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ADDITIONAL SOURCE OF RESISTANCE TO BACTERIAL WILT IN BRINJAL

Bacterial wilt (*Pseudomonas solanacearum* E. F. Smith) is a serious disease of brinjal (*Solanum melongena* Linn.) in the tropics. Chemical control measures are costly and ineffective. Use of resistant varieties is the cheapest and the only effective method of combating the disease. Many of the reported resistant lines Dingras Multiple Purple, Sinampiro, Pusa Purple Cluster (Rao *et al;* 1976), Pusa Purple Round, Vijay Hybrid and Banares Giant Green (Sitaramiah *et al.*, 1981) wilted under the warm humid climate of Kerala, indicating the possible existence of different races of isolates of the pathogen and the need to identify field resistant lines.

SM 6 was reported resistantto bacterial wilt (Kerala Agricultural University, 1981). Its resistance was confirmed by planting in 8 different locations during December, 1980 to June, 1981. Asha Sankar (1982) attempted to group the variability in SM 6 into distinct classes based on fruit colour (white, green and purple), fruit shape (long and oval) and absence or presence of the prickles, keeping resistance intact. Goth *et al.* (1983) tested SM 6 for disease reaction to several isolates of *Pseudomonas solanacearum* belonging to race 1 and race 3. The line SM 6 was resistant to TEP 13, 126408-1, and W 82. The isolates TFP 13 and 126408-1 belonged to race 1 and W 82 to race 3. They also observed that it is susceptible to isolates K 60, TFP 12 and Tifton 80-1. It showed tolerant reaction to isolate A 21.

The above observations called for search for additional sources of resistance to bacterial wilt.

Sheela *et al.* (1984) identified four lines SM 45, SM 56, SM 71 and SM 74 to be resistant to bacterial wilt. The lines are now studied in detail as additional source of resistance to bacterial wilt and for genetic differences if any, for plant height, number of primary branches per plant, yield per plant, economic pickings and average fruit weight. Evaluation for resistance to bacterial wilt was done by counting the number of plants wilted. The incidence of bacterial wilt was confirmed through ooze test for each of the wilted plants. The four resistant genotypes were grown in a randomised block design with five replications. There were 20 plants/genotype/replication. Spacing was 75x45 cm. The lines were significantly different for all the above characters (Table 1). Plant height was the maximum for SM 74 (98.1 8 cm) and the lowest for SM 71 (75.72 cm). SM 56 was the earliest among the four lines for days to fruit set (37 days after transplanting). The line SM 56 also produced the highest yield per plant (1.19 kg and no. of fruits per plant (17.31). Wilt incidence was high in the lines SM 45 (46.67%) and SM 71 (46.67%). SM 74 had the lowest percent of plants wilted (20.00). The line could be an additional source of resistance to bacterial wilt.

Table 1

Mean performance of four brinjal lines evaluated for additional source of resistance to bacterial wilt

Genotype	Days to first fruit set	Days to first harvest	Plant height (cm)	Primary branches/ plant	Fruits/ plant	Yield/ plant (g)	Economic pickings	Average fruit weight (9)	Percentage of wilted plants
SM 45	43.99	74.22	85.46	4.11	9.93	823.79	2.80	81.53	46.67
SM 56	37.22	65.41	82.51	3.53	17 31	1193.07	4.63	64.65	33.33
SM 71	48.10	83.97	75.72	4.24	14.49	817.67	4.27	79.85	46.67
SM 74	53.31	87.93	98.18	3.61	14.38	590.18	3.28	66.68	20.00
SEm±	0.74	1.25	1.85	0.12	0.78	55.02	0.28	2.30	
CD(p=0.05)	2.29	3.79	5.69	0.38	2.39	169.47	0.87	7.09	

സംഗ്രഹം

ബാക്ടീരിയമൂലമുള്ള വാടൽ വഴുതനയുടെ പ്രധാന രോഗമാണ്. രോഗപ്രതിരോധശക്തിയുള്ള ഇനങ്ങളെ ഉരുത്തിരിച്ചെടുക്കുക എന്ന ഉദ്ദേശത്തോടു കൂടിയുള്ള ഗവേഷണങ്ങളിൽ SM 45 എന്ന ഇനം ഉപയോഗപ്രദമാണെന്നു കാണിച്ചിരിക്കുന്നു. SM 6 എന്ന രോഗപ്രതിരോധശക്തിയുള്ള ഇനത്തെ കൂടാതെ SM 74 എന്ന ഇനവും വാടൽ രോഗപ്രതിരോധഗവേഷണങ്ങളിൽ ഉപയോഗിക്കാം.

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