

## Seasonal incidence of fruit fly, *Bactrocera cucurbitae* (Coquillet) on cucumber

A.O. KATE, R.K. BHARODIA, M.D. JOSHI\*, A.M. PARDESHI AND R.R. MAKADIA

Department of Entology, College of Agriculture, Junagadh Agricultural University, JUNAGADH (GUJARAT) INDIA

### ABSTRACT

Studies on seasonal incidence of fruit fly, *Bactrocera cucurbitae* (Coquillet) revealed that infestation of fruit fly commenced during 5<sup>th</sup> week after germination and increased during next four weeks (6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> week after germination) and formed the peak with an infestation of 22.4 per cent. Then, the infestation declined gradually up to 12.00 per cent during last week of April i.e. 12<sup>th</sup> week after germination. The correlation studies revealed that the maximum and minimum temperature had positive correlation with infestation to fruits ( $r = 0.6667$  and  $0.3798$ , respectively). While, morning relative humidity had positive correlation ( $r = 0.2160$ ) and evening relative humidity had negative correlation ( $r = -0.1738$ ) with fruit infestation.

**Key words :** Seasonal incidence, Cucumber, Fruit fly, *B. cucurbitae*.

### INTRODUCTION

Fruit fly, *B. cucurbitae* is one of the most destructive pests often rendering cultivation of cucumber unprofitable. The fruit are damaged by the maggots of this fly as the female fly lays its eggs in the tissues of fruits. The maggots feed on flesh and look like rotten fruits. The fruit fly also oviposits in tender plant tissues such as terminals, unopened flowers, young stems, roots, and seedlings. This may result in the death of the plant. In Gujarat, this became a serious pest of cucumber and heavy losses are caused by this pest. So it was necessary to see the seasonal incidence of this pest on cucumber as there is little information available on cucumber.

### MATERIALS AND METHODS

The studies on seasonal incidence of fruit fly, *B. cucurbitae* on cucumber cv. GREEN GOLD was carried out in the field condition at College Farm, College of Agriculture, Junagadh Agriculture University, Junagadh (Gujarat) during summer season of 2007. The seeds were sown in a plot size (gross) 27 m x 6 m with a spacing 1.50 m x 60 cm. All the recommended agronomic practices were also adopted. The area was divided into 5 quadrates of 4.5 m x 1.2 m each. Five plants were selected randomly from each quadrate for the observations. The observations on fruit infestation were recorded and continued till last picking of fruits. The weight of both the types of fruits was also recorded. The data were correlated with meteorological observations to ascertain the effects of abiotic factors on the incidence of fruit fly.

### RESULTS AND DISCUSSION

The data (Table 1) showed that the infestation of fruit fly on cucumber crop commenced from 5<sup>th</sup> week

after germination i.e. 2<sup>nd</sup> week of March with an infestation of 6.0 per cent. The infestation increased during successive weeks and formed the peak in 9<sup>th</sup> week after germination of the crop and reached at peak with 22.4 per cent. Then the infestation decreased gradually during 11<sup>th</sup> and 12<sup>th</sup> weeks after germination the crop (3<sup>rd</sup> and 4<sup>th</sup> week of April). Thus, the infestation of fruit fly remained throughout the crop season.

**Table 1 : Seasonal incidence of fruit fly, *B. cucurbitae* on 'Greengold' variety of cucumber during the summer season of 2007**

Weeks after germination	Standard week	Date of observation	Mean per cent fruit infestation
5	11	12-03-2007	6.0
6	12	19-03-2007	8.3
7	13	26-03-2007	10.2
8	14	02-04-2007	19.0
9	15	09-04-2007	22.4
10	16	16-04-2007	18.0
11	17	23-04-2007	14.0
12	18	30-04-2007	12.0

The correlation coefficient values (Table 2) indicated that the maximum and minimum temperature had positive correlation with infestation to fruits ( $r = 0.6667$  and  $0.3798$ ).

**Table 2 : Effect of weather parameters on seasonal incidence of fruit fly, *B. cucurbitae* on cucumber**

Sr. No.	Character	Weather parameters			
		Temperature (°C)		Relative humidity (%)	
		Max.	Min.	Morning	Evening
1.	Infestation (%)	0.6667	0.3798	0.2160	- 0.1738

n = 8

\* r ' values at 5 % and 1 % are 0.707 and 0.834, respectively

While morning relative humidity had positive correlation ( $r = 0.2160$ ) and evening relative humidity had negative correlation ( $r = -0.1738$ ). But such type of study has not been made by any research workers on cucumber except Abu and Srivastava (2004) on bitter gourd at Kanpur. Even though, similar trend was also observed by these research workers on bitter gourd at Kanpur during the year of 2002 and 2003.

## REFERENCES

**Abu, Manzar and Srivastava, J. P. (2004).** Population fluctuation of fruit flies, *Bactrocera* spp. infesting bitter gourd in Central Uttar Pradesh. *Prog. Hort.*, **36**(1): 146-149.

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