KARI/Mimea Factsheet No.13/2014

KARI E-mimea Plant Clinic

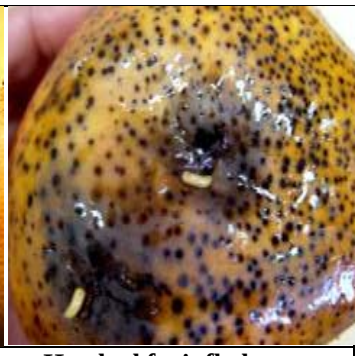
Crop: Mango

Pest: Mango Fruit fly *Ceratitis cosyra* (Walker)

Adult fruit fly

Fruit flies on a mango

Many fruit flies laying eggs on a ripe mango



Hatched fruit fly larva coming out of a rotten mango

Fruit fly laying its eggs on a mango

Hatched larvae barrowing into the mango

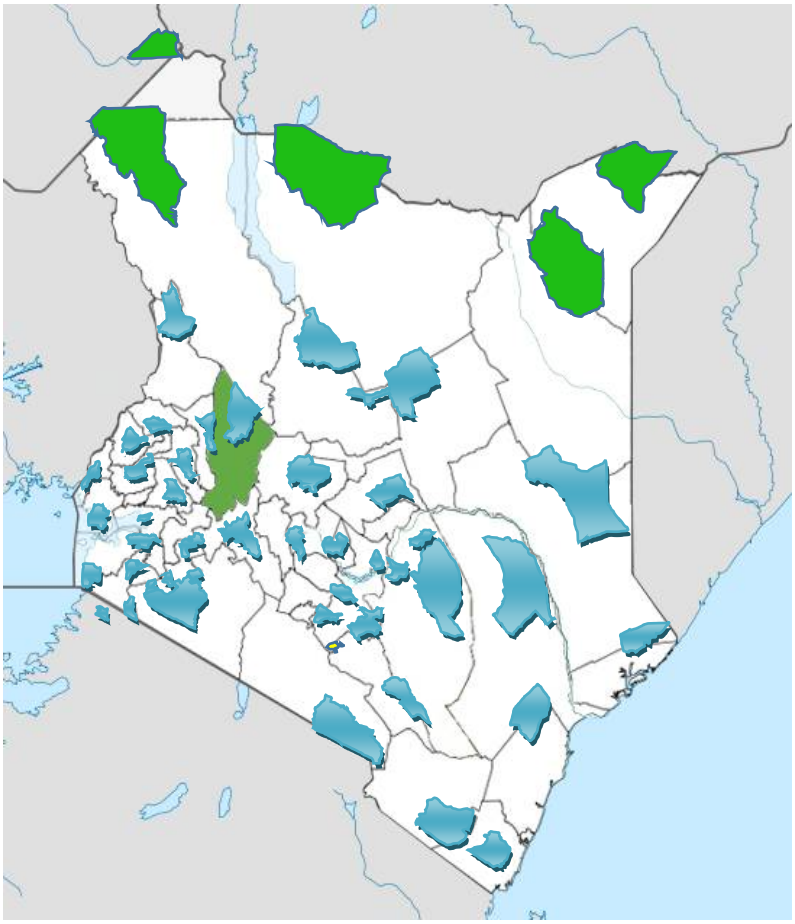
Fruit fly larvae feeding onto the mango flesh

Fruit fly pupae feeding onto the mango flesh

Photos from http//www.google.com

Pest Name	**Mango Fruit fly** *Ceratitis cosyra* (Walker)
Description	The mango fruit fly (FF) is also commonly known as the marula fruit fly, based on its common occurrence in these host plants. Marula is a native African fruit related to mango and sometimes known locally as wild plum. The fly is a serious pest in smallholder and commercial mango farms across sub-Saharan Africa, where it is more destructive than either the Mediterranean FF (Medfly; *Ceratitis capitata* (Wiedemann)) or the Natal FF

	(*Ceratitis rosa* Karsch). Body and wing color are yellowish; sides and posterior of thorax is prominently ringed with black spots, with three wide, black stripes separated by narrow yellow stripes. Wing length is 4–6 mm with a costal band and discal cross band joined. Adults are similar in size, coloration, and wing markings to Medfly.
Pest Category	Continuous
Symptoms	The damage starts when the female FF punctures the fruit with its long and sharp ovipositor. The fruit skin is breached, and bacteria enter and the fruit starts to decay. The larvae that hatch from the eggs feed on the decaying fruit tissue, and on the yeasts and bacteria that multiply in it. It is believed that some FF females carry bacteria with them that they inject into the fruit at oviposition so that the fruit may decay faster (making it more nutritious for the larvae). Fruits with FF larvae in them decay quickly. Infested fruits are generally unsaleable, and can certainly not be exported. Crop losses can be as high as 100%.
Conditions prevailing that contribute to success	Most fruit flies are facultative breeders that will lay eggs whenever their host fruits are available, and so may have many generations per year depending on host fruit availability.
Control Strategy	***Biological control:*** eggs and larvae are the main stage. Hymenopteran parasitoids are commonly employed; biological control alone does not provide a high degree of control and is not sustainable. ***Crop hygiene/sanitation:*** removal of fallen fruits/old crops; each fruit can produce up to 400 FF adults. Removal and destruction is very important for FF Integrated Pest Management (IPM); collected fruits should be buried 6 inches deep in the soil; some part of China achieved good success in reducing population of FF using sanitation. ***Bagging/ netting***: young fruits should be completely bagged; bags must not have any holes to prevent oviposition. Initially labor intensive; increases cosmetic value of fruits; the age of bagging varies for different fruits. ***Insecticides:*** not recommended in IPM as there are other robust tools available; however in citrus fruits FF can be suppressed by a single spray; limited use of pesticides in protein baits. ***Bait sprays***: adult FF needs protein for their reproductive functions; beer waste based protein baits or other mixed with insecticide have been successfully used in Vietnam for the past 7-8 years. ***Early harvesting:*** due to color preferences for oviposition, green fruits at their early stage are not host to FF. In such cases this method could be employed. ***Male annihilation***: using lures such as Methyl Euginol (ME) and cue- lures. A large number of traps are needed; traps are excellent tools for monitoring fly population.
Mode of Spread	**Flying:** The pest can infest many farms by flying to new farms. **Fruits:** The movement of mango fruits in different parts of the country could be the number one cause for the pest spread in Kenya. The FF may move as

	eggs or caterpillar.
Mandate Centres	All KARI Centres in the mango growing areas.
Reference Links	**(http://www.plantwise.org/KnowledgeBank/CountryHome.aspx)**
Geographic Coverage The pest has been reported in the sky blue highlighted counties but this will expand after a full country survey is conducted. The border counties are also likely to have the pest.	The species is widespread in sub-Saharan Africa, occurring in at least 22 countries, including Ivory Coast, Kenya, Madagascar, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. In Kenya, the mango FF is found in all the major mango growing areas of Coast, Eastern, Central, Rift Valley, Western, Nyanza and parts of North Eastern regions (see map below which shows where it has been cited). 
Expert Name	Finyange Pole, Dr. Muo Kasina and Dr. Lusike Wasilwa
Expert Contact Details	Kasina.j@gmail.com lusike.wasilwa@kari.org Finyange.Pole@kari.org
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