

P-ISSN: 2349–8528 E-ISSN: 2321–4902 www.chemijournal.com IJCS 2020; 8(5): 195-196 © 2020 IJCS Received: 26-05-2020 Accepted: 14-07-2020

CB Solanki Department of Entomology, SDAU, Palanpur, Gujarat, India

JR Patel

Associate Research Scientist (Ento.), Agro forestry Research Station, SDAU, Palanpur, Gujarat, India

NJ Chaudhary Department of Entomology, SDAU, Palanpur, Gujarat, India

AR Mohapatra Department of Entomology, AAU, Anand, Gujarat, India

MK Katesiya Department of Entomology, SDAU, Palanpur, Gujarat, India

SM Patel Department of Entomology, SDAU, Palanpur, Gujarat, India

Anu Thomas

Department of Entomology, Kerala Agricultural University, Kerala, India

Corresponding Author: CB Solanki Department of Entomology, SDAU, Palanpur, Gujarat, India

Survey of fruit fly incidence in cucumber

CB Solanki, JR Patel, NJ Chaudhary, AR Mohapatra, MK Katesiya, SM Patel and Anu Thomas

DOI: https://doi.org/10.22271/chemi.2020.v8.i5c.10298

Abstract

The survey on fruit fly infesting cucumber was in three different talukas of Banaskantha district showed that the infestation of fruit fly was found throughout the fruiting period. The fruit fly damage was first time noted after 2nd fortnight of March in all talukas. The fruit fly damage was observed 8.00 to 9.66 per cent during the 2nd fortnight of March in all talukas with highest fruit fly damage (9.66 %) in Palanpur taluka. In the 1st fortnight of April, the lowest fruit fly damage was observed in Palanpur taluka which was 10.40 per cent and the highest fruit fly damage (10.96 %) in Dantiwada taluka. At 2nd fortnight of May, the lowest (9.48 %) fruit fly damage was noted in Dantiwada taluka and the highest (12.66 %) fruit fly damage was observed in Deesa. The highest number of fruit fly emergence (16 fruit flies/5fruits) from Malgadh village of Deesa taluka and lowest number of fruit fly emergence (7 fruit flies/5 fruits) from Chandisar village of Palanpur taluka. During entire season the average fruit fly damage highest (8.75 %) was found in Deesa taluka, where a minimum damage (7.66 %) found in Dantiwada taluka.

Keywords: Survey, fruit fly, infestation

1. Introduction

India is the second largest producer of fruits and vegetables in the world and is the leader in several horticultural crops. The total area under vegetable cultivation during 2017-18 in India is 10,259 thousand hectares with annual production 1,84,394 thousand tonnes (Anon., 2017-18)^[1]. Indian sub continent with its rich biodiversity is the primary centre of origin for cucurbits like cucumber, ridge gourd, sponge gourd, ash gourd, pointed gourd and secondary origin for watermelon and bottle gourd. Nearly 30 species under family cucurbitaceae are commercially exploited for vegetable purpose. Cucumber fruits are generally highly nutritious with rich source of vitamins and mineral contents. Green plant parts and growing tips are the rich source of calcium, phosphorus, ascorbic acid and iron. Seeds are also the good source of protein, calcium, phosphorus, iron, arginine, methionine and ascorbic acid. Cucumber is an annual crop and a climbing herb. Cucumber is grown for its immature fruits that are used as salad vegetable and for pickles (Kumar and Shankar, 2017)^[2].

Cucurbits constitute the largest group of summer vegetables grown all over the world. Due to the most suitable and favorable agro-climatic conditions of Gujarat state, the area under the cultivation of cucurbitaceous crop increasing rapidly. Cucumber (*Cucumis sativus* L.) is the popular crop of the cucurbitaceae family grown. Fruits of these crops are rich in iron, vitamins (A, B, C), protein, minerals and have medicinal properties. In India, it occupies an area of 82 thousand hectare with production of 1260 thousand metric tonnes during 2017-18 (Anon., 2017-18)^[1].

2. Material and methods

Five cucumber fields were purposively selected from each three talukas (Dantiwada, Palanpur and Deesa). Number of damaged fruit due to fruit fly were calculated and per cent damage worked out. Five damaged fruits were collected at fortnight interval from each field and kept in a round galvanized cage to record the number of fruit fly adults emerged from pupae.

3. Results and discussion

The survey on fruit fly infesting cucumber was carried out in summer season of 2018 in three different talukas of Banaskantha. In each talukas five cucumber fields selected the location wise, periodical data on fruit fly infestation in cucumber are presented in Table 1.

The data (Table 1) showed that the infestation of fruit fly was found throughout the fruiting period. The fruit fly damage was first time noted after 2nd fortnight of March in all talukas. The fruit fly damage was observed 8.00 to 9.66 per cent during the 2nd fortnight of March in all talukas with highest fruit fly damage (9.66 %) in Palanpur taluka. In the 1st fortnight of April, the lowest fruit fly damage was observed in Palanpur taluka which was 10.40 per cent and the highest fruit fly damage (10.96 %) in Dantiwada taluka. At 2nd fortnight of April the fruit fly damage was 12.47 per cent in Deesa taluka, whereas it was 9.88 per cent in Dantiwada taluka. During the 1st fortnight of May, the lowest (9.48 %) fruit fly damage was noted in Dantiwada taluka and the highest (12.66 %) fruit fly damage was observed in Deesa. During entire season the average highest (8.75 %) fruit fly damage per cent was found in Deesa taluka, where a minimum damage i.e., 7.66 per cent found in Dantiwada taluka.

The data (Table 2) showed that the highest number of fruit fly emergence (16 fruitflies/5 fruits) from Malgadh village of Deesa taluka and lowest number of fruit fly emergence (7 fruitflies/5 fruits) from Chandisar village of Palanpur taluka.

Manoj *et al.* $(2017)^{[3]}$ recorded the maximum adult catches of 10.25 adults/trap/day was recorded from snake gourd cropping field as against minimum catches 2.5 adults/trap/day in bottle gourd field. Regarding infestation of fruits, mean number of maggots per infested fruit was maximum in snake gourd (10) showing more preference as compared to absence of maggot in bottle gourd indicating the least preference.

Sapkota *et al.* (2010)^[4] found that the cucurbit fruit fly causes significant damage in squash preferably in young and

immature stages. The cucurbit fruit fly causes about 50% (10% flower and 40% fruit) losses in squash yield under farmers field condition in uncontrolled situations.

4. Summary and Conclusions

The survey on fruit fly infesting cucumber was carried out in summer season of 2018 purposely selected cucumber growers fields in the villages of three different talukas of Banaskantha. The fruit fly damage was first time noted during 2^{nd} fortnight of March in all talukas. The fruit fly damage was observed 8.00 to 9.66 per cent during the 2^{nd} fortnight of March in all talukas with highest fruit fly damage (9.66 %) in Palanpur taluka. During entire season the average highest (8.75 %) fruit fly damage *i.e.*, 7.66 found in Dantiwada taluka. The highest number of fruit fly emergence (16 fruit flies/ 5fruits) from Malgadh village of Deesa taluka and the lowest number of fruit fly emergence (7 fruit flies/ 5 fruits) from Chandisar village of Palanpur taluka.

Lable 1 , but let of that his mendemee in eacunde	Table 1:	Survey	of fruit fl	y incidence	in cucumber
--	----------	--------	-------------	-------------	-------------

Month	Fruit damage (%) due to fruit fly			
Ivioitti	Dantiwada	Deesa	Palanpur	
1st Fortnight March	0.00	0.00	0.00	
2 nd Fortnight March	8.00	8.04	9.66	
1st Fortnight April	10.96	10.61	10.40	
2 nd Fortnight April	9.88	12.47	10.73	
1st Fortnight May	9.48	12.66	9.76	
Average	7.66	8.75	8.11	

Table 2: Details of fruit	fly emerged fro	m damaged fruits	s collected from	different villages
---------------------------	-----------------	------------------	------------------	--------------------

Taluka	Name & village of field	No. of fruit fly emerged/ 5 fruits
	Sikaria (F1)	10.0
Dantiwada -	Sikaria (F2)	15.0
	Sikaria (F3)	13.0
	Nandotra (F1)	6.0
	Nandotra (F2)	9.0
	Average of taluka	10.6
Deesa	Latiya (F1)	14.0
	Latiya (F2)	10.0
	Vadaval (F1)	8.0
	Vadaval (F2)	7.0
	Malgadh (F1)	16.0
	Average of taluka	11.0
Palanpur	Chandisar (F1)	7.0
	Chandisar(F2)	11.0
	Chandisar (F3)	10.0
	Madana (F1)	8.0
	Madana (F2)	14.0
	Average of taluka	10.0
Note : $F = Fiel$	d	

5. References

- 1. Anonymous. Ministry of Agriculture and Farmers Welfare data based, 2017-18. (agriculture.gov.in).
- Kumar A, Shankar U. Management of Whitefly on Cucumber, *Cucumis sativus* in Jammu Climatic Region (J&K) India. Trends in Biosciences. 2017; 10(36):7510-7513.
- 3. Manoj AM, Sridharan S, Mohan C, Awasthi NS. Varying infestation of fruit fly, *Bactrocera Cucurbitae* (Coquillett) in Different Cucurbit Crops. Journal of Entomology and Zoology Studies. 2017; 5(3):1419-1421.
- 4. Sapkota R, Dahal KC, Thapa RB. Damage assessment and management of cucurbit fruit flies in spring-summer

squash. Journal of Entomology and Nematology. 2010; 2(1):007-012.