



Research Article

EVALUATION OF ALTERNATE RICE VARIETY FOR REPLACEMENT OF BPT 5204 IN MADURAI

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Abstract: In Madurai district, Rice is the major crop which is cultivated nearly on 55,983 ha in rabi season (Sep- Oct). In this season, very old and most disease susceptible variety BPT 5204 is predominantly used by Madurai farmers which has become susceptible to attack of insect pest and diseases. To overcome this problem, Krishi Vigyan Kendra, Madurai has conducted on farm testing (OFT) on alternative rice variety for BPT 5204 during 2018-19. Five trials were laid out at Velliyankundrum and Thirukanaivillages of Madurai. Varieties used for comparison with BPT 5204 were CO 52 and TKM 13. The parameters like percent disease incidence (PDI), productive tillers, duration and yield (q/ha) were recorded. The results revealed that the rice variety TKM 13 recorded the lowest PDI (5.29) compared to control BPT 5204 (18.63), number of productive tillers was also higher (15) in TKM 13 and thus higher (58.3q/ha) yield was recorded as compared to control (52.3q/ha). It was concluded that, farmers were satisfied with Rice TKM 13 variety due to lower pest and disease incidence and higher yield.

Keywords: Rice, Percent disease incidence, Duration, Yield

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Introduction

On Farm Trails are conducted on different crops after diagnosing the problems in specific areas of the district. Various multilocational trials on farmer's field are laid for assessment of proven technology and its refinement to suit the local conditions. Rice is one of the important crops of the world and is grown between latitudes 45° N and 40° S [1]. In Tamil Nadu, rice is cultivated in an area of 17.26 lakh ha with the production of 71.15 lakh tonnes. In Madurai district, Rice is the major crop which is cultivated nearly on 55,983 ha in rabi season (Sep-Oct). In this season, very old and most disease susceptible variety BPT 5204 is predominantly used by Madurai farmers which has become susceptible to attack of insect pest and diseases. To overcome this problem, Krishi Vigyan Kendra, Madurai has conducted on farm testing (OFT) on alternative rice variety for BPT 5204 during 2018-19.

Materials and methods

On farm trials was conducted at Velliyankundrum and Thirukanaivillages of Madurai where transplanting is followed. The trial was conducted at five locations. Three technological options were imposed for this on farm trail and critical inputs of rice varieties viz., CO 52 and TKM 13 were distributed to the farmers.

Results and Discussion

The result [Table-2] revealed that, among the three varieties evaluated, rice TKM 13 recorded the lowest percent disease incidence (5.29) compared to control BPT 5204 (18.63), more productive tillers (15.6) in rice TKM 13 and lowest in control BPT 5204 (12.5). Similarly, rice TKM 13 recorded the highest yield of 58.3 q/ha which was more than the control BPT 5204 (52.3 q/ha) followed by CO 52 (55.6 q/ha). Among these varieties, rice TKM 13 registered the highest benefit cost ratio (2.04:1) compared to control BPT 5204 (1.81). The findings were in agreement with [2,3]. Average yield increase was observed in demo plots as compared to farmers' own practice [4].

Conclusion

Rice variety TKM 13 recorded a greater number of productive tillers which is the most important yield contributing parameter, lowest percent disease incidence which reduced the plant protection cost, higher yield and higher BC ratio. Hence, Farmers were satisfied with TKM 13 cultivation. Moreover, it matures in 130 d which is 7-10 d earlier than BPT 5204. Since the grain is of very fine quality; it has more commercial value and high marketable price. Hence, it is concluded that TKM 13 is the suitable rice variety alternate to BPT 5204 during samba season for rice cultivating area of Madurai district.

Application of research: Study of rice variety

Research Category: Plant Breeding and Genetics

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Study area / Sample Collection: Velliyankundrum and Thirukanaivillages of Madurai district in Tamil Nadu

Table-1 Description of technology options selected for On Farm Trial

Technology option	Variety	Characters of the variety	Source of technology
TO 1	BPT 5204	Duration: 140 days	ANGRAU 1986
		Season: Late samba / thaladi	
		Yield: 6 t/ha	
		Good grain quality	
TO 2	TKM 13	Parentage: WGL 32100 / Swarna	TNAU 2015
		Duration: 130 days (which is 7-10 d earlier than BPT 5204)	
		Season: Late samba / thaladi	
		Yield: 5938 kg/ha	
TO 3	CO 52	Grain type: Medium slender	TNAU 2017
		Parentage: BPT 5204 / CO R 50	
		Duration: 130-135 days	
		Season: Late samba / thaladi	
		Yield: 6191 kg/ha	
		Grain type: Medium slender	
		Special features	
		Resistant to brown plant hopper and green leaf hopper	
		Moderately resistant to blast, sheath blight, brown spot and sheath rot.	

Table-2 Performance of rice varieties in OFT trail (Average of Five farmers' field data)

SN	Parameter	BPT 5204	TKM 13	CO 52
1	Percent disease incidence (Blast)	18.63	5.29	17.52
2	Productive tillers (Nos.)	12.5	15.3	14
3	Yield (q/ha)	52.3	58.3	55.6
4	BCR	1.81	2.04	1.95

Cultivar / Variety / Breed name: Rice

Conflict of Interest: None declared

Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

Ethical Committee Approval Number: Nil

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