



A farmer explaining to a fellow farmer fruit fly damage symptoms on mango fruit.

icipe – Working in Africa for Africa...

International Centre of Insect Physiology and Ecology (*icipe*) – was established in 1970 in direct response to the need for alternative and environmentally-friendly pest and vector management strategies. Headquartered in Nairobi, Kenya, *icipe* is mandated to conduct research and develop methods that are effective, selective, non-polluting, non-resistance inducing, and which are affordable to resource-limited rural and urban communities. *icipe*'s mandate further extends to the conservation and utilisation of the rich insect biodiversity found in Africa.

icipe contributes to sustainable food security in Africa through the development of integrated pest management systems for major agricultural and horticultural crops. Such strategies include biological control, and use of behaviour-modifying and arthropod-active botanicals. *icipe* puts emphasis on control approaches that have no detrimental impact on the environment. These options are always designed to fit the needs of the farmers, and are developed on-farm and with farmers' participation. In addition to fruit flies, other key areas of *icipe*'s research include pests of tomato, brassicas, beans, and staple food crops such as maize and sorghum.

African Fruit Fly Programme is an *icipe*-led fruit fly management programme for income generation, poverty alleviation, and improving food and nutritional security of growers across Africa.

COVER PHOTOS

Top: Mango fruit harvesting .

Bottom left: Packing of clean mango fruit harvest.

Bottom right: Native fruit fly, *Ceratitis cocyra*.

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Fruit fly Control by Field Sanitation

...for quality horticulture for Africa



Photos: icipe, Peter-Luethi_Biovisioan



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What is field sanitation?

Field sanitation is the process of collecting and destroying all infested fruits containing fruit fly eggs and maggots, on the ground and trees, to reduce fruit fly populations in the field.

Why is sanitation important?

Each infested fruit in the field can host a large number of fruit fly eggs that develop into maggots. If all the maggots develop into adult fruit flies, the population of fruit flies in the field can increase rapidly. A preventative control measure is to collect the infested fruits and destroy them immediately.



Left: *icipe* staff explaining to a farmer on how to use augmentorium for field sanitation.

Right: Fruit fly damaged mango fruits.



What sanitation method can I use?

There are different methods of field sanitation.

1. Augmentorium

The most recommended method is the use of the 'augmentorium'. This is a tent-like screen structure that is designed to retain fruit flies inside the tent. It has the advantage of allowing the natural enemies of fruit flies that may be in the fruit to escape via a yellow screen on the top and re-enter the field. The retained fruit flies and the rotten fruits could be used as components of compost. Augmentoriums can be easily constructed by growers.

2. Other sanitation measures

In the absence of the augmentorium the following measures are recommended:

(a) Bagging

Collected infested fruits can be destroyed by putting them in tied black plastic bags and exposing them to the heat of the sun for a few days until the fruits are rotten and all the maggots in the bags are dead.



Right: Black plastic bags containing mango fruits infested by fruit flies.



(b) Burying

Collected infested fruits can be destroyed by burying. Ensure that the fruits are buried at least 50 cm (about two feet) deep to prevent emerging adult flies from reaching the soil surface.

(c) Burning

Collected fruits can be destroyed by burning.

(d) Animal feed

Collected infested fruits can be fed to animals (pigs, cows, etc.). Do not leave fruits piled for more than one day.

Recommended fruit fly management methods

- Population monitoring
- Protein bait
- Male annihilation
- Field sanitation
- Biological control (biopesticides, parasitoids and weaver ants).

