GUN 3: BAIT SPRAYING

A fruit bait mixed with an insecticide is sprayed on the tree leaves/trunks at weekly intervals. A locally made bait is being developed from brewers spent yeast and can be accessed for testing. One can also use imported baits (eg GF120, Spinosad, GFFB). The advantage of bait sprays is that a minimal amount of pesticide is sprayed on a small leaf surface as opposed to conventional cover sprays where the whole plant is sprayed (Plate 4).

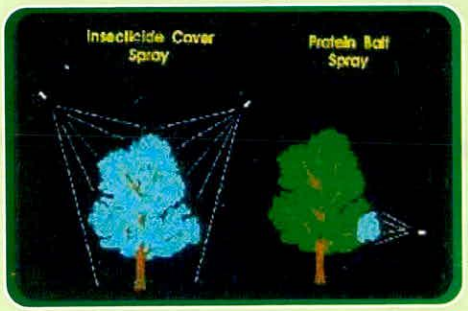

Plate 4: Convectional insecticide Spray | Bait Spray

GUN 4: INSECTICIDE SPRAYING

Spray with environmentally friendly pesticides. For safety, farmers must wear Personal Protective Equipment when applying pesticides. Read and follow pesticide application instructions such as rate, frequency, time of application and equipment to be used for effective control.

OTHER OPTIONS:

(i) Bagging of undamaged fruits on the tree

(ii) Early harvest: When fruit is mature (colour break) but not ripened on the tree

(iii) Plough or wreck the top soil (5-10cm deep) at the tree basin at frequent intervals to expose FF pupae to sun, parasites and predators eg birds.

(iv) Parasitoids: *Fopius arisanus:* first release made in Nakaseke Dec 2016.

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NATIONAL AGRICULTURAL RESEARCH LABORATORIES – KAWANDA

INTEGRATED FRUIT FLY AREA-WIDE MANAGEMENT IN UGANDA









INTRODUCTION

The orient fruit fly, Bactrocera dorsalis Hendel is the most destructive pest in mango, Mangifera indica L in Uganda. Loss attributed to fruit fly infestation range from 30 to 80% and can reach 100% if no interventions are put in place. Integrated fruit fly management is being promoted in an area-wide approach to increase management effectiveness and efficiency.

LIFE CYCLE

Fruit fly larvae (maggots) cause fruit damage. Females puncture the fruits leaving scars and holes on the fruit surface. The eggs hatch and larva tunnel through the fruit. Larval feeding causes premature rippening & fruit droping. The larvae emerge from the fruits and burrow in the ground. Pupation occur in the soil beneath the host plant and in about 10 days it emerges into adults and cycle begins again. The whole life cycle will take between 28-35 days depending on the environmental conditions (Plate 1 adopted from CTA). NARL is promoting integrated options that will disrupt the life cycle, attack adult male and female flies. The options are commonly called 'mango fruit fly 'GUNs' in the mango farming community.

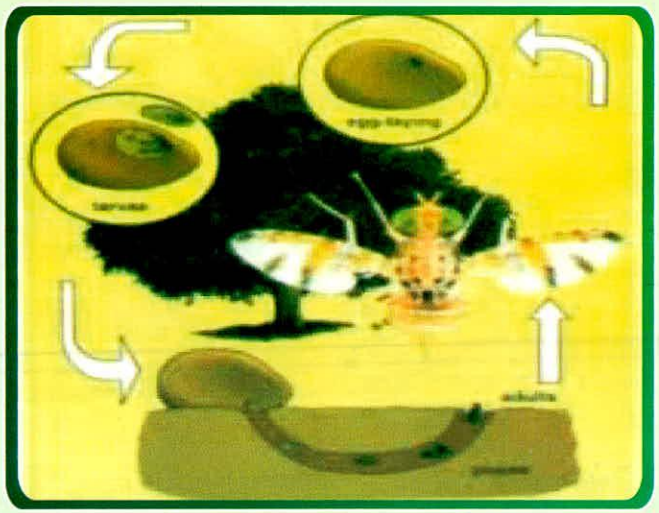

Plate 1. Fruit Fly Life Cycle

GUN 1: ORCHARD SANITATION

Orchard sanitation (OS) is the first line of defence. OS control fruit flies by disrupting the life cycle and discourage fruit fly breeding areas. Destroy all infected and fallen fruits by either burying them (2-3ft deep), put in plastic bags and expose them to the sun to suffocate immature fruit flies (Plate 2). You can also give fallen fruits to animals or chop and ferment damaged fruits and mix with local herbs to make a bio-fertilizer.



Plate 2. Fallen fruits in the hole to be buried or fruits tightly tied in plastic bags, exposed to sun to suffocate immature flies.

GUN 2: MALE ANNIHALATION TECHNIQUE (MAT): MALE FLY TRAPPING

Install four-six (4-6) MAT block traps per acre. Traps are made from used plastic containers, bottles or small yellow jerrycans (Plate 3). Put holes at the bottom of the trap to allow rain water to escape. Use a string to suspend the trap containg Mat block impregnated with and insecticide and hung the trap in the tree (Plate 3).



Plate 3. Locally made traps with Mat block and trapped male flies