INTERNATIONAL RESEARCH JOURNAL OF AGRICULTURAL ECONOMICS AND STATISTICS
Volume 2 Issue 1 (March, 2011) Page : 151-153

Received : *September, 2010;* ***Accepted :*** *October, 2010*

Research Note

Adoption of high yielding varieties of paddy in Ranchi district, Jharkhand

JAI PRAKASH, B.K. SINGH AND RUBY MINZ

See end of the article for authors' affiliations

Correspondence to :

JAIPRAKASH
Department of Agricultural Economics, Ranchi Agriculture College, Birsa Agricultural University, Kanke, RANCHI (GUJARAT) INDIA

Key words : Paddy, Varieties, Adoption

Prakash, Jai, Singh, B.K. and Minz, Ruby (2011). Adoption of high yielding varieties of paddy in Ranchi district, Jharkhand, *Internat. Res. J. agric. Eco. & Stat.,* **2** (1) : 151-153.

For a strong agriculture system, it is necessary that productivity of rice crop be improved. It is because rice is the main staple food crop of the state of Jharkhand. As is well known increase in productivity brings quantitative rise in food production, more income and overall gainful employment among the peasant class (Yadiyal, 1981). This is also necessary because there is a limited scope for expansion of the area under rice in the state to increase food production. Thus, emphasis lies on to increase productivity of the crop. For this purpose, attention need to be given to improve the same by introducing new techniques of production among farmers, providing them required primary agricultural inputs such as seeds, fertilizers, insecticides/ pesticides etc. together with technical guidance and also financial helps from the institutional agencies. There are many factors which may affect farmers' decision to adopt HYVs of rice technologies. Past studies on adoption indicate that the adoption behaviour of farmers is governed by a diversified set of factors such as their socio-psychological and economic factors, characteristics of innovations and quality of extension work (Bhagat, 1983; Mahant, 1989; Jha, 1991; Hugar *et al.*,1992).

A practically feasible and readily adoptable technology to enhance production and productivity of rice is hybrid rice. Eighteen hybrids have been released so far and among them, the hybrids PHB-71, PA-6201, PA-6444, KRH-2, Sahyadri, PSD-1, NSD-2 and DRRH-1 are being cultivated on a large scale. The area under hybrid rice during 2004 was about 5.60 lakh hectares in the state. With the development of stable, widely adopted hybrids, large scale seed production and its distribution, aggressive technology transfer activities, this technology is moving faster than before. Rice hybrids with a yield advantage of 15-20 per cent over the existing varieties have become popular in Uttar Pradesh, Jharkhand, Chhattisgarh, Punjab, Haryana, Karnataka, Maharashtra and Goa states (Mishra, 2005).

The present study is being undertaken to evaluate the level of adoption of high yielding and hybrid varieties of paddy by the farmers of Ranchi district of Jharkhand state. The findings of this study will enable the state extension workers as well as Birsa Agricultural University to know the existing state of affairs with respect to farmers' knowledge, their attitudes and extent of adoption of high yielding and hybrid varieties of paddy.

The first requirement of the study was to select a suitable block in Ranchi district. For this, a list of those blocks of Ranchi district which have large area under paddy was prepared. As it was not possible to cover all those blocks for the study, due to limitations of both time and resources, Kanke block was selected purposively.

After selection of Kanke block, the next step was the selection of villages for the present investigation. This

was to be done keeping in view the specific objectives of the study. So, a list of those villages in Kanke block which have larger area under paddy was separated from all villages of the block with the help of Kanke Block headquarters. Among the list of villages, Husir, Semartola and Boreya were selected randomly for the selection of sample farmers.

Having selected the villages, a complete enumeration of all the three villages was done and a list of paddy growers of the three villages was prepared with the help of village level worker and local leaders of the villages. Forty five farmers, among all the paddy growers, were then selected randomly, which constituted the sample.

The results obtained from the present investigation have been presented in the following sub heads:

Adoption of different types of paddy on sample farms:

Table 1 shows the position of adoption of different types of paddy on sample farms. It is clear from the table that some farmers were growing only one type of paddy while others were growing more than one type. In percentage terms, 37.38 per cent farmers were the exclusive growers of HYV, 26.67 per cent of hybrid and only 13.33 per cent farmers were the exclusive growers of local variety of paddy.

Table 1 : Adoption of different types of paddy on sample farms

Sample farms	No. of farmers	Percentage
Growing HYV only	17	37.78
Growing hybrid only	12	26.67
Growing local variety only	6	13.33
Growing HYV and hybrid	4	8.89
Growing HYV and local variety	5	11.11
Growing hybrid and local variety	1	2.22
Total	45	100.00

It depicts that HYV were more popular in the study area and HYV seemingly replacing local paddy. Further, about 8.89 per cent farmers were found to have adopted HYV along with hybrid paddy. As far as the number of adopter farmers and non-adopters of HYV and hybrid is concerned, the number of adopter farmers was appreciably high. More than 73 per cent of the farmers were identified, having adopted HYV and hybrid paddy.

Area under different varieties of paddy on sample farms:

Area under of different varieties of paddy on total farm basis and per farm basis were analyzed and presented in Table 2. It is clear that, area occupied by different varieties of paddy was 84.82 hectares. About 55.14 per cent of total paddy area was occupied by high yielding varieties, 32.56 per cent by hybrid varieties and rest 12.50 per cent by local varieties.

Table 2 : Areas under different varieties of paddy on sample farms

Sr. No.	Varieties	Area (in ha.)		Percentage to total paddy area
		Total farm	Per farm	
High yielding varieties				
1.	IR-64	13.76	0.306	16.22
2.	IR-36	12.38	0.275	14.60
3.	BPT-5204 (Swarna)	6.88	0.153	8.11
4.	MT-7029 (Samba mahsuri)	4.11	0.091	4.85
5.	Basmati-370	2.69	0.060	3.17
6.	Birsa dhan-108	2.76	0.061	3.25
7.	Lalaat	1.48	0.033	1.74
8.	Sita	1.43	0.032	1.69
9.	Birsa dhan-102	1.28	0.028	1.51
	Total			55.14
Hybrid				
10.	JKRH-401	9.61	0.214	11.33
11.	PHB-71 (Pioneer)	8.23	0.183	9.70
12.	PA-6444 (Proagro)	5.50	0.122	6.48
13.	PAC-801 (Advanta)	4.11	0.091	4.85
	Total			32.56
Local varieties		10.60	0.236	12.50
	Total	84.82	1.885	100.00

Among high yielding varieties, IR-64 and IR-36 were found most popular having occupied 16.22 per cent and 14.60 per cent of total paddy area, respectively. Other high yielding varieties like BPT-5204 (8.11 %), Lalaat (1.74%), MT-7029 (4.85 %), Birsa Dhan-108 (3.25 %), Basmati-370 (3.17 %), Sita (1.69 %), Birsa Dhan-102 (1.51 %) were also grown. Total nine high yielding varieties were found to have been grown on sample farms.

Among hybrid varieties, JKRH-401 was found most popular and seemed to have occupied 11.33 per cent of total paddy area. Other hybrid varieties like PHB-71, PA-6444 and PAC-801 occupied, respectively, 9.7 per cent, 6.48 per cent and 4.85 per cent of total paddy area. Percentage area allocation of the local rice varieties were found to be minimum (12.50 %) indicating that hybrid and HYV rice varieties have almost replaced the practice of local paddy cultivation.

Conclusion:

From the results presented above it can be concluded that adoption level of modern rice varieties (*i.e.* HYVs and hybrids) is very high in comparison to local varieties in the study area. Among these varieties IR-64, IR-36 (HYVs) and JKRH- 401 and PHB-71 (hybrids) are found to be more popular than other varieties among the farmers of the study area.

Authors' affiliations:

B.K. SINGH AND RUBY MINZ, Department of Agricultural Economics, Ranchi Agriculture College, Birsa Agricultural University, Kanke, RANCHI (GUJARAT) INDIA

LITERATURE CITED

Bhagat, L.N. (1983). Factors determining adoption of new agricultural practices in tribal areas - A quantitative analysis. *Agril. Situ. India*, **38**(3): 127-130.

Hugar, L.B., Umesh, K.B.and Suryaprakash,S. (1992). Constraints in diffusion of new farm technology – An economic evaluation. *Agril. Situ. India*, **47**(1): 15-20.

Jha, C.B. (1991). A study of factors affecting adoption behaviour of farmers under special rice project in Banka region. Department of Extension Education, RAU, Pusa.

Mahant, G. (1989). A study on adoption of improved rice cultivation practices by the tribal farmers in Jorhat Sub-division of Jorhat district, Assam. Deptt. of Extension Education, A.A.U., Jorhat, Assam.

Mishra, B. (2005). More crop per drop. *The Hindu Survey of Indian Agriculture*, 41-42.

Yadiyaal, K.S. (1981). Impact of modern production technology on employment potential and income distribution in selected parts of rural Karnataka. *Mysore J. agric. Economics*, **12** (20): 344.

—*—*—*—*—*—*—*—*—