

RESEARCH NOTE

Occurrence of army worm, *Mythimna sepatata* on *Rabi* sorghum

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ABSTRACT

The incidence of *Mythimna sepatata* on *Rabi* sorghum was noticed from fourth week of November and remained up to second week of January, ranged between 0.04 to 0.15 larvae per plant. Maximum larval population was recorded during first week of December (0.15 larvae/plant). The correlation studies revealed that abiotic factor did not influence on army worm population on sorghum during *Rabi* season.

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Among the foliage feeding insects, army worm, *Mythimna separata* caused heavy losses to *Rabi* sorghum in southern Maharashtra during 1982 (Mote, 1984). Generally, this pest occurs regularly on *Kharif* sorghum in most of the sorghum growing areas of State, but now-a-days it was found in *Rabi* sorghum and causes complete defoliation in the field. Hence, the present investigation was carried out which also helps in forecasting the pest incidence and to incorporate the same in integrated pest management programme gainfully.

The present investigation was carried out at Agricultural Research Station, Navsari Agricultural University, Tanchha, Dist. Bharuch to study the population dynamics of army worm and its relation to weather parameter during *Rabi* 2006-07 and 2007-08. The sorghum crop (variety GJ 38) was grown in 400 m² area during *Rabi* 2006-07 and 2007-08 and raised successfully by adopting recommended agronomical practices. For recording the observations, whole plot was divided in to 20 sectors and 5 plants were randomly selected from each spot. Observations on population of army worm were recorded from the same selected five plants from the each sector at weekly interval starting from one week after germination throughout the growing season. The crop was kept free from any insecticide application. In order to study the effect of weather parameters on population of army worm, correlation co-efficient and multiple/simple regression were worked out.

During *Rabi* 2006-07 *Mythimna separata* incidence

(Table 1) on sorghum crop commenced with 0.24 larva/plant from 48th standard week (last week of November). The number of larvae per plant decreased gradually and disappeared after 2nd standard week (second week of January). During this period larval population ranged between 0.04 to 0.24 larva/plant. While in *Rabi* 2007-08, it appeared between 48th standard week (last week of November) to 2nd standard week (second week of January) ranging between 0.02 to 0.07 larvae per plant with a maximum during third week of December (51st standard week, 0.07 larvae/plant). The larval population was low during *Rabi* 2007-08 as compared to *Rabi* 2006-07. It might be due to biotic or abiotic factors influencing on population.

The pooled data of two years (Table 1 and Fig. 1) revealed that the army worm population was initiated from 48th standard week (last week of November). The average number of army worm ranged between 0.04 to 0.15 larvae per plant during the month of November to January, while the population was not recorded in early and later stage of crop. More or less one peaks of population level were observed in the first week of December (49th standard week) Thereafter, the pest population declined gradually. The observation was slight different from the observation made by Mote (1984) who noted that army worm damage on sorghum during October and November when the crop was 1½ to 2½ months old. The variation in present finding may be due to effect of ecological condition prevailing in the area and population density of army worm in the locality.

The correlation co-efficient study (Table 2) revealed that

Table 1: Population of armyworm, *M. separata* on sorghum variety CJ 38 in *Rabi* season

Sr No.	MW	WAS	Mean army worm population per plant		
			2006-07	2007-08	Pooled
1.	45	2	0	0	0
2.	46	3	0	0	0
3.	47	4	0	0	0
4.	48	5	0.24	0.02	0.13
5.	49	6	0.24	0.05	0.15
6.	50	7	0.21	0.06	0.14
7.	51	8	0.18	0.07	0.13
8.	52	9	0.05	0.05	0.05
9.	1	10	0.05	0.05	0.05
10.	2	11	0.04	0.04	0.04
11.	3	12	0	0	0
12.	4	13	0	0	0
13.	5	14	0	0	0
14.	6	15	0	0	0

MW = Standard meteorological week, WAS = Week after sowing

Table 2: Correlation coefficient between *M. separata* and weather parameter during *Rabi* season

Year	Weather parameter								
	Temperature ⁰ C			Humidity %			Sunshine hours	Wind velocity	Evaporation
	Max.	Min.	Mean	Morn.	Even.	Mean			
2006-07	-0.079	-0.091	-0.091	-0.217	-0.037	-0.127	0.256	-0.182	-0.351
2007-08	0.159	0.115	0.142	0.541*	0.616*	0.604*	-0.454*	-0.187	0.320
Pooled	0.094	0.082	0.091	0.124	0.287	0.206	-0.004	0.092	-0.80

* Indicate significance of value at P=0.05

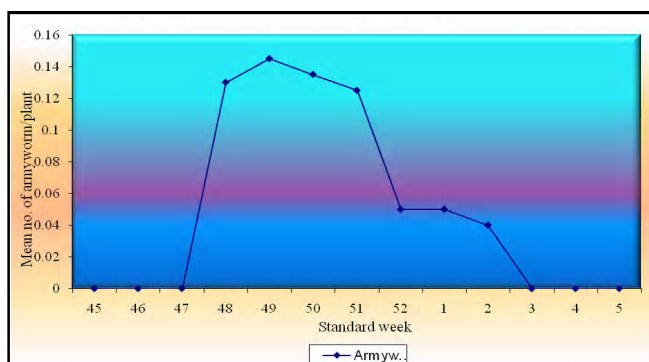


Fig. 1: Population of armyworm on sorghum during *Rabi* season (Pooled)

the army worm population had no significant correlation with

weather parameters indicating that no impact of these weather parameters on army worm population.

Conclusion :

The incidence of army worm was noticed from last week of November and remained up to second week of January, ranged between 0.04 to 0.15 larvae per plant with a maximum (0.15 larvae/plant) during first week of December. Abiotic factors had no significant correlation with army worm population indicating that no impact of these weather parameters on army worm population in *Rabi* sorghum.

REFERENCES

Mote, U.N. (1984). Occurrence of army worm on *Rabi* sorghum. *J. Maharashtra Agric. Univ.*, **9** (2): 230.
