

Yield Performance of Non-spiny Brinjal Variety VRM (Br)2 in Northern zone of Tamil Nadu, India

ABSTRACT

Aim: To identify the yield performance of non-spiny brinjal variety VRM (Br)2.

Study Design: Non-spiny brinjal variety VRM (Br)2 was developed by hybridization between Senur local x spiny brinjal VRM (Br) 1 followed by pedigree method of selection.

Place and Duration of the Study: The present study was carried out at northern districts of Tamil Nadu viz., Vellore, Ranipet, Tirupathur, Thiruvannamalai, Dharmapuri and Krishnagiri during 2015-2016.

Methodology: VRM (Br) 2 was evaluated under different trials during 2017-2020 at various locations along with ruling check variety VRM (Br) 1. The observations were recorded at yield and yield characters.

Results: VRM (Br) 2 recorded highest fruit yield of 46.35 t/ha as compared to check variety VRM (Br) 1 (32.85 t/ha). It was 41.00 % higher fruit yield over check variety VRM (Br) 1 and moderately resistant to major insect pests. viz., epilachna beetle, whiteflies and shoot and fruit borer.

Conclusion: All the plant and fruit characters are similar to spiny brinjal VRM (Br) 1, whereas the spines are absent in the variety VRM (Br) 2. Due to its non-spiny nature, intercultural operations viz., harvesting, packing, storage and transport are easy to do.

Key words: Non-spiny brinjal, Yield, Performance, MLT, ART

1. INTRODUCTION

Brinjal or egg plant (*Solanum melongena* L.) is widely cultivated as one of the most important vegetable crop grown extensively throughout the tropical and sub tropical regions of world [5,6]. The cultivated area of brinjal in India is about 6.80 lakh hectares with production of 118.96 lakh tonnes and productivity of 17.5 tonnes per hectare, while West Bengal is leading state in area, production & productivity of 1.58 lakh hectares as well as production of 28.70 lakh tonnes and productivity of 18.1 tonnes per hectare [1]. For the development of non-spiny variety in brinjal, the attempts were

made to collect and improve the local cultivars grown in Northern Zone of Tamil Nadu state. Therefore the present paper reports about one such varietal development.

2. MATERIAL AND METHODS

Non-spiny brinjal variety VRM (Br)2 was developed by hybridization between Senur local x spiny brinjal VRM (Br) 1 followed by pedigree method of selection. This genotype was tested as an entry in Preliminary Evaluation Trial (PET) during 2015-16 and tested at multi location viz., Vellore, Ranipet, Tirupathur, Thiruvannamalai, Dharmapuri and Krishnagiri districts of Tamil Nadu.

3. RESULT AND DISCUSSION

The results on fruit yield of Non-spiny Brinjal Variety VRM (Br) 2 along with ruling check variety VRM (Br) 1 in multilocation trials are presented in Table 1. On the basis of fruit yield data from the multilocation trials at Vellore, Ranipet, Tirupathur, Thiruvannamalai, Dharmapuri and Krishnagiri districts of Tamil Nadu had proven its superiority by giving higher fruit yield at all the centers. The mean fruit yield of VRM (Br) 2 was 46.35 t/ha as compared to ruling check variety VRM (Br) 1 (32.85 t/ha) in state trials (Table 1). Similar studies were done and the genotypes 2014/BRLVAR-1, 2014/BRLVAR-2 and 2013/BRLVAR-4 were recommended for commercial cultivation in Chhattisgarh plains [2], [3].

The fruits of this genotype were deep purple in color with green tinge at the distal end of the fruit. Average fruit length, girth and weight of this genotype was 9.75 cm, 18.64 cm. and 119.3 gm respectively (Table 1). The qualitative parameters of VRM (Br) 2 were similar to VRM (Br) 1 whereas the spines are absent in the variety VRM (Br) 2. The performance of non-spiny brinjal VRM (Br) 2 is high when compared with the local check spiny brinjal VRM (Br)1 in all the parameters recorded. There was a yield increase of 41 per cent over check. The damage percent of shoot and fruit borer infestation was also low (19.25 and 24.25) in non-spiny brinjal when compared to spiny brinjal (25.4 and 30.4) [4]. This variety showed lower incidence of epilachna beetles (2.42 per leaf), white fly (4.2 per leaf), mosaic (10.3 %) and little leaf (2.2 %) as

compared to check variety VRM (Br)1 in which the corresponding values were 3.38, 4.40, 18.2 and 2.34 respectively (Figure1,2,3 and Table 2).

4. CONCLUSION

All the plant and fruit characters are similar to spiny brinjal VRM (Br) 1, whereas the spines are absent in the variety VRM (Br) 2. Due to its non-spiny nature, intercultural operations *viz.*, harvesting, packing, storage and transport are easy to do. This variety highly suitable for marketing purpose.

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UNDER PEER REVIEW

Table 1. Overall performance of brinjal culture VMB-16-10

Particulars	No. of Trials	Fruit length (cm)		Fruit girth (cm)		Number of fruits per plant		Average fruit weight (g)		Mean fruit yield/plant (kg)		Estimated yield (t/ha.)	
		VRM (Br)2	VRM (Br)1	VRM (Br)2	VRM (Br)1	VRM (Br)2	VRM (Br)1	VRM (Br)2	VRM (Br)1	VRM (Br)2	VRM (Br)1	VRM (Br)2	VRM (Br)1
ARS Virinjipuram	3	11.18	9.69	21.24	103.00	93.80	2.17	103.00	93.80	2.17	92.20	55.85	63.89
MLT I	9	10.50	9.41	18.67	130.90	112.10	2.03	130.90	112.10	2.03	60.60	69.70	66.70
MLT II	4	7.65	7.14	16.69	15.52	15.80	13.50	90.07	79.50	1.45	1.08	38.62	25.34
ART	61	9.66	7.78	17.94	16.22	11.62	9.65	153.36	119.36	2.48	1.61	44.08	28.62
Mean	77	9.75	8.51	18.64	16.97	15.33	12.56	119.33	101.19	2.03	1.48	46.35	32.85
Yield increase over check	41.0 % over Brinjal variety VRM (Br-1)												

Table 2. Reaction of brinjal culture VRM (Br) 2 for insect pests under field condition

Pest	Culture/Check	Damage/Population	Reaction category
Shoot and fruit borer	VRM (Br)2	Shoot damage : 19.25	Moderately resistant
		Fruit damage : 24.25	
	VRM (BR)1	Shoot damage : 25.40	Moderately resistant
		Fruit damage : 30.45	

Epilachna beetle (Nos./plant)	VRM (Br)2	2.42	-
	VRM (BR)1	3.38	-
Whiteflies (Nos./plant)	VRM (Br)2	4.20	-
	VRM (BR)1	4.40	-

Rating scale: 0-15% : Resistant ; 16-30% : Moderately resistant; 31-45 %: Susceptible ;> 45%: Highly susceptible

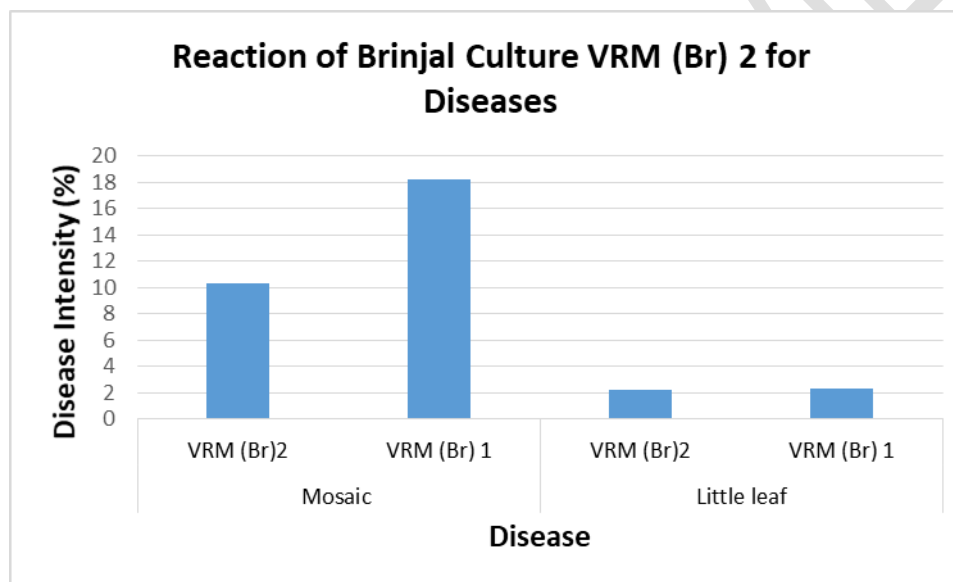


Figure1. Reaction of brinjal culture VRM (Br) 2 for diseases under field condition

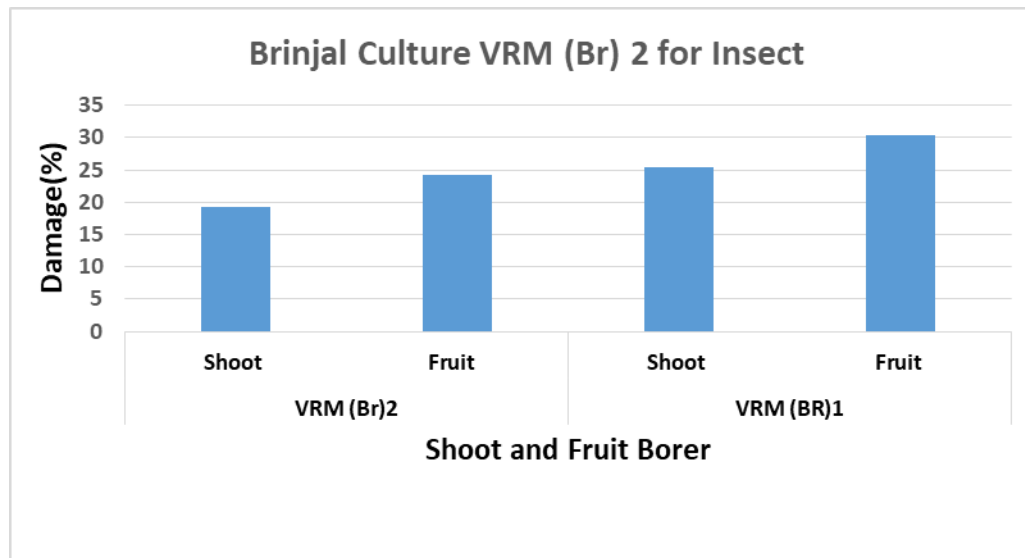


Figure2. Reaction of brinjal culture VRM (Br) 2 for insect under field condition

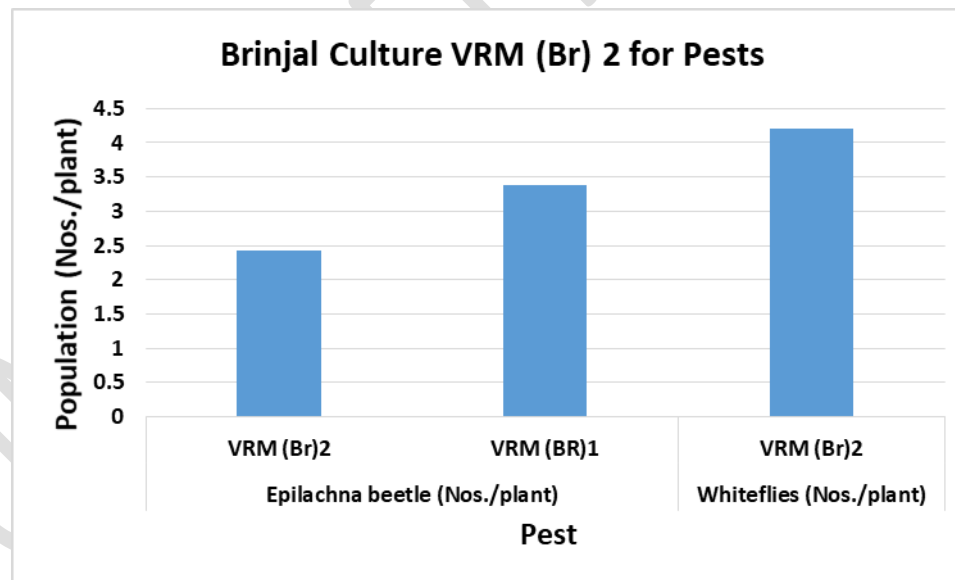


Figure3. Reaction of brinjal culture VRM (Br) 2 for pests under field condition