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COMPOSITION OF FRUIT FLY *BACTROCERA* SPECIES IN NAVSARI DISTRICT IN SAPOTA

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Three species of fruit fly *viz. Bactrocera dorsalis* (Hendel), *Bactrocera zonata* (Saunders) and *Bactrocera correcta* (Bezzi) were recorded in sapota orchards at Navsari using methyl eugenol traps. The fruit fly species *B. dorsalis* was most predominant species (65.14%) in sapota orchards followed by *B. zonzta* (32.87%) and *B. correcta* (1.97 %). The same fruit fly species were also recorded from fallen infested sapota fruits.

Key words : Fruit flies, population, Sapota orchard, Navsari, Gujarat.

INTRODUCTION

Fruit fly is the important pest of sapota, mango and other fruit crops grown in south Gujarat. The successive cultivation and export of these crops are highly dependent on sound control of fruit flies which are attracted towards methyl eugenol trap. Trapping fruit flies in this way is one of the alternatives to manage this pest with eco-friendly way. So far 4000 species of fruit flies were reported and each of the species so far reacts differently with environment. The correct identification of these species particularly in sapota and mango have a great value to know the status of sibling species in the area which may helps in developing and adopting timely control strategies. The present study was undertaken to find out species composition of the fruit fly in sapota orchards at Navsari district of south Gujarat with the help of chemical attractant trap.

MATERIALS AND METHODS

The population of fruit fly species in sapota was recorded by installing and trapping adults in methyl eugenol trap at three different talukas of Navsari district i.e., Gandevi, Chikhali and Navsari. The species composition of fruit flies was studies in fallen fruit of sapota from the orchards of these locations. The studies were carried out in 3.0 ha sapota fruit orchards between 1st December 2009 to 30th November 2010. In each sapota orchard, two traps of methyl eugenol were hanged and the fruit flies in each trap were recorded at fortnightly interval. The count of fruit flies from each trap was monitored separately at fortnight interval.

One kg of fallen fruits of sapota were collected from each orchard and kept in rearing cage on bed layer of mixture of sand to facilitate the pupation and finally for emergence of adult fruit flies. The flies collected from each trap and emerged from the damaged fruits were examined under microscope for their morphological characters viz., colour of the flies, wing types, etc. The total number of fruit flies from each lot and number of flies under each type were recorded and percentage of each species was calculated taluka wise and the whole district scenario was also worked out.

RESULTS AND DISCUSSION

The population of fruit flies collected at fortnightly between 1st December 2009 to 30th November 2010 is presented in Table I. All three species of fruit flies belonging to family Tephritidae, subfamily Dacinae and tribe Dacini were recorded in Navsari district of Gujarat. The *B. dorsalis* (65.14%) was found as predominant species followed by *B. zonata* (32.87%) and *B. correcta* (1.97%) in methyl eugenol traps at three different locations of Navsari district (Table I). Bagale & Prasad (1983) found *B. dorsalis* attracted to methyl eugenol trap. Kawashita *et al.* (2004) also reported catches of *B. correcta*, *B. dorsalis* and *B. zonata* in methyl eugenol traps. Tsuruta *et al.* (2005) recorded that fruit fly species *B. doralis*, *B. correcta*, *B. versicolor* and *B. zonata* were responsive to the trap baited with methyl eugenol. Thus, the present findings of this investigation are in confirmation with those of earlier research work.

Table I : Population of fruit fly species collected from methyl eugenol trap in sapota orchard at different locations.

Location	**Emerged per cent population of fruit fly species**		
	B. dorsalis	***B. correcta***	***B. zonata***
Chikhali	29.81	0.84	69.84
Gandevi	84.71	1.68	13.60
Navsari	73.35	3.29	23.34
Total of Navsari District	65.14	1.97	32.87

Number and per cent population of fruit fly species from fallen fruit emerged are presented in Table II. It was found that the emerging species of fruit fly were *B. dorsalis* (62.35%), *B. zonata* (36.35%) and *B. correcta* (1.29 %) from fallen fruit. Among these also the *B. dorsalis* was the predominant (62.35%) species of fruit flies recorded.

Table II : Population of fruit fly species emerged from fallen fruits at different locations.

Location	Emerged per cent population of fruit fly species		
	B. dorsalis	*B. correcta*	*B. zonata*
Chikhali	28.54	1.50	69.96
Gandevi	82.48	1.28	16.25
Navsari	76.04	1.11	22.84
Total of Navsari District	62.35	1.29	36.35

These findings are more or less in agreement with the reports of earlier research workers. Jalaluddin *et al.* (1999) recorded fruit fly species *B. correcta*, *B. dorsalis* and *B. zonata* from guava fruit and out of them *B. correcta* was predominant one. Gupta & Bhatia (2000) reported the fruit flies *B. dorsalis*in guava orchard. In the present the same species of fruit fly *i.e. B. dorsalis* was the predominant in Navsari district of south Gujarat.

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