## SHORT COMMUNICATIONS

## Assessment of yield infestation relationship of *Cnaphalocrocis medinalis* in Rice

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Rice leaf folder (*Cnaphalocrocis medinalis* Guenee) was of minor importance but now it has assumed alarming proportion in Jammu region. The recent outbreak of this pest in Jammu region has already met with journalistic fervour in various national and local newspapers, work on crop loss assessment as influenced by rice leaf folder is negligible, hence, present study was conducted.

Field trials were conducted at University Research Farm, SKUASAT-J during kharif 2005 and 2006. The one month old seedlings cv. Jaya were transplanted in the plot size of  $3 \times 2m$  in each case. The row to row and plant to plant distance was kept as 20 and 15cm, respectively. Different levels of leaf folder population were maintained in cages under field condition for differential degree of leaf infestation. Yield of these plants was recorded at harvest. Correlation was made between % leaf infestation and yield at harvest. Larval populations 2, 4, 6, 8 and 10 were maintained in cages. The required larval population was maintained by covering the rice plants in 5 hills with a muslin cloth, forming a cage. These cages were checked daily for maintaining the required larval populations.

The pooled data of both the years 2005 & 2006 (Table 1, Fig. 1) revealed that there was negative correlation (r = -0.892) between % leaf infestation and yield. The regression equation was Y = 126 - 554 X, where Y indicates grain yield in g and X

Table 1. Relationship between damage ca	used by
leaf folder, Cnaphalocrocis medinalis ar	nd yield
during kharif 2005-2006 (Pooled).	

No. of larvae maintained (larvae/5 hills)	Damaged leaves (%)	Yield (g/5 hills)	Yield loss (%)
0	0.00	117.15	0.00
2	9.29	114.67	2.12
4	13.66	108.65	7.26
6	18.94	101.99	12.94
8	23.99	97.56	16.72
10	28.74	89.80	23.35

Yield infestation relationship;  $Y = 126-5.54 \text{ X} (r^2 = 0.796^*)$ 

Y =Yield (grams); X =Damaged leaves (%)



Fig. 1. Yield infestation relationship due to leaf folder.

represents % damaged leaves. Green house studies indicated that 10 larvae caused 53.5 % damage and 30.3 % loss in grain weight after feeding for 17 days on 50 days old plant (Verma *et al.*, 2010). Leaf folder larvae caused damage to plants by folding and feeding leaves, removing tissues and shading of leaves available for photosynthesis. Often leaf folder larvae infest the upper layer of the canopy. Accordingly, leaf width which affected respiration get reduced. A 10 % increase in damaged leaves reduced the yield by 0.15 g/tiller. Prasad *et al.* (2007) reported that with an increase of every 1%

leaf area consumed by the insect, the reduction of grain yield was 0.072 g.

## References

- Prasad, S.S., P.K. Gupta and B.L. Kanaujia (2007). Simulation study on yield loss due to Scirpophora incertula in semi deep water rice. Ann. Pl. Protec. Sci. 15: 491-492.
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## Field performance of *Bt* cotton genotypes against Sucking pests

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The crop is substantially attacked by sucking pests viz., aphids, Aphis gossypii, jassids, Amrasca biguttula biguttula, thrips, Scirtothrips dorsalis and whitefly, Bemisia tabaci, which have to be managed by other means. There are reports on increased incidence of sucking pests and emergence of minor or secondary pests on Bt cotton. Hence, the present study was aimed to know the reaction of Bt cotton genotypes to sucking pests under field conditions.

Field trial was conducted in R.B.D. at Cotton Research Station, Nanded during *kharif*, 2008-2009 to test 16 popular *Bt* transgenic cotton genotypes replicated twice against sucking pests. Each genotype was sown in four rows at 90 x 60 cm spacing with 2.7 × 6.0 m plot size under rainfed condition and also kept unprotected. From each genotype, 5 plants were selected randomly for recording fortnightly observations of sucking pests/3 leaves (one leaf each from top, middle & bottom of the plant). The pooled mean of three observations of sucking pests were subjected to statistical analysis.

The incidence of aphids was noticed throughout the crop season and the non-significant differences on the population level of aphids were observed. The mean population of aphids ranged from 0.20 to 2.57 during crop season. The genotypes VBCH-1503, KCH-135, RCH-2, SP-1037, SP-499 and Ankur-3032 recorded minimum population of aphids (0.20, 0.23, 0.37, 0.40, 0.40 & 0.47/3 leaves, respectively). Over all incidence of jassids was low to moderate throughout crop season and the significant differences were observed on the population of jassids. Out of sixteen, Bt cotton genotypes Tulsi-4, SP-499 and PRCH-504 were relatively tolerant to jassids as showed low mean population of jassids viz., 2.13, 2.43 and 2.97, respectively against other genotypes. The incidence of thrips on the tested genotypes was non-significant. Decreased level of incidence of thrips, 5.40 and 5.90/3 leaves was recorded on VBCH -1505 and SP-1037, respectively in comparison with their counterparts. The hybrids NSPL-405 (8.83 thrips/ 3 leaves) and VBCH-1503 (8.83 thrips/ 3 leaves) were recorded maximum