

Identification of fruit fly pests of cucurbits in India and its management

Zeugodacus trilineatus



Face Thorax Lateral view and legs



Abdomen Wing

Dacus ciliatus (Loew)

Diagnosis: Small sized, reddish brown fly devoid of lateral and medial vittae on thorax, wing hyaline with a narrow costal band, all femora yellow without any prepepical markings, abdomen reddish-brown with fused tergites. Males do not respond to any of the parapheromones. It is widely distributed in India infesting cucurbitaceous crops.



Habitus lateral



Face Thorax Lateral view and legs



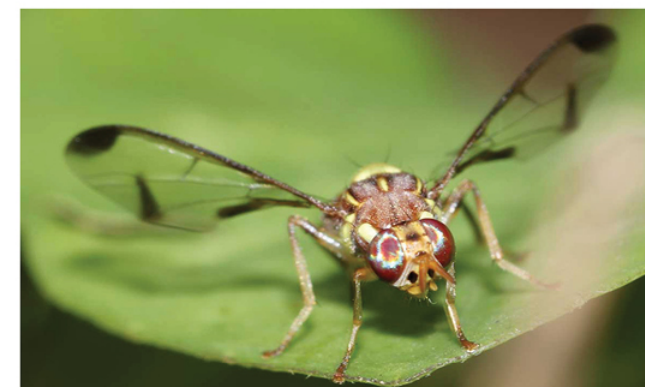
Abdomen Wing

Management

- Ply woods blocks impregnated with cuelure added with two to four drops of toxicant like malathion or spinosad is placed in containers called traps with suitable holes or vents for entry of fly. These are male annihilation (MA) traps, placed @ 16–20 traps/ acre. Traps can be tied to staked bamboo sticks/ hung below the *pandal* at 3–4 feet height from above the ground.

(Note: The toxicant has to be added to the plywood block using an ink filler by the farmer before placing in the MA trap. We advocate the use of ICAR-NBAIR licensed traps.)

- Bisexual attractant in yellow traps along with male traps is efficient in controlling these pests.
- Hanging yellow/orange plastic balls, (visual attractants) smeared with non-drying adhesive along the borders helps in early detection of fruit flies.
- Spraying 10% jaggery bait solutions, mixed with a toxicant like cypermethrin (@ 2ml/litre), on the lowest leaves, close to the ground, once a week starting from early fruit formation further controls the flies. This is for *Dacus ciliatus*, as it is not attracted to cuelure.
- At every harvest infested fruits have to be removed and deep-buried in soil.
- Sprays of azadirachtin (3000ppm) @ 3ml/l, after fruit set especially in organic cucurbits mitigates the infestation. In staggered or multiple picked crops, this can be repeated.
- It is important to keep the fields weed-free and clean (without rotting fruits).
- Avoiding flood irrigation and adopting drip mitigates infestation.



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Identification of fruit fly pests of cucurbits and its management

Introduction: Fruit flies pose a serious threat to vegetable cultivation particularly cucurbitaceous crops. In India several species of *Zeugodacus* Hendel and *Dacus* Fabricius are key pests of cucurbits like *Z. cucurbitae* and *Dacus ciliatus* Loew. Males of most of the species can be trapped in cuelure except *Z. diversus*. Here diagnosis of major species of infesting cucurbitaceous crops and its management practices are provided.

Zeugodacus cucurbitae (Coquillett)

Diagnosis: Reddish-brown coloured fly, medium sized (6–7 mm), scutum reddish-brown with yellow medial and lateral vittae, all femora with reddish brown preapical markings, wing hyaline with broad costal band expanded



Habitus female



Face Thorax Lateral view and legs



Abdomen Wing

into an apical spot, subapical band present. It is a cosmopolitan and highly polyphagous species attacking various vegetable crops. Recently, it was found infesting ripe tomatoes in various parts of Karnataka.. Males of this species are attracted to cuelure.

Zeugodacus tau (Walker)

Diagnosis: Medium sized fly (7–8 mm), thorax brown to black with broad lateral vittae and medial vittae, all femora with preapical markings. Wing hyaline with broad costal band expanding to an apical spot, devoid of subapical band. It is distributed across India infesting several species of cucurbits.



Habitus male



Face Thorax Lateral view and legs



Abdomen Wing

Zeugodacus diversus (Coquillett)

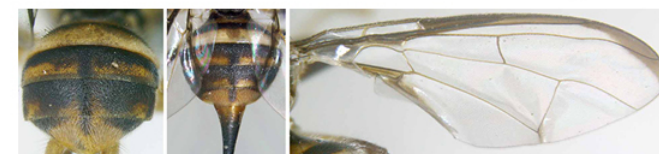
Diagnosis: Medium sized fly (5–6 mm), black thorax with yellow lateral and medial vittae, wing hyaline with narrow, continuous costal band, face fully yellow in males, but with transverse markings in females, all femora with preapical markings, male abdomen without pecten. It is widely distributed in India and infests flowers of cucurbits, males of this species respond to methyl eugenol.



Habitus female



Face Thorax Legs



Abdomen male & female Wing

Zeugodacus scutellaris (Bezzi)



Face Thorax Lateral view and legs



Abdomen Wing

Diagnosis: Medium sized (5–6 mm) fly, thorax black with narrow lateral and medial vittae, scutellum with an apical black spot, face with two separate black spots, costal band narrowed beyond vein R_{2+3} , abdomen black, all femora with preapical black markings. It is a major pests of cucurbits in north and northeast India. Males respond to cuelure

Zeugodacus trilineatus (Hardy)

Diagnosis: Small to medium sized fly (3.5-5 mm), black coloured, with yellow lateral and medial vittae, face yellow without any markings, all femora yellow. It is a pest of *Coccinia* in south India



Habitus male