

Let us reduce the impact of the Oriental fruit fly to ensure food security, protect the economy of the country and expand market opportunities.

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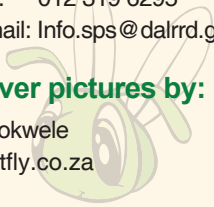
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Orchard and field sanitation as a method to control fruit flies such as Oriental fruit fly (*Bactrocera dorsalis*) in home gardens / farms



agriculture, land reform & rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA



The Oriental fruit fly is an exotic fruit fly with a wide range of hosts and it causes severe damage to its host plants.



Picture by Bob Copeland

The hosts include commercial fruit types such as mango, citrus, guava, papaya and bananas, wild fruit such as marula and wild figs, as well as “vegetables” such as bell peppers, pumpkins and tomatoes.

Life cycle

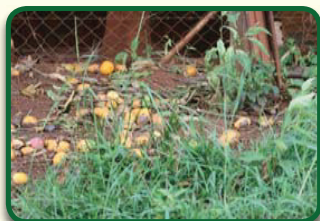
The life cycle of the Oriental fruit fly begins when a female fruit fly lays eggs into ripening fruit of a host plant (e.g. mango, citrus, etc.). The eggs hatch into larvae that feed inside the fruit, causing premature ripening and rotting of the fruit. As the fruit ripens and rots, it falls to the ground and the larvae crawl out to pupate in the soil. Adult fruit flies emerge from the soil, *Picture by J.H. Venter*



mate and start the life cycle again. The average life cycle is only 21 days from egg to adult. Therefore, when fruit is left on the ground it provides an opportunity for the larvae to burrow into the soil to mature into pupae, which develop into adult fruit flies.

What is sanitation?

Sanitation is the process of disposing of infested fruit (rotted fruit that has dropped to the ground) so that the fruit fly larvae will not be able to survive, pupate and develop into adult fruit flies. It is a cultural control method for various pests, including fruit flies, but it also forms part of good agricultural practices which would prevent pest and disease build-up, which, in turn, increases production volumes.



Poor sanitation: Importance of sanitation

Picture by J.H. Venter

Importance of sanitation

Sanitation helps to break the fruit fly reproduction cycle in back-yard gardens and in fruit and vegetable production areas. It also helps to decrease the available fruit fly hosts in an uncontrolled area, which serves as reservoirs from where near-by fruit production areas are continuously infested. Infested fruit might serve as the breeding ground for many pests and may favour the development of several diseases.

How to do sanitation

In order for sanitation to be cost-effective, it must be carried out regularly. This practice must be carried out at least once a week. Fruit left over on trees in orchards or fields after harvest as well as fruit found on the ground should be removed and properly disposed of. This includes fruit from orchards and fields which is not intended to be utilised because of other reasons such as frost damage and fruit left over after harvest.

There are many ways to destroy the collected fruit but to make sure it is done properly, the following techniques are recommended:
Solarisation (bagging)

- Fruit must be collected and placed into strong, undamaged refuse bags (double plastic bags if necessary) which are securely closed and sealed tightly to prevent larvae from escaping. Make sure there are no holes in the bag.



Picture by J. Mokwele

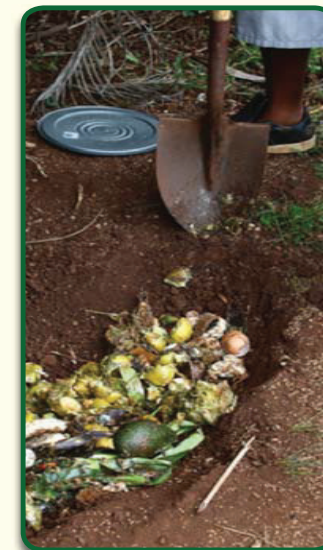
- Expose the refuse bag to the sun for at least three days; or seven days if temperatures are below 30 °C.
- After 3—7 days, all the fruit fly larvae in the bags will have died and the organic waste can be dumped in the field for green manure.
- Alternatively, you can collect fallen fruit in a bag and place it into a freezer for two days



Collection of fallen fruit for bagging (sanitation)
Picture by © M. K. Billah, icipe

Burying

- Collect the infested fruit and cover with a half metre of soil. All land users and land owners, including villagers and producers, are requested to ensure that all fruit that has dropped and has rotted will not be used or sold but will be collected, buried and covered with half a metre of soil.
- No buried fruit may be dug up for at least five weeks after being covered.



Rotten fruit can be put into a pit and covered with at least a 50cm layer of soil

Picture from: <http://eachoneteachonefarms.files.wordpress.com/2010/09/bokashiprocess7.jpg>

Crushing

- Using farm equipment, crushing or smashing of infested fruit can be used to destroy the larvae inside the fruit.
- The crushed fruit can be used to supplement animal feed.
- Avoid leaving fruit piled up on the ground for more than a day.