

FRUIT FLIES THREATS AND FIGHTING PERSPECTIVES IN KENYA

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Abstract

The impact of export restriction continues to adversely affect fruit growers in Kenya since the first case of *Bactrocera Invadens* was reported in the south coast of Kenya in 2003. It is estimated that export restriction to South Africa alone costs Kenya's fruit industry up to \$ 6 million annually. With the list of countries imposing export restriction being on the increase, national fruit fly initiatives to mitigate the restriction are receiving more attention. Efforts to address the fruit fly problem in Kenya have concentrated on surveillance programs, capacity building on pest identification and management, and commercialization of pesticides that have been reported to be effective in controlling the pest.

1-0. Present status of the pest

Based on activities at the International Centre of Insect Physiology and Ecology (ICIPE) and in most cases done jointly with the Kenya Plant Health Inspectorate Services (KEPHIS), Kenya Agricultural Research Institute (KARI), and Ministry of Agriculture (MoA), direct damage to mango can exceed 80%. This depends on the locale, cultivar, and season. Indirect damage is related to the restrictions in export markets. Reports indicate that export restrictions has been noted for several host commodities in the US, Mauritius, Seychelles, and S. Africa. In 2007, Kenya lost unrealized export of avocados to S. Africa valued at \$ 2 million. This figure could have triple over the following years. Comparatively, *B. invadens* is more prevalent in the coastal region with preference to mangoes.

1-1. National Plant Protection Organization (NPPO)

The Kenya Plant Health Inspectorate Services (KEPHIS) is the National Plant Protection Organization of Kenya. By the virtue of its mandate, KEPHIS has been in the fore front in the fight against fruit flies. KEPHIS has initiated surveillance programs which envisage dealing with the fruit fly and building it fruit fly capacity. In addition, KEPHIS is an important member of fruit fly fighting initiatives such as the National Fruit Fly Team (NFFT) and the National Fruit Fly Task Force (FFT).

1-2. National Fruit Fly population monitoring protocols

Kenya has a national fruit fly monitoring protocols that are reviewed continuously. Some of the protocols are outputs of the FAO *Bactrocera invadens* TCP. There is a national database of consolidated trapping results manned by KEPHIS.

1-3. University/Research Institute dedicated to fruit fly

The International Centre of Insect Physiology and Ecology (ICIPE) in Nairobi collaborate with national universities in its capacity building programs.

1-4. Local taxonomy expertise

Kenya has a number of fruit fly taxonomists. Taxonomic trainings have been repeatedly offered to the National Fruit Fly Team in Kenya with continuous technical backstopping from ICIPE and experts from other countries.

2-0. Present status of fruit fly fighting management

In the recent past, a task force comprising of the private (growers association and large scale individual fruit growers) and public sectors (KEPHIS, KARI, MoA, & the Pest Control Product Board) was formed in an effort to address the fruit fly problem. The function of the task force is partly to advice on policy direction that the country should embrace in the war against the fruit fly. The fruit fly task force has managed to raise the level of awareness about dangers of the fruit fly particularly among the top government officials. More important, the task force managed to source some local funds towards addressing the fruit fly problem. Like most *ad hoc* committees, the task force meetings are not regular but are held on demand.

2-1. Sponsored fruit fly activities

The ICIPE-led BMZ, IAEA, IFAD etc projects conduct regular monitoring (since 1999 to date) in strategic project benchmark sites (Nguruman, Runyenjes, Meru and Malindi) for both invasive and native fruit fly species. This are carried out for detection of alien invasive species and to guide implementation of management methods. *Bactrocera invadens* was picked up through one of such monitoring traps in the south coast of Kenya in 2003. Similarly, *Bactrocera latifrons* was picked up in Taveta during one of such monitoring. Different attractant types (NuLure, DuduLure, Methyl Eugenol, and Latilure) either in Lynfield trap or Multilure trap are deployed. Through such monitoring exercise, the growers in the project benchmark sites are able to know the composition of fruit flies in the system and make informed decision as to when to start management techniques based on bait sprays, soil application of *Metarhizium anisopliae*, deployment of augmentorium, parasitoid releases etc. The monitoring data are also a useful basis for quantifying the impact of the parasitoid (*Fopius arisanus*) that is being test-released jointly with KEPHIS at Nguruman in addition to determination of the socio-economic impact of the technologies that will be widely deployed in an envisaged future large-scale implementation phase of the project.

In addition, KARI in collaboration with Osho Agrochemical Ltd and PCPB has tested newly introduced pesticides against major mango and avocado pests including fruit flies (Neem based Nimbecidine and a Pyrethroid, Cyclone) for registration and use by fruit growers. KARI has also collaborated with ICIPE in

undertaking farmers' training at Abothuguchi Division, Meru on management strategies and IPM options for mango.

Plans are in advanced stage to roll out a national fruit fly management program in avocado sponsored by a local Horticultural Research Fund (HRF) that is managed by the public sector.

3-0. Strategy at regional level

The National Plant Protection Organization (NPPO) of Kenya - KEPHIS is part of the African Fruit Fly Program (AFFP) of ICIPE which is a network of several NPPOs and NARES across Africa. The regional network discusses fruit fly fighting methodologies, protocols, and related aspects as outlined in the previous paragraph. Attempts for regional coordination were previous through the African Fruit Fly Initiative (AFFI) and currently through the AFFP.

The NPPOs can play an instrumental role in coordinating regional fruit fly activities. However, this should be done in collaboration with key fruit fly research institutions such as ICIPE. The industry, on the other hand may collaborate in the fruit fly activities but not necessarily being in charge of the coordination. Equally important, the fruit fly activities should not be coordinated by regional political organization such as the East African Community, SADC or COMESA. The role of these organizations should be limited to providing political leadership to regional program(s) and in keeping the fruit fly problem high on the priority list of developmental issues. In addition, the organizations can play a significant role of lobbying for funding while leaving the technical aspects of any regional initiatives to NPPOs, SRO (e.g. ASARECA) and technical international agencies in the region.