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An Analysis of Adoption Behavior of Hybrid Rice Grower in Balaghat District of Madhya Pradesh

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ABSTRACT: *The present investigation entitled* ***"****An analysis of adoption behaviour of hybrid rice growers in Balaghat district of Madhya Pradesh****"*** *was carried out in purposively selected four blocks of to assess the adoption behaviour of hybrid rice growers. A total of 320 hybrid rice growers were selected randomly as respondents and data were collected through personal interview schedule. The collected data were tabulated and analyzed statistically to draw appropriate conclusions. The study revealed that majority of the respondents (53.75%) were found in middle age group and educated up to primary level (25.62%) having medium size of family(59.38%). Majority (66.25%) of the respondents had medium experience of hybrid rice cultivation. Maximum number of the respondents having medium size of land holdings (2.1 to 4 ha) and have annual income between Rs. 20,001 to Rs. 40,000. Majority of the respondents (61.90%) were also obtained short term credit from co-operative societies. About 65.00 per cent of the respondents had medium extent of adoption regarding hybrid rice production technology.*

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I. INTRODUCTION

Rice (**Oryza sativa L**.) is a plant belonging to the family of grasses, Gramineae. There are three major food crops (wheat, rice, maize) of world and rice is one of the foremost cereal crops feeding over more than half of the world's population. It is grown in more than a hundred countries, with a total cultivated area of about 156 m. ha, producing more than 680 mt grains annually. About 90 per cent of the rice in the world is grown in Asia. Rice provides 27 per cent of dietary energy supply and 20 per cent of dietary protein intake in the developing world. The global production of rice has been estimated to be at the level of 680 mt and the area under rice cultivation is estimated at 156 m ha in 2009 (Anonymous, 2010a). This has been successfully demonstrated in the People's Republic of China, where hybrid rice technology appears to be a feasible and readily available option for raising the yield potential. The average yield of hybrid rice is at least 20 per cent more than that of inbred rice and it has been anticipated that hybrid rice technology will play a key role in ensuring food security worldwide in the new century (Yuan, 2010). Hybrid rice is any genealogy of rice produced by crossbreeding different kinds of rice. As with other types of hybrids, hybrid rice typically displays heterosis (or hybrid vigor) such that when it is grown under the same conditions as comparable high-yielding inbred rice varieties it can produce up to 30% more rice. High-yield crops, like hybrid rice, are one of the most important tools for combating world food crises.

II. METHODOLOGY

The study was conducted in Balaghat district of Madhya Pradesh state during the year 20017-18. The Balaghat district is situated at a distance of 246 km away from Jawaharlal Neharu Krishi Vishwavidyalaya, Jabalpur. Balaghat district is one of the most important hybrid rice growing district of Madhya Pradesh state. The district has 10 blocks, out of which, 4 blocks were purposively selected namely Balaghat, Lalburra, Waraseoni, and Katangi, On the basis of having sizable area under hybrid rice cultivation. A list of rice cultivators farmers of the selected blocks were obtained from the office of the Agricultural Department of Balaghat district, 80 farmers were selected randomly thus a total of 320 respondents were selected for the present research study.

III. RESULTS AND DISCUSSION

The data presented in Table 1 reveal the distribution of that the adoption respondents according to their practice wise extant of adoption of recommended hybrid rice production technology. The finding indicated that majority of the respondents 84.37 per cent had high level of adoption of preparation of nursery followed by 83.75 per cent selection of land, 81.25 per cent sowing method and seed-rate, 48.12 per cent row to row

distance and transplanting, 48.12 per cent irrigation method, 30.62 per cent dose of manure and fertilizer, 30.00 per cent insect pest, 24.38 per cent time and method of harvesting, 21.87 per cent duration gap of irrigation, 13.77 per cent weed control, 13.12 per cent disease control and 3.75 per cent respondents had adopted to the seed treatment of the hybrid rice production technology.

While under medium level of adoption, it was found that majority of the respondents (76.88%) adopted disease control measure, followed by irrigation method 63.75 per cent, time and method of harvesting 61.25 per cent, duration gap of irrigation 61.25 per cent, dose of manure and fertilizer 56.88 per cent, insect-pest control 56.25 per cent, sowing method and seed rate 55.62 per cent, weed control 49.36 per cent, seed treatment 46.25 per cent, row to row distance and transplanting 43.12 per cent and 12.51 per cent respondents had adopted to the preparation of nursery for hybrid rice production technology

(N =320)

S. No.	**Technological practices of hybrid rice cultivation**	**Level of adoption**		
		Low F. (%)	**Medium F. (%)**	**High F. (%)**
1.	Selection and preparation of land	4 (1.25)	48 (15.00)	268 (83.75)
2.	Seed treatment	160 (50.00)	148 (46.25)	12 (3.75)
3.	Preparation of nursery	10 (3.12)	40 (12.51)	270 (84.37)
4.	Sowing method and seed rate	26 (8.12)	34 (10.63)	260 (81.25)
5.	Row to row distance and transplanting	28 (8.76)	138 (43.12)	154 (48.12)
6.	Irrigation method	20 (6.25)	204 (63.75)	96 (30.00)
7.	Dose of manure and fertilizer	40 (12.50)	182 (56.88)	98 (30.62)
8.	Duration gap of irrigation	54 (16.88)	196 (61.25)	70 (21.87)
9.	Weed control	118 (36.87)	158 (49.36)	44 (13.77)
10.	Insect-pest control	44 (13.75)	180 (56.25)	96 (30.00)
11.	Disease control	32 (10.00)	146 (76.88)	42 (13.12)
12.	Time and method of harvesting	46 (14.37)	196 (61.25)	78 (24.38)

F. = frequency, %= per cent (Figures in parenthesis shows the percentage)

Table 1: Distribution of respondents according to their practice wise level of adoption regarding recommended hybrid rice production technology

Maximum number of the respondents 50.00 per cent had low level of adoption regarding seed treatment, 36.87 per cent weed control measures, 26.87 per cent adoption of manure and fertilizer, 16.88 per cent duration gap of irrigation, 14.37 per cent time and method of harvesting, 13.75 per cent insect-pest control, 12.50 per cent dose of manure and fertilizer, 10.00 per cent disease control, 8.76 per cent row to row distance and transplanting, 8.12 per cent sowing method and seed rate, 6.25 per cent irrigation method, 3.12 per cent preparation of nursery and 1.25 per cent respondents had low level of adopted to the selection of land for hybrid rice production technology

(N=320)

S.N.	Level of adoption	Frequency	Percentage
1.	Low (up to 14 score)	68	21.25
2.	Medium (14.01-23.63 score)	208	65.00
3.	High (above 23.64 score)	44	13.75
	Total	**320**	**100**

$\bar{X}$ = **18.82** S. D. = 4.82

Table 2: Distribution of respondents according to their overall level of adoption hybrid rice production technology

It is clear from the data given in Table 2 that the majority (65.00%) of the respondents had medium level of adoption regarding recommended hybrid rice production technology. Whereas, 21.25 per cent of the respondents reported low level of adoption and 13.75 per cent respondent had high level adoption. This might be due to the fact that the respondents were educated, possessed large land holdings, belonged to higher income group had better utilization of information sources such as Newspaper, Radio, Television**,** agricultural publications including farm magazines etc. and better orientation towards scientific technologies. This finding is in conformity to the findings reported by Chouhan (2002), Khan et al. (2002), Singh et al. (2004), Dhruw (2008), Suryawanshi (2009), Verma (2009) and Kumar (2010).

IV. CONCLUSION

The analysis of the results showed that the majority of the respondents (65.00%) had medium extent of adoption regarding recommended hybrid rice production technology. Thus, there is an urgent need to increase the extent of adoption about recommended hybrid rice production technology, through proper utilization of source of information, extension contact, exhibition, farmers fair, demonstration and training programmers in different aspects about hybrid rice cultivation. In case of practice wise extent of adoption, it is indicated that maximum number of the respondents (84.75%) had high extent of adoption about use of preparation of nursery, followed by selection and preparation of land 83.75 per cent, sowing method and seed rate 81.25 per cent. Similarly, most of the respondents 76.88 per cent had medium extent of adoption regarding disease control, followed by irrigation method 63.75 per cent, time and method of harvesting 61.65 per cent, duration gap of irrigation 61.25 per cent. Whereas, maximum number of the respondents 50.00 had low level of adoption regarding seed treatment for hybrid rice cultivation, followed by 36.87 per cent weed control, 16.88 per cent duration gap of irrigation and time and method of harvesting 14.88 per cent.

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