

Susceptibility of pumpkin cultivars/genotypes to red pumpkin beetle, *Aulacophora foveicollis* (Lucas) (Coleoptera: Chrysomelidae)

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Cucurbits are important vegetable crops grown in almost all states of India. Pumpkin (*Cucurbita moschata* Duchense) is attacked by a number of pests and diseases, which cause severe reduction in the development of crop and also the yield. Among these, red pumpkin beetle, *Aulacophora foveicollis* (Lucas) is one of the most destructive and serious pest (Pradhan, 1994). Various control measures have been suggested from time to time but none of them provide satisfactory solution. Hence, efforts were directed towards host plant resistance. The development of a resistant variety with a good yield and quality would be most desirable for an economic control measures. Therefore, an attempt was made to screen out the comparative susceptibility of pumpkin against red pumpkin beetle.

To ascertain relative resistance as well as to locate the source of resistance promising genotypes/cultivars of pumpkin were screened against *A. foveicollis* in field condition. An experiment was conducted in Randomized Block Design with four replications in pesticide free open field during *kharif* 2004 and summer 2005 at Main Vegetable Research Station, Anand Agricultural University, Anand. The pumpkin crop were sown at a distance of 2 × 1 m in plot size of 10 × 7 m during 1st week of July in *kharif* and 1st week of February in summer. Five plants in net plot area were

selected randomly from each genotypes/cultivars and the observations on number of adult beetles were recorded at weekly interval starting from one week of germination till the end of crops. Data, so obtained were subjected to appropriate transformation and statistically analysed for interpretation. The yield of genotypes/cultivars of each crop was also recorded separately from net plot area.

Results revealed that among the six genotypes/cultivars (Table 1) of pumpkin screened during *kharif* season, the genotypes APKL-7 and APKL-2 registered less (3.42 to 3.80) beetle population. The genotypes APKL-00-06 registered 4.41 beetles per plant and it was at par with local cultivar (4.92 beetles/plant) and APKL-4 (4.08 beetles/plant).

The genotype APKL-6 showed significantly higher (5.15) number of beetles per plant but it was at par with local cultivar. The highest (351.25 q/ha) pumpkin fruit yield was recorded in genotype APKL-7 and it was at par with APKL-2 (334.50 q/ha), APKL-4 (315.63 q/ha) and APKL-00-06 (310.13 q/ha) during *kharif* season (Table 1). The genotype APKL-6 produced lowest (256 q/ha) fruit yield and it was statistically at par with local cultivar (258.25 q/ha) and APKL-00-06 (310.13 q/ha).

During summer season, all the genotypes/cultivars found significantly differed from each other (Table 1). The genotype APKL-7 recorded least (4.04) beetle population followed by APKL-2 (4.32 beetles/plant) and APKL-4 (4.33 beetles/plant). The genotype APKL-00-06 and local cultivar were registered 4.75 and 4.97 beetles per plant, respectively. The genotype APKL-6 exhibited significantly higher (5.29) beetle population than all the tested genotypes/cultivars followed by local cultivar (4.97 beetles/plant). The genotype APKL-7 produced higher (395.8 q/ha) pumpkin fruit yield which was statistically not differed from the yield of APKL-2 (384.7 q/ha) and APKL-4 (365.2 q/ha) during summer season. Genotype APKL-00-06 (357.32 q/ha) was found statistically equally potential as APKL-4. Among the tested genotype/cultivars, APKL-7 recorded lowest (270.7 q/ha) fruit yield and it was at par with local cultivar (275.80 q/ha).

Pooled analysis for two seasons revealed that significantly least (3.72) number of beetles were found on APKL-7 followed by APKL-2 (4.04 beetles/plant) and APKL-4 (4.33 beetles/plant). The genotypes APKL-4 and APKL-00-06 were statistically not differed in susceptibility against *A. foveicollis* (Table 1). The genotype APKL-6 exhibited higher (5.19) beetle population but it was at par with local cultivar (4.97). Pooled over season data (Table 1) of fruit yield of pumpkin showed that the genotype APKL-7 produced highest (373.52 q/ha) yield than all the genotypes/cultivars, except APKL-2 (359.6 q/ha). The genotype APKL-4 and APKL-00-06 were found at par and produced 333.72 to 340.41 q/ha fruits. The genotype APKL-6 was poor in yield (263.35 q/ha) potential and it was statistically at par with local cultivar (267.02 q/ha).

Table 1: Incidence of *A. foveicollis* on different cultivars of pumpkin and its effect on yield

Genotypes/ Cultivars	Beetles/plant			Yield (q/ha)		
	<i>Kharif</i>	Summer	Pooled	<i>Kharif</i>	Summer	Pooled
APKL-2	1.95 (3.8)	2.08 (4.33)	2.01 (4.04)	334.50	384.7	359.6
APKL-4	2.02 (4.08)	2.14 (4.58)	2.08 (4.33)	315.63	365.2	340.41
APKL-6	2.27 (5.15)	2.30 (5.29)	2.28 (5.19)	256.00	270.7	263.35
APKL-7	1.85 (3.42)	2.01 (4.04)	1.93 (3.72)	351.25	395.80	373.52
APKL-00-06	2.10 (4.41)	2.18 (4.75)	2.14 (4.57)	310.13	357.32	333.72
Local	2.22 (4.93)	2.23 (4.97)	2.23 (4.97)	258.25	275.80	267.02
S. Em. ±	0.039	0.007	0.020	18.55	10.89	5.31
C.D. at 5%	0.123	0.021	0.059	56.81	32.67	15.92
C.V. %	13.12	5.19	9.22	12.39	9.89	11.79

Figures in parentheses are original values, those outside are \sqrt{x} transformed values

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