

New technology to help farmers counter the fruit fly menace

In Kenya, a solution to counter the menace of fruit flies rampant among small holder farmers is now available. Dubbed the Fruit Fly Mania, this protein bait is made from brewer's yeast was developed through the International Centre of Insect Physiology and Ecology (ICIPE) research, and is being commercially produced for farmers, by Kenya Biologics.

According to ICIPE, in Africa fruit flies annually cause losses of fruits and vegetables estimated at over USD \$2 billion through direct damage to fruits and loss of export opportunities. Henry Ngari a farmer from Embu in Eastern Kenya since 1987 knows all too well the damage fruit flies have affected his mango production over the years.

In his 4.5 acre orchard with 400 trees, in a season he lost about 30 to 40 percent of mangoes to fruit flies. But since Ngari began using fruit fly mania, and ensuring orchard hygiene, losses have reduced to less than 10 percent. As a result, every mango season Ngari can make on average Ksh300, 000 about USD \$2900, but when fruit flies were rampant, he made less than Ksh200, 000 about USD \$1933. "This technology has been a success," said Ngari.

When using it, the fruit Fly mania protein bait is mixed with toxicants like spinosad, pyrethroid, or deltamethrin, at the orchard. Then its spot sprayed with a knapsack to one square metre of canopy where there are no fruits to avoid contaminating them. In successive spot sprays, the bait can be applied to another spot of the canopy, on the opposite side of the tree.

According to ICIPE's Dr Sunday Ekesi, farmers can begin to apply fruit fly mania when mangoes are the size of a golf ball. But before applying it, farmers are advised to first establish fruit flies presence in the orchard by applying small amounts of fruit fly mania on a water bottle trap, to attract them. If fruit flies trapped keep increasing every week that indicates their presence in the orchard. That is when farmers can spot spray the fruit fly mania protein bait laced with an intoxicant to the fruit canopy.

The bait laced with an intoxicant attracts female fruit flies within the orchard, and when they feed on it, they die. That interrupts their breeding cycle and population in the orchards. Fruit fly mania application can continue on weekly or bi-weekly basis if fruit flies are still present until all fruits are harvested.

ICIFE studies from pilot trials shows fruit fly mania reduced maggot infestation in fruits from over 80 percent to 5 to 9 percent of total fruit production. “If you consider that growers lose up to 80 percent of their production without any control, this is a significant success rate,” said Dr Ekesi.

Fruit fly mania success is complemented by farmers ensuring orchard sanitation, which can guarantee a 66 percent income gain according to ICIFE. Besides mangoes, fruit fly mania can be used in orchards with mango, citrus, avocados, butternut, and cucumber, and also vegetable gardens.

Fruit fly mania is being targeted primarily at 229,000 households who depend on mangoes as a source of livelihoods in Kenya. A facility to manufacture fruit fly mania has been put up in Kenya at a cost of USD \$250,000 by Kenya Biologics. Located in the mango growing Muranga County, in Central Kenya it’s the first of its kind in Sub Saharan Africa. Daily, the facility can produce 2,000 litres of fruit fly mania, enough to meet the demand of all Kenyan households that depend on mangoes for livelihood.

In a season an acre of an orchard requires one 400ml bottle of fruit fly mania which costs Ksh250 about USD \$2.42. At that cost this bait costs 70 percent less than commercially available fruit fly protein baits in market.

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