

**RELATIVE SUSCEPTIBILITY OF BRINJAL LINES RESISTANT TO  
BACTERIAL WILT (*PSEUDOMONAS SOLANACEARUM* Smith)**

The cultivation of brinjal, tomato and chilli is becoming difficult in the acid soils of Kerala due to the incidence of wilt (*Pseudomonas solanacearum* Smith). Studies on resistance to bacterial wilt of brinjal were conducted in many parts of world (Schmidt, 1935; Park and Fernando, 1940; Wager, 1944; Winstead and Kelman, 1960 and Grubben, 1977). Research on this serious disease is limited in India. The present study was conducted in the College of Horticulture, Vellanikkara during two seasons, June—September 1982 and October—February 1982-83. The trial was conducted in sick area where the previous crop was completely wilted due to high amount of inoculum in the soil. The varieties/lines included in the trial were P. Br. 129-5, P. Br. 91-2 (Pant Nagar), S 16 (Punjab), RHR 51, RHR 58 (Rahuri), ARU 1 (Almora), ARU 2C (Atmora), Pusa Purple Cluster (Katrain), SM 6 (Kerala Agricultural University), Manjery Gota and T3 (Kalyanpur).

Table 1  
Varietal resistance and mean performance of 11 brinjal lines

Variety	Percentage of plants not affected by wilting	Wilt reaction	Diameter of fruit (cm)	Length of fruit (cm)	Average fruit weight (g)	Fruit yield/plant (kg)
SM 6	94.64 (90.00)	Resistant	4.18 (4.25)	11.84 (9.87)	92.29 (70.75)	1.202 (0.796)
Pusa Purple Cluster	89.28 (82.50)	Resistant	2.94 (2.93)	8.80 (8.99)	61.84 (60.68)	0.748 (0.575)
S 16	16.07	Susceptible	7.29	9.30	171.29	—
P. Br. 91-2	9.82	Susceptible	7.88	8.33	191.08	—
ARU 2C	66.96 (30.00)	Moderately Resistant	3.59 (4.20)	10.09 (10.25)	59.25 (49.95)	1.162 (0.626)
ARU 1	6.22 (0.00)	Susceptible	3.96 —	25.63 —	344.25 —	— —
P. Br. 129-5	26.78 (50.00)	Susceptible	3.22 (3.60)	15.69 (12.97)	96.9 (71.15)	1.202 (0.733)
RHR 51	0.00 (0.00)	Susceptible	— —	— —	— —	— —
RHR 58	0.00 (0.00)	Susceptible	— —	— —	— —	— —
Manjery Gota	0.00	Susceptible	—	—	—	—
T3	(0.00)	Susceptible	—	—	—	—

(Data within parenthesis indicate October-February 1982-83 results)

(— Data are not available since the plants were wilted even before fruiting)

There was significant difference in response to bacterial wilt among the brinjal genotypes (Table 1). Presence of bacteria in wilted plants was ascertained by ooze test. The disease rating was done as per the scale suggested by Mew and Ho (1976). SM 6, a selection made in the Department of Olericulture, College of Horticulture, Velianikkara showed maximum resistance to bacterial wilt in both the seasons under field conditions (94.64% and 90.00%). This was followed by Pusa Purple Cluster (89.29% and 82.5%), ARU 2C (66.96% and 30.00%) and P. Br. 129-5 (26.76% and 50.00%). The resistance of SM 6 to bacterial wilt under field condition was also confirmed by Sheila (1982).

SM 6 and P. Br. 129-5 ranked first in yield among the resistant varieties followed by ARU 2C and Pusa Purple Cluster in both the seasons. The yield data of other varieties were not available since they were completely damaged by wilt before harvest. The varieties showed significant difference in diameter of fruit, length of fruit, average fruit weight and yield/plant,

SM 6 has green leaves and green stem. Fruits are solitary. The fruit colour showed segregation i.e., white, green and purple. Fruit shape varied from cylindrical and oval to round. This offers scope for selection of wilt resistant varieties with different fruit shape and colour.

The authors are thankful to the Indian Council of Agricultural Research and the Kerala Agricultural University for providing facilities for the study.

സംഗ്രഹം

കേരള കാർഷിക സർവകലാശാലയിലെ ഹോർട്ടിക്കറൽ കോളേജിൽ വിവിധ വഴുതന ഇനങ്ങളിൽ നടത്തിയ പരീക്ഷണങ്ങളിൽ rad എസ്. എം. 6 എന്ന ഇനത്തിന് ബാക്ടീരിയ വാട്ടത്തെ ചെറുത്തു നിൽക്കുവാൻ കഴിവുള്ളതായി കണ്ടു. വഴുതനങ്ങയുടെ നിറത്തിലും ആകൃതിയിലും വിഭിന്ന സ്വഭാവങ്ങൾ പ്രകടിപ്പിക്കുന്ന ഈ ഇനത്തിൽനിന്ന് നിർദ്ദിഷ്ട നിറത്തോടും ആകൃതിയോടും കൂടിയ കായ്കളുള്ള വഴുതന ഇനങ്ങൾ ഉരുത്തിരിച്ചെടുക്കുവാൻ വലിയ സാദ്ധ്യത കാണപ്പെടുന്നുണ്ട്.

College of Horticulture  
Velianikkara 680 654, Kerala.

T. R, Gopalakrishnan  
P K. Gopalakrishnan

Reference

Grubben, G J. H. 1977. *Tropical Vegetables and Their Genetic Resources*. International Board of Plant Genetic Resources.  
Mew, T. W. and Ho, W, C. 1976. Varietal resistance to bacterial wilt in tomato. *Plant Dis. Repr.* 60: 264-268

- Park, M. and Fernando, M. 1940. A variety of brinjal, resistant to bacterial wilt, *Trop. Agriculturist X CIV(1)* 19-21
- Rao, M. V. B., Sohi, H. S. and Vijay, O. P. 1976. Reaction of some varieties of brinjal to *Pseudomonas solanacearum*. *Vegetable Science* 3 (1) 61-64
- Schmidt, M. V. 1935. A contribution to breeding and seed production in pepper and egg plants. *Nikta State Bet Gdn Crimean Regional Exp. Veg. culture.* pp. 105
- Sheela, K.B. 1982. *Cataloguing brinjal germplasm to isolate lines resistant to bacterial wilt.* M. Sc. (Hort.) thesis, Kerala Agricultural University.
- Wager, V. A. 1944. Bacterial wilt of egg plant. *Fng. S. Africa* 19 : 661-664.
- Winstead, N. K. and Kelman, A. 1960. Resistance to bacterial wilt on egg plant in North Carolina. *Plant Dis. Repr.* 44 : 432-434.