Indian J. Appl. Ent. **32**(1) : 28–30 (2018)

SCREENING OF FIVE MANGO VARIETIES AGAINST FRUIT FLIES (DIPTERA: TEPHRITIDAE) UNDER LABORATORY CONDITION

A. C. PARAB*, S. D. DESAI, V. S. DESAI, S. K. MEHENDALE AND G. M. GOLVANKAR
Department of Agril. Entomology, College of Agriculture, Dapoli
Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli. Dist. Ratnagiri- 415712 (M.S.)
Email*: amolparab150@gmail.com

ABSTRACT

The present investigation was carried out on screening of five mango varieties against fruit flies under laboratory condition in the Department of Agril. Entomology, College of Agriculture, Dapoli during May to July 2017. Result revealed that out of five varieties tested two varieties *viz.,* "Pairi" and "Sindhu" were completely free from fruit fly infestation. The per cent infestation was maximum in Alphonso (30.00 %), followed by Keshar (20.00 %) and Ratna (15.00 %). The observations recorded showed that the varieties Alphonso, Keshar, and Ratna were preferred by fruit flies. The results obtained are based on natural preference of fruit flies in the field.

Key words: Screening, Tephritidae, Fruit flies, mango cultivars.

INTRODUCTION

Mango *(Mangifera indica* L.) is the oldest and choicest fruit of the world. It is considered as 'National fruit of India' and known as 'King of fruits' owing to its nutritional richness, unique taste, pleasant aroma and its medicinal importance. Due to its good qualities and high medicinal values, it is enjoyed by masses and classes from all comers of the world.

The total world production of mango is 43,300,000 tonnes (Anon., 2015b). It is commercially grown in more than 111 countries but nowhere it is as greatly valued as in India where 40 per cent of area under fruit crops is only under mango. India is the major mango producer in the world, with an area of 2.218 million hectares and the annual production of 18.832 million tonnes with productivity of 8.49 MT/ha. (Anon., 2015a). India contributes about 64 per cent of the world mango production. In Maharashtra, mango occupies an area of 4.82 lakh ha with annual production of 6.33MT with productivity of 1.3MT/ha (Anon., 2014).

In Konkan, 1, 82,000 ha area is under mango cultivation with annual production of 3.25 lakh MT. The productivity of mango in Konkan is about 2.5 t/ha, which is about three times less than the average productivity of the country (Anon., 2014). In Konkan, about 90 per cent area of mango is occupied by single cultivar "Alphonso", which is locally called as "*Hapus*".

In spite of all good points, mango crop suffers a regular colossal loss due to ravages of pest. Among the insect-pests, fruit fly is the serious and destructive pest of mango. Fruit fly belongs to family Tephritidae that represents one of the biggest families of the order Diptera. The family includes more than 4000 species in 500 genera (White and Harris, 1992). The family is divided into 3 sub families and of them Dacinae has a number of pest species of economic importance. These flies are widespread all over the the world, except the Arctic and Antarctic regions and richly predominant in the tropical and subtropical areas. Oriental region is rich in Dacinae sub family with nearly 1000 species so far recorded**.**

The development of varieties resistant to pests is an important component programme an integrated pest management (IPM). The development and then cultivation of pests resistant mango cultivars has been limited, because of the lack of adequate information on the genetic variability and sources of resistance in the available mango genotypes and influence of these sources on the pest multiplication. Though the crop is economically important, the information on the fruit flies and screening of cultivars for the source of resistance to these pests of mango are very much lacking particularly in Konkan region in Maharashtra. Hence, the present study was undertaken for the screening of five mango varieties against fruit flies (Diptera: Tephritidae).

MATERIAL AND METHODS

Cultivars:

1. Alphonso 2. Keshar 3. Pairi

4. Ratna 5. Sindhu

Mature fruits of above varieties were harvested from the field Horticulture nursery, Department of Horticulture, College of Agriculture, Dapoli and kept for ripening under laboratory condition in the Department of Agricultural Entomology, College of Agriculture, Dapoli, Dist- Ratnagiri during May to July 2017.

Methods of recording observations

Among the harvested fruits, 20 randomly selected fruits from each cultivar were kept under observation for the emergence of fruit fly. The per cent fruit infestation was calculated by using following formula;

$$\text{Per cent fruit infestation} = \frac{\text{No. of fruits infested}}{\text{Total no. of fruits}} \times 100$$

RESULTS AND DISCUSSION

Screening of five cultivars of mango against fruit flies under laboratory condition

The results on per cent fruit infestation of mango fruit flies on five varieties of mango are presented herewith in Table (1) and graphically illustrated in Fig. 1.

Table 1. Screening of some cultivars of mango against fruit flies.

Treatments	Treatment details	Per cent fruit infestation
T_1	Alphonso	30
T_2	Keshar	20
T_3	Pairi	0
T_4	Ratna	15
T_5	Sindhu	0

Results showed per cent fruit infestation of fruit fly was in the range of 0.00 to 30.00 per cent. Out of five varieties tested variety 'Pairi' and 'Sindhu' were completely free from fruit fly infestation. The highest per cent fruit infestation was recorded in Alphonso (30.00 %), followed by Keshar (20.00 %) and Ratna (15.00 %).

The results of present findings are in conformity with the results of Kumar *et al.* (1994). They studied four promising mango varieties *viz.*, Alphonso, Rajapuri, Kesar and Dashehari to the susceptibility to *Bactrocera correctus (B. correcta*). Cv. Alphonso suffered the most significant damage followed by Kesar and Dashehari.

Kumar and Bhatt (2002) studied the susceptibility of four important mango varieties (Alphonso, Kesar, Rajapuri, Dasheri). Fruit fly infestation and its maggot population were significantly higher in cultivar 'Alphonso' than in 'Kesar', 'Rajapuri', and 'Dasheri'.

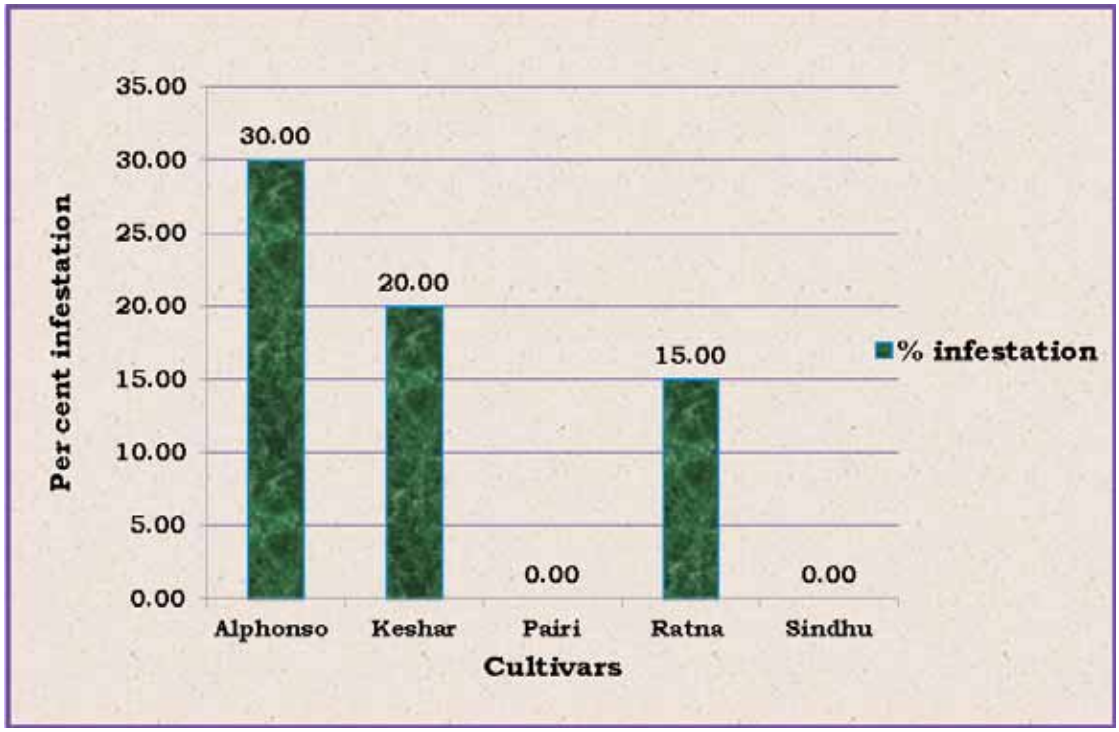

Fig. 1: Screening of some cultivars of Mango against fruit flies.

REFERENCES

Anonymous, 2014. NHB, Indian Horticulture Database published by National Horticulture Board, New Delhi. pp 95-96.

Anonymous, 2015a. Area, production and productivity of mango in India. *Indian Horticulture Database. pp 12-13.*

Anonymous, 2015b. The fruit king is back, almost. *Hindu business line. pp 17-18.*

Kumar, S. and Bhatt, R. I., 2002. Crop losses due to fruit fly*, Bactrocera correcta* Bezzi in some commercial varieties of mango. *Journal of Applied Zoological Research*, 13: 64-65.

Kumar, S., Patel, C. B., Bhatt, R. I., Padhiar, B. V. and Patel, B. G., 1994. Qualitative and quantitative losses on some commercial varieties of mango due to *Bactrocera correctus* Bezzi (Diptera: Tephritidae) in South Gujarat. *Pest Management and Economic Zoology*, 2:91-92.

White, I. M. and Harris, E., 1992. Fruit flies of economic significance: their identification and bionomics. CAB international Walling ford U. K. pp. 601.

Received: 02.01.2018 Accepted: 11.05.2018