	-	16 (40.00)	23 (57.40)	24 (60.00)	17 (42.50)
15.	Gap filling	40 (100.00)	40 (100.00)	-	-	-	-
16.	Fertilizer application	10 (25.00)	20 (50.00)	21 (52.50)	20 (50.00)	9 (22.50)	-
17.	Time of fertilizers application	8 (20.00)	20 (50.00)	20 (50.00)	14 (35.00)	12 (30.00)	6 (15.00)
18.	Irrigation	-	10 (25.00)	20 (50.00)	30 (75.00)	20 (50.00)	-
19.	Weed management	-	-	23 (57.50)	25 (62.50)	17 (42.50)	15 (37.50)
20.	Plant protection	-	15 (37.50)	30 (75.00)	25 (62.50)	10 (25.00)	-
21.	Harvesting and threshing	-	-	10 (25.00)	20 (50.00)	30 (75.00)	20 (50.00)

*Figures in parenthesis are percentage.

Table 2. Level of technological gap in rice cultivation (N=80)

S.No.	Practices	Level of Technological gap	
		RR	RP
1.	Field preparation	20.83	33.33
2.	Selection of field	26.67	30.83
3.	Varieties	25.00	33.33
4.	Seed rate	0.00	10.00
5.	Treatment of seed	55.00	66.67
6.	Sowing time	24.42	43.33
7.	Required seed bed	8.33	16.67
8.	Sowing of seed	16.17	25.00
9.	Fertilizers quantity	16.17	25.00
10.	Irrigation	12.50	25.00
11.	Weed management	15.83	16.67
12.	Field preparation	22.50	38.33
13.	Age of seedlings	15.00	37.50
14.	Transplanting distance	13.33	19.17
15.	Gap filling	66.67	66.67
16.	Fertilizer application	34.17	50.00
17.	Time of fertilizers application	30.00	45.00
18.	Irrigation	16.17	41.67
19.	Weed management	19.17	20.83
20.	Plant protection	25.00	45.83
21.	Harvesting & threshing	8.33	16.17
22.	Overall mean	22.44	33.67

Regarding main field operations too, resource poor farmers perceived more technological gaps for operations

like-gap filling, fertilizers application, plant protection management, time of fertilizer application and irrigation. The gaps were observed for the same crop operations practiced in case of resource rich farmers but magnitude of gaps were less as compared to resource poor farmers. Almost similar findings were obtained by Prakash et al. (2004).

Level of technological gap in cultivation of wheat : The findings (Table 3) revealed that about 85 and 100 per cent of the resource rich and resource poor farmers, respectively did not follow seed treatment whereas, 50 and 87.50 per cent did not apply weed management. About 100 per cent of the resource rich and resource poor farmers did not apply any plant protection measures in cultivation of wheat. However, for almost all the practices significant number of farmers in both categories exhibited partial technological gaps. The gap was least in case of practices like-seed rate, harvesting and threshing, selection of varieties and field preparation.

The analysis presented in Table 4 depicted that extent of gap was more in case of resource poor farmers for various crop management practices of wheat. Higher gap was visible in case of plant protection, seed treatment and weed management for both farmers' categories.

Table 3 Level of technological gap in wheat cultivation (N=80)

Sl. No.	Practices	Full		Partial		No	
		RR	RP	RR	RP	RR	RP
1.	Field preparation	-	-	20 (50.00)	36 (90.00)	20 (50.00)	4 (10.00)
2.	Selection of field	-	-	25 (62.50)	36 (90.00)	15 (37.50)	4 (10.00)
3.	Varieties	-	-	15 (37.5.00)	30 (75.00)	25 (62.50)	10 (25.00)
4.	Seed rate	-	-	-	8 (20.00)	40 (100.00)	32 (80.00)
5.	Treatment of seed	34 (85.00)	40 (100.00)	-	-	6 (15.00)	-
6.	Sowing time	-	-	23 (57.50)	30 (75.00)	17 (42.50)	10 (25.00)
7.	Fertilizer application (120:60:60)	-	-	10 (25.00)	34 (85.00)	30 (75.00)	6 (15.00)
8.	Time of fertilizer application	6 (15.00)	15 (37.50)	17 (42.50)	19 (47.50)	17 (42.50)	6 (15.00)
9.	Irrigation	-	10 (25.00)	22 (55.00)	23 (57.50)	18 (45.00)	7 (17.50)
10.	Weed management	20 (50.00)	40 (100.00)	5 (12.50)	-	15 (37.50)	5 (12.50)
11.	Plant protection	40 (100.00)	40 (100.00)	-	-	-	-
12.	Harvesting & threshing	-	-	8 (20.00)	12 (30.00)	32 (80.00)	28 (70.00)

*Figures in parenthesis are percentage

Table 4. Level of technological gap in wheat cultivation (N=80)

S.No.	Practices	Level of Technological gap	
		RR	RP
1.	Field preparation	16.67	30
2.	Selection of field	20.83	30
3.	Varieties	12.50	25
4.	Seed rate	0.00	6.67
5.	Treatment of seed	56.67	66.67
6.	Sowing time	19.17	25.00
7.	Fertilizer application	23.33	40.00
8.	Time of fertilizer application	24.17	40.83
9.	Irrigation	18.33	35.83
10.	Weed management	37.50	66.67
11.	Plant protection	66.67	66.67
12.	Harvesting and threshing	6.67	10.67
	Overall mean	25.21	37.00

Regarding other operations too, resource poor farmers perceived more technological gaps for practices like-time of fertilizer application, recommended amount of fertilizers application and irrigation. The gaps were reflected for the same crop operations practiced by resource rich farmers but magnitude of gaps were less as compared to resource poor farmers. The overall technological gap in cultivation of wheat was 25.21 and 37.00 per cent for resource rich and resource poor farmers, respectively.

CONCLUSION

It may be concluded that technological gap exist in adoption of recommended rice and wheat crops in the study area. Efforts should be made to bridge the gap. Intensive dissemination should be followed for better adoption.

REFERENCES

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