

## **Screening for disease in incidence of yellow vein mosaic virus in okra [*Abelmoschus esculentum* (L.) Moench]**

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### **ABSTRACT**

Fifty five genotypes of okra were screened for yellow vein mosaic virus (YVMV) disease 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 ranged from 65.85 to 273.63 g/plant. The maximum yield per plant was recorded in Parbhani Kranti (273.63 g) followed by IC 90210 (255.35 g) JNDO-5 (240.25 g), Arka Anamika (238.00g), OLR02 (235.47 g) and IC 90170 (235.40 g).

**Key words :** Okra, Screening, YVMV incidence.

**Y**ellow Vein Mosaic Virus (YVMV) is a devastating viral disease transmitted through white fly (*Bemisia 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 are 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 [*Abelmoschus esculentum* (L.) Monech] genotypes. Therefore, in this study efforts have been made to screen 55 genotypes for YVMV in okra.

### **MATERIALS AND METHODS**

Fifty five genotypes of okra were collected from different sources (Table 1) 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 (Singh and Singh, 2000). The per cent disease incidence (PDI) was calculated by the following formula:

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

The coefficient of infection (CI) was calculated by multiplying the per cent disease incidence to the response value assigned for each severity grade. Thus, the coefficient values combine the amount of infection and its severity.

### **RESULTS AND DISCUSSION**

The data presented in Table 1 indicate that the yield per plant ranged from 65.85 to 273.63 grams per plant in 55 genotypes of okra (Sharma *et al.*, 1993). The maximum yield was recorded in Parbhani Kranti (273.63g) followed by IC90210 (255.35g), JNDO-5 (240.25g), Arka Anamika (238.00g) and IC90170 and OLR02 (235.47g). The per cent disease incidence ranged from 7.20 to 100.00. The genotypes (IC111479, EC 30-5615 and IC90194) were having high incidence (100%) of YVMV. Further, the genotypes (EC305647, EC 305649, IC 90077 and IC90165) having lesser per cent incidence of YVMV were classified into highly resistant, resistant, moderately resistant and moderately susceptible, respectively. This ruled out the possibility of relationship between the per cent disease incidence and their reaction to YVMV. Hence, the per cent disease incidence coupled with disease severity (response value) *i.e.*, coefficient of infection will be more useful in selecting suitable genotype resistant to YVMV and higher yield. Coefficient of infection ranged from 1.80 to 75.00 % (Dhankar *et al.*, 1996). The minimum coefficient of infection was noticed in EC 305647 (1.80) followed by EC305633 (2.83), EC329424 (3.32), IC90273 (3.50) and IC90269 (3.68).