

INCIDENCE OF EPILACHNA BEETLE, *EPILACHNA VIGINTIOCTOPUNCTATA* FABR. ON DIFFERENT VARIETIES OF MUSK MELON, *CUCUMIS MELO* IN THE FIELD

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Musk melon, *Cucumis melo* L. is one of the most important cucurbits grown in the semi arid zones of Rajasthan, which is infested by various insect pests like pumpkin beetles, epilachna beetles and fruit flies (Kushwaha et al. 1973; Noor and Pareek 1978; Pareek and Kavadia 1986). Epilachna beetle, *Epilachna vigintioctopunctata* Fabr. severely damages the musk melon crop particularly at the flowering stage (Pareek and Kavadia 1986). Both grubs and beetles skeletonize the leaves, as well as, feed on flowers. No work seems to have been done on the incidence of this insect on musk melon. It was therefore, thought desirable to study the comparative incidence of epilachna beetle on seventeen varieties of musk melon in the field.

The experiments were laid out in randomised block design in sub-plots measuring 5x4 m in *ziad* (Feb-June 1980 and 1981) on the Horticultural Farm, College of Agriculture, Jobner. The seeds of musk melon varieties were procured from Agricultural Research Station, Durgapura, Division of Vegetables, I.A.R.I., New Delhi and Indian Institute of Horticultural Research, Bangalore. The seeds of seventeen varieties of musk melon were sown in the month of February by dibbling at a distance of 0.50 m on both sides of 0.70 m irrigation channel which divided the sub-plot into two halves. Each treatment was replicated thrice. Only one healthy seedling was left at one place after removing the other germinated ones. Five plants in each replicate were randomly selected and tagged to record the insect pest population. The population was recorded in the morning hours (upto 8 AM) at weekly intervals. The grubs and adults of epilachna beetle were counted visually on all the leaves of each of the tagged plant in the initial stage of the crop. In later stage the population counts were made only on three leaves i.e. basal, middle and terminal.

The data collected on the population of grubs and adults of epilachna beetle at its peak were subjected to analyses of variance after $\sqrt{0+0.5}$ transformation. On the basis of critical differences between the means of population preference to beetle was determined.

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Table 1. Population of Epilachna beetle on musk melon varieties

Varieties	Population* on 5 plants weeks after sowing																
	1980					1981											
	11	12	13	14	15	12	13	14	15	12	13	14	15	12	13	14	15
Pusa madhuras	18.3 (4.3)	49.0 (7.0)	31.6 (5.6)	6.3 (2.6)		14.3 (3.8)	21.6 (4.7)	46.3 (6.8)	28.3 (5.3)								
Pusa sharbati	19.3 (4.4)	64.3 (8.0)	43.6 (6.6)	7.6 (2.8)		17.0 (4.1)	25.6 (5.1)	67.0 (8.2)	46.3 (6.8)								
Punjab sunheri	28.0 (5.3)	74.0 (8.6)	54.0 (7.3)	11.6 (3.4)		19.6 (4.4)	43.6 (6.6)	72.6 (8.5)	48.0 (6.9)								
Punjab hybrid	27.6 (5.3)	72.3 (8.4)	45.6 (6.7)	8.6 (3.0)		18.3 (4.3)	39.6 (6.3)	70.0 (8.3)	47.3 (6.9)								
Durgapura madhu	37.6 (6.1)	81.3 (9.0)	60.6 (7.8)	10.3 (3.2)		31.3 (5.6)	64.0 (8.0)	90.6 (9.5)	55.3 (7.4)								
Hara gola	29.6 (5.4)	75.6 (8.7)	51.3 (7.1)	9.6 (3.1)		25.3 (5.0)	51.0 (7.1)	71.3 (8.4)	47.3 (6.9)								
Selection-1	20.6 (4.6)	61.6 (7.8)	37.0 (6.1)	6.0 (2.5)		15.6 (4.0)	25.3 (5.0)	66.6 (8.1)	33.3 (5.8)								
Lucknow bati	20.6 (4.6)	61.3 (7.8)	32.3 (5.7)	5.6 (2.4)		14.3 (3.8)	24.0 (4.9)	56.3 (7.5)	28.6 (5.3)								
No. 45	27.3 (5.2)	69.3 (8.3)	50.0 (7.0)	8.6 (3.0)		17.3 (4.2)	26.3 (5.1)	67.3 (8.2)	46.3 (6.8)								
Arka jeet	21.3 (4.6)	67.0 (8.2)	38.3 (6.2)	7.3 (2.7)		16.6 (4.1)	24.6 (4.9)	65.0 (8.0)	30.0 (5.5)								
Arka rajhans	22.3 (5.0)	60.3 (7.7)	38.3 (6.2)	6.6 (2.6)		14.3 (3.8)	21.3 (4.6)	56.3 (7.5)	27.6 (5.2)								
Hara madhu	24.3 (4.9)	68.0 (8.2)	43.6 (6.6)	8.0 (2.9)		17.6 (4.2)	38.6 (6.2)	67.3 (8.2)	47.0 (6.8)								

(Contd. page 165)

Table 1. Contd. from page 164

Varieties	Population* on 5 plants weeks after showing									
	1980					1981				
	11	12	13	14	15	12	13	14	15	
Faradin	10.3 (3.2)	23.6 (4.8)	7.0 (2.7)	1.0 (1.1)	17.6 (4.2)	7.6 (2.8)	10.6 (3.2)	27.3 (5.2)	17.6 (4.2)	
Jaune canari	9.6 (3.1)	21.0 (4.6)	7.3 (2.7)	0.6 (1.0)	16.3 (4.0)	5.3 (2.4)	9.6 (3.1)	24.3 (4.9)	16.3 (4.0)	
Hales best jumbo	15.0 (3.9)	29.6 (5.4)	9.0 (3.0)	0.6 (0.9)	21.6 (4.7)	8.6 (2.9)	12.6 (3.6)	33.6 (5.8)	21.6 (4.7)	
Amco sweet	10.3 (3.2)	26.3 (5.1)	9.6 (3.1)	1.6 (1.4)	21.6 (4.7)	8.3 (2.9)	11.3 (3.4)	27.3 (5.2)	21.6 (4.7)	
Honey dew golden	17.3 (4.1)	33.3 (5.8)	10.0 (3.2)	2.0 (1.5)	22.3 (4.7)	9.6 (3.1)	14.3 (3.8)	31.3 (5.6)	22.3 (4.7)	
CD 5%	0.58	0.58	0.58	0.52	0.37	0.49	0.49	0.49	0.37	

* Average of three replicates; Figures in parentheses are $\sqrt{n+0.5}$ transformed values.

The data presented in Table 1 for two consecutive years revealed that the population of grubs and beetles of epilachna was found on all the seventeen varieties, however, significant difference was observed in the population. Durgapura madhu (80-90 insects/5 plants) was found to be the most preferred variety followed by Hara gola (71-75 insects/5 plants), Punjab sunheri (72-74 insects/5 plants) and Punjab hybrid (70-72 insects/5 plants) as the population of grubs and beetles was recorded more than 70 insects at the peak period of incidence. The varieties Jaune canari, Faradin, Amco sweet, Hales best jumbo and Honey dew golden were observed to be the least preferred as low population (below 35 insects/5 plants) of the pest was recorded on them. The variety No. 45, Hara madhu, Pusa sharbati, Arka jeet, Arka rajhans, Selection-1, Lucknow bati and pusa sharbati existed in middle order of preference, where the population of insects was recorded between 45 and 70 insects/peal 5 plants. The difference in the population of various stages of epilachna beetle on the varieties screened may probably be due to the variable concentration of cucurbitacin which might have acted as lure to the beetles.

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