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PERFORMANCE OF DIFFERENT VARIETIES OF OKRA (*Abelmoschus esculantus*) IN RELATION TO YELLOW VEIN MOSAIC DISEASE UNDER NORTH KONKAN CONDITIONS

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ABSTRACT
A field trial was conducted at Agril. Research Station, Palghar, Dist. Thane during rabi season of 2007-08 and 2008-09. Fourteen varieties of okra which are preferred by the farmers for commercial cultivation were selected for screening. The experiment was conducted in RBD. The periodically incidence of the yellow vein mosaic disease and yield was recorded. There was significant difference in the incidence of the yellow vein mosaic disease. In the year 2007-08 and 2008-09, the incidence of yellow vain mosaic was minimum (22.50 and 26.00 per cent respectively) in variety, Parbhani Kranti and Varsha Uphar (32.75 and 34.75 per cent). There was significant difference in the yield during both the years. During the year 2007-08, maximum fruit yield (73.40 q/ha) was obtained in Varsha Uphar followed by variety, Parbhani Kranti (72.42 q/ha.) and during 2008-09, maximum fruit yield (61.88 q/ha) was obtained in Parbhani Kranti, followed by variety Varsha Uphar (59.79 q/ha.) which was at par. As pooled mean of yield concerned, both the varieties are at par. The mean yield of Parbhani Kranti varietiy was 67.15 q/ha. followed by Varsha Uphar (66.60 q/ha.).

KEYWORDS: Okra, yellow vein mosaic disease.

INTRODUCTION

Okra (*Abelmoschus esculantus*) is an important vegetable crop of India as it has medicinal, nutritional value. It has export potential and it is commercially grown in throughout the country. It can adopt wide rage of soil and climatic conditions and grow better with optimum management practices. India is the largest producer of okra. Different varieties of okra have been developed and are commercially cultivated. There are various pest and diseases which affect the crop growth, yield and quality of crop. Among several diseases, yellow vein mosaic disease is the most severe one affecting the quantity and quality of the fruits (Uppal et al., 1940). The symptoms of the disease include clearing of vein lets followed by chlorosis of veins, vein swelling, slight downward curling of leaf margins, twisting of petioles, dwarfening and retardation of growth (Capoor and Varma, 1950). As its commercial importance is considered, the present investigation was carried out to study the response of different okra varieties to incidence of yellow vein disease under north konkan conditions.

MATERIALS & METHODS

A field trial was conducted at Agril. Research Station, Palghar, Dist. Thane during rabi season of 2007-08 and 2008-09. The experimental area is in north konkan coastal agroclimatic conditions having black alkaline soils (pH 8.2). Fourteen varieties of okra which are preferred by the farmers for commercial cultivation were selected for screening. The experiment was conducted in RBD. The experimental land was prepared by ploughing and harrowing and the plots having net size of 3.00 m X 2.40 m were prepared. The basal dose of FYM at the rate of 20 T/ha was incorporated in the soil at the time of field preparation. The recommended dose of fertilizer (100kg N, 50kg P_2O_5 and 50kg K_2O) was applied as basal dose where the 1/3 N was applied as basal dose and remaining dose of N was applied in two split doses at three and six weeks after sowing. The seed of selected varieties was sown on at 45 cm X 30 cm spacing. The recommended cultural practices like irrigation, weeding, etc were followed. The periodically incidence of the yellow vein mosaic disease was recorded at an interval of 15 days from 2.5 months after sowing. The disease incidence percentage was calculated by using formula.

$$\text{Per cent disease incidence} = \frac{\text{Number of diseased plant}}{\text{Total number of plants examined}} x\ 100$$

The fruit yield per plant in kg, yield per hectare in quintals were recorded from ten randomly selected plants from each plot. The data were statistically analyzed by the method suggested by Panse and Sukhatme (1985).

RESULTS & DISCUSSION

The year wise data on incidence of yellow vein mosaic disease was given table 1 and 2. There was significant difference in the incidence of the yellow vein mosaic

disease. In the year 2007-08 and 2008-09, the incidence of yellow vain mosaic was minimum (22.50 and 26.00 per cent respectively) in variety, Parbhani Kranti and Varsha Uphar (32.75 and 34.75 per cent).

TABLE 1: Per cent YVM infestation on different Okra varieties (2007-08)

Sr. No	Name of Variety	Per cent YVM infestation at				
		2.5 month after sowing	3 month after sowing	3.5 month after sowing	4 month after sowing	4.5 month after sowing
1.	Talasi 522	5.25	8.00	19.25	38.50	49.50
2.	Anokhi	8.75	14.75	21.75	47.00	54.00
3.	GS-43	11.75	21.25	25.75	43.50	49.00
4.	Varsha Uphar	4.00	7.25	20.25	28.25	32.75
5.	Bio-Kirti	5.50	7.25	16.50	37.50	48.75
6.	Kamini	3.75	7.50	17.25	38.50	47.00
7.	Ajeet-333	5.00	7.25	16.75	27.75	42.50
8.	SOH-132	6.50	8.75	14.50	28.50	44.75
9.	ZOH-3002	5.00	6.50	11.50	25.50	42.75
10.	Bio-Gauri	8.50	12.50	19.50	35.75	51.25
11.	JKOH-3002	6.50	10.50	13.25	26.30	40.75
12.	Ajeet-311	5.75	12.00	19.75	36.00	44.25
13.	NOH-141	8.25	13.50	20.75	40.00	50.25
14.	Parbhani Kranti	2.25	4.00	7.75	14.50	22.50
	SE $\pm$					0.58
	C.D. at 5%					1.79

TABLE 2: Per cent YVM infestation on different Okra varieties (2008-09)

Sr. No.	Name of Variety	Per cent YVM infestation at				
		2.5 month after sowing	3 month after sowing	3.5 month after sowing	4 month after sowing	4.5 month after sowing
1.	Talasi 522	5.00	7.25	17.25	35.00	52.50
2.	Anokhi	7.00	12.50	20.75	44.50	53.50
3.	GS-43	11.00	19.75	23.25	46.00	50.00
4.	Varsha Uphar	4.50	8.00	19.00	32.25	34.75
5.	Bio-Kirti	7.00	9.25	17.50	39.75	48.00
6.	Kamini	5.00	11.00	17.00	40.00	49.50
7.	Ajeet-333	5.00	9.50	18.50	30.25	40.00
8.	SOH-132	7.50	10.50	16.50	31.00	48.50
9.	ZOH-3002	5.00	13.50	16.50	29.75	47.75
10.	Bio-Gauri	6.50	12.00	20.75	41.75	50.75
11.	JKOH-3002	5.50	9.50	19.75	33.50	43.25
12.	Ajeet-311	5.25	13.75	20.25	39.00	47.55
13.	NOH-141	8.75	12.50	23.75	47.50	51.25
14.	Parbhani Kranti	2.50	3.75	9.75	13.25	26.00
	SE $\pm$					2.13
	C.D. at 5%					6.59

TABLE 3. Yield performance of okra varieties

Sr. No.	Varieties	Fruit yield q/ha		
		2007-08	2008-09	Pooled mean
1	Talasi	50.55	40.88	45.72
2	Anokhi	40.53	34.55	37.54
3	G. S. 43	32.43	28.25	30.34
4	Varsha Uphar	73.40	59.79	66.60
5	Bio Kirti	47.55	40.85	44.20
6	Kamini	48.67	46.19	47.43
7	Ajeet-333	62.49	50.70	56.60
8	SOH - 152	56.94	55.65	56.30
9	20 H-3002	51.61	45.13	48.37
10	Bio-Gauri	42.28	41.78	42.03
11	JKOH-3002	33.59	25.11	29.35
12	Ajeet-311	52.93	45.39	49.16
13	NOH-141	42.27	43.06	42.67
14	Parbhani Kranti	72.42	61.88	67.15
	SE $\pm$	2.26	1.74	2.18
	C.D. at 5%	6.90	5.30	6.72

It was noticed that crop infected at early stage suffered more with severe symptoms like vein clearing, veinal chlorosis, complete yellowing of leaves and fruits were also malformed and appeared belached. Nath and Saikia

(1995), Zulfequar Ahmed and Patil (2004) and Prakasha et.al. (2010) have found the similar trends which help to confirm the present findings. There was significant difference in the yield during both the years. During the year 2007-08, maximum fruit yield (73.40 q/ha) was obtained in Varsha Uphar followed by variety, Parbhani Kranti (72.42 q/ha.) and during 2008-09, maximum fruit yield (61.88 q/ha) was obtained in Parbhani Kranti, followed by variety Varsha Uphar (59.79 q/ha.) which was at par. As pooled mean of yield concerned, both the varieties are at par. The mean yield of Parbhani Kranti varietiy was 67.15 q/ha. followed by Varsha Uphar (66.60 q/ha.).

Thus it is confirmed that from the consecutive trial for two years the varieties Parbhani Kranti and Varsha Uphar perfomed better in north konkan region due to their high yield potential, market acceptance and tolerance to yellow vein mosaic disease.

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