

Knowledge level of Hybrid Rice among farmers in Balaghat district

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ABSTRACT

The present investigation entitled “a study on knowledge about hybrid rice production technology among the farmer in Balaghat District of Madhya Pradesh” was carried out in purposively selected four blocks of to assess the knowledge about hybrid rice growers. A total of 320 hybrid rice growers were selected randomly 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 of the respondents (66.25%) had medium experience of hybrid rice cultivation. Maximum number of the respondents (49.37%) 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.

Key words : Hybrid rice, hybrid variety, knowledge

INTRODUCTION

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 per cent more rice. High-yield crops, like hybrid rice, are one of the most important tools for combating world food crises. At the present time, Yuan Longping, the "Father of Hybrid Rice", may be the most famous in research on hybrid rice. In the 1970s, he made his seminal discovery of the genetic basis of heterosis in rice. This was a unique discovery because it had been previously thought that heterosis was not possible for self-pollinating crops such as rice. According to the China Daily, in 2011, Yuan developed a new hybrid rice that can produce 13.9 tons of rice per hectare. Hybrid rice is also grown in many other important rice producing countries including Indonesia, Vietnam, Myanmar, Bangladesh, India, Sri Lanka, Brazil, USA, and the Philippines. A 2010 study published by the International Rice Research Institute (IRRI), reports that the profitability of hybrid rice in three Indian states varied from being equally profitable as other rice to 34 per cent more profitable.

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 Nehru 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.

RESULTS AND DISCUSSION

The data reveal that the majority (53.75%) of the respondents belonged to the middle age group (between 36 to 55 years). However, 27.50 per cent of the respondents were of young age group (up to the age of 35 years). Whereas, in the older age group, the percentage of hybrid rice cultivation farmers was only 18.75 per cent. The findings indicated that the majority of the

respondents in the study area belonged to the middle age groups, followed by young age group and older age group. This reflected that young and old people were not much involved in the hybrid rice cultivation. Purohit (1978), Singh et al. (2007), Kumar and Singh (2009), Prajapati (2010) also noted similar findings. Hybrid rice cultivators had primary level of education, followed by 14.37 per cent of selected hybrid rice cultivators were high school passed and 10.63 per cent had passed middle school. However, 08.75 per cent had passed higher secondary, 05.00 per cent respondents were college passed and only 41.87 per cent respondents were illiterate. The findings revealed that the most of the respondents in the study area had passed primary level of education (Table 4.1 and Fig. 4.5). Padekar *et al.* (2004), Singh et al. (2009), Painkra (2000) and Ogala *et al.* (2010) also observed similar findings in their study. The 59.38 per cent of the respondents were having medium size of family (6 to 10 members), followed by 22.50 per cent of respondents had small size of family (above 10 members) and only 18.12 per cent of the respondents had big size of family (up to 5 members). Choudhary *et al.* (2001), Khaleche *et al.* (2003), Nguyen *et al.* (2003), Mohan and Deoghare (2004), Kanan *et al.* (2004), Odeyinka (2007), Ajala *et al.* (2008) and Kumar (2010) also found almost similar findings. The most of the respondents (55.63%) had no social participation, while only 22.50 per cent of the respondents were member of one organization, 16.87 per cent of the respondents falls in the category of member of more than one organization and 05.00 per cent of the respondents were office bearer of organization. Thakur (2004), Kaur and Kalara (2006), Patel (2008), Khode *et al.* (2009), Gawle (2010) and Kumar (2010) also noticed similar findings in their study.

Table 1: Distribution of respondents according to their socio-personal characteristics

Characteristics	Frequency	Percentage	n=320
Age			
Young (up to 35 years)	88	27.50	
Middle (36-55 years)	172	53.75	
Old (above 55 years)	60	18.75	
Education			
Illiterate	134	41.87	
Primary School	62	19.37	
Middle School	34	10.63	
High School	46	14.37	
Higher Secondary	28	08.75	
College and above	16	05.00	
Size of family			
Small (1-5 members)	72	22.50	
Medium (6-10 members)	190	59.38	
Big (> 10 members)	58	18.12	
Social participation			
No membership	178	55.63	
Membership in one organization	72	22.50	
Membership in more than one organization	54	16.87	
Executive / office bearer in organization	16	05.00	

The maximum number of respondents (90.62%) had high level of knowledge of selection and preparation of land, followed by preparation of nursery 87.50 per cent, the knowledge of sowing method and seed rate 86.88 per cent, row to row distance and transplanting 57.50 per cent, method of storage 46.87 per cent, 38.76 per cent knowledge of manure and fertilizer, dose of manure and fertilizer 38.75 per cent, irrigation method 38.12 per cent, duration gap of irrigation 33.75 per cent, time and method of harvesting 31.25 per cent, soil fertility test 31.25 per cent, insect-pest control 30.63 per cent, seed treatment 25.63 per cent, disease control 25.00 per cent, Adoption of hybrid varieties 24.37 per cent and weed control 16.25 per cent.

Table 2: Distribution of respondents according to practice wise level of knowledge regarding recommended hybrid rice production technology

Technological practices of hybrid rice cultivation	Level of knowledge			n=320
	Low F(%)	Medium F(%)	High F(%)	
Selection and preparation of land	4 (1.26)	26 (8.12)	290 (90.62)	
Seed treatment	58 (18.12)	180 (56.25)	82 (25.63)	
Preparation of nursery	14 (4.38)	26 (8.12)	280 (87.50)	
Sowing method and seed rate	16 (5.00)	26 (8.12)	278 (86.88)	
Row to row distance and Transplanting	22 (6.88)	114 (35.63)	184 (57.50)	
Irrigation method	20 (6.25)	178 (55.62)	122 (38.12)	
Knowledge of hybrid varieties	58 (18.12)	150 (46.88)	112 (35.00)	
Soil fertility test	106 (33.12)	114 (35.63)	100 (31.25)	
Knowledge of manure and fertilizer	34 (10.62)	162 (50.62)	124 (38.76)	
Dose of manure and fertilizer	28 (8.75)	168 (52.50)	164 (38.75)	
Duration gap for irrigation	36 (11.25)	176 (55.00)	108 (33.75)	
Weed Control	76 (23.75)	192 (60.00)	52 (16.25)	
Insect pest control	30 (9.37)	192 (60.00)	98 (30.62)	
Disease control	26 (8.12)	214 (66.88)	80 (25.00)	
Time and method of harvesting	58 (18.12)	162 (50.63)	100 (31.25)	
Method of storage	36 (11.25)	134 (41.88)	150 (46.87)	

F. frequency, % . Per cent

Similarly majority of the respondents 66.88 per cent were having medium knowledge about disease control followed by weed control 60.00 per cent, insect-pest control 60.00 per cent, seed treatment 56.25 per cent, irrigation method 55.62 per cent, duration gap of irrigation 55.00 per cent, dose of manure and fertilizer 52.50 per cent, knowledge of manure and fertilizer 50.62 per cent, time and method of harvesting 50.63 per cent, knowledge of hybrid variety 46.88 per cent, method of storage 41.88 per cent, selection and preparation of land

40.63 per cent, row to row distance and transplanting 35.63 per cent, preparation of nursery 8.12 per cent, sowing method and seed rate 8.12 per cent.

Table 3: Distribution of respondents according to their overall level of knowledge about hybrid rice production technology

n=320		
Level of knowledge	Frequency	Percentage
Low (up to 15.92 score)	32	10.00
Medium (15.93 to 27.63 score)	174	54.37
High (above 27.64 score)	114	35.63
\bar{X} = 21.78		S. D. = 5.86

The data presented in Table 3 indicates that out of total respondents, majority (54.37%) of them had medium level of knowledge, followed by 35.63 per cent of the respondents had high level of knowledge and 10.00 per cent of the respondents had low level of knowledge almost hybrid rice production technology.

It can be concluded that most of the respondents had medium level of knowledge regarding recommended hybrid rice cultivation production technology . This is in conformity to the findings of Duboliya (1988), Painkra (2000), Chouhan (2002), Patel (2008), Yadav (2008) and Verma (2009), Kumar (2010) and Gawle (2010) . CONCLUSIONThe analysis of the results showed that the majority of the respondents 54.37 per cent had medium level of knowledge. Hence, extension efforts should be made to increase the level of knowledge of hybrid rice growers regarding recommended hybrid rice production technology. On the basis of analysis of practice wise knowledge, it was found that most of the respondents had high level of knowledge regarding selection and preparation of land 90.62 per cent, followed by knowledge about use of preparation of nursery 87.50 per cent and sowing method and seed rate 63.12 per cent. The respondents had medium level of knowledge about disease control 66.88 per cent, followed by weed control 60.00 per cent, insect-pest control 60.00 per cent and seed treatment 56.25 per cent. Similarly, majority of the respondents were having low level of knowledge about soil fertility test 33.12 per cent weed management by herbicides 23.75 per cent, seed treatment 18.12 per cent.

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