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Screening for disease incidence of Yellow Vien Mosaic Virus (YVMV) in okra [*Abelmoschus esculentum* (L.) Moench]

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ABSTRACT

Fifty five genotypes of okra were screened for YVMV under field conditions. The per cent disease incidence and coefficient of infection ranges from 7.20 to 100.00 and 1.8 to 75.00 respectively. Out of 55 genotypes, five were highly resistant, thirteen were resistant, seventeen were moderately resistant, thirteen were moderately susceptible, five were susceptible and two were highly susceptible based on the coefficient of infection. The yield per plant ranges from 75.00 to 273.00 g/plant. The maximum yield was recorded in Pharbani Kranti (273.00) followed by IC 90210 (255.35) JNDO-5 (240.25), Arka Anamika (238.00) and IC 90170 and OLR02 (235.40).

Key words : Okra, Screening, YVMV incidence.

Yellow Vein Mosaic Virus (YVMV) is a devastating viral disease transmitted through white fly (*Bemesia tabaci*) in okra. The disease affects the quality of fruit and yield adversely. In India, the occurrence of this disease was first reported by Kulkarni (1924) in Bombay province. It has been reported that when plants infected at 20, 35 and 50 days after germination the losses seen upto an extent of 98, 83 and 49 per cent, respectively (Shastry and Singh, 1974). Frequent pickings, high operational cost and residues of pesticides entering food chain are the limiting factors for chemical control of this disease. Varietal resistance to YVMV has been reported by several researchers in okra genotypes. Therefore, in this study efforts have been made to screen 55 genotypes for YVMV in okra.

MATERIALS AND METHODS

A total of 55 genotypes were collected from different sources (Table 2) and sown in randomized block design with three replications at spacing of 60 x 30 cm apart in 5 meters rows. Seeds of most susceptible variety Pusa Sawani were also sown along the borders of entire plots to provide adequate virus source to the vector. Observations on disease severity and intensity were recorded at 30 days interval on ten randomly selected plants of each genotype and the cumulative data were obtained. To assess the resistance of a given strain, symptom severity grades, designated with numerical values of 0 to 4 were given on the basis of visual observations. To quantify the disease severity, calculations were made as shown in Table 1 (Singh and Singh, 2000). The per cent disease incidence (PDI) was calculated by the given formula:

$$PDI = \frac{\text{Number of diseased plants}}{\text{Total number of plants observed}} \times 100$$

The coefficient of infection (CI) was calculated by multiplying the per cent disease incidence to the response

Table 1 : Scale for classifying disease reaction of okra to Yellow Vein Mosaic Virus (YVMV)

YVMV symptoms	Severity grade	Response value	Coefficient of infection	Reaction
Symptoms absent	0	0	0-4	Highly resistant
Very mild symptoms up to 25% leaves	1	0.25	5-9	Resistant
Appearance of symptom in 26-50% leaves	2	0.50	10-19	Moderately resistant
Appearance of symptom in 51-75% leaves	3	0.75	20-39	Moderately susceptible
Severe disease infections in symptom (75% leaves)	4	1.00	40-69	Susceptible
			70-100	Highly susceptible