

SAPOTA PEST FACT SHEET 6

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'Nauroji-Stonehouse' Plywood based Fruit fly Trap-Effective and Low Cost Technology for Fruit fly Management



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- Fruit fly, *Bactrocera* spp. is a polyphagous dipteran insect pest. It is a key pest from consumption and export point of fruit quality all over India.
- Among species diversity, *B. dorsalis* is the most pre-dominant species and mostly preferred hosts are fruit crops (Fig. A1). Other two species viz., *B. zonata* and *B. correcta* also reported in many fruit orchards.
- Another species, *B. cucurbitae* found damaging to vegetable crops (Fig. A2).
- The wide host diversity in cropping system, fruit fly shift from one to another under favorable ecological factors make difficult to manage through chemical means.
- In this view, NAU low cost technology of methyl eugenol / cuelure impregnated wooden plywood block based fruit fly trap ['Nauroji-Stonehouse' fruit fly trap / Mineral water bottle trap] is highly successful and feasible in mass trapping of fruit flies in large scale. This trapping method attracts male adults and manages the pest by causing mating disruption which is also known as Male Annihilation Technique (MAT).
- Technology Modernizer: Dr. Z. P. Patel, Hon'ble Vice-Chancellor, NAU, Navsari during his research tenure at FRS, NAU, Gandevi.



Fig. A1



Fig. A2

Method of Plywood Block Preparation

- ❖ Select furniture plywood of 10 mm thickness size. Also, useless and old plywood material can be used in block preparation.
- ❖ Cut the plywood into 5 x 5 cm (2 inch) size blocks (Fig. A3).
- ❖ Follow 6:4:1 ratio for making solution and required quantity of fruit fly plywood blocks can be prepared. Usually, single plywood block can suck 14-15 ml solution of chemical. For 100 blocks, add 750 ml ethyl alcohol/methanol + 500 ml methyl eugenol/cuelure + 125 ml knock-down contact insecticides (Malathion/decamethrin/deltamethrin) in a steel or iron tray. Mix all these chemical thoroughly.
- ❖ Cover the tray with polythene or other material. Keep these block as such in solution for 24 to 48 hrs.
- ❖ After removing the blocks from tray, fix the small iron pin along with small iron or nylon thread in centre of plywood block (Fig. A4).
- ❖ Keep fruit fly blocks in silver coloured polythene bag and seal air tight.
- ❖ Chemical mixtures are to be prepared in well ventilated room wearing gloves and using separate containers and measuring jars.



Fig. A3



Fig. A4

Doses and Uses:

- No. of lures per ha: 10 (4 traps/acre).
- Timing: From fruit-set to harvest.
- Replacement: Once in 3 months.
- Fruit fly blocks can remain effective for 6 months inside the sealed polythene bag.
- **Fruit crops:** Mango, Guava, Papaya, Citrus & all fruit crops.
- **Vegetable crops:** Cucumber, Gherkin, Melons, Pumpkin, Bitter gourd, Little gourd, Snake gourd, Ridge gourd, Bottle gourd & other Cucurbitaceous crops.
- **Cost:** ME block- Rs. 35/-; ME block + Trap - Rs. 55/- (For 2022-23).
Cuelure block- Rs. 55/-; ME block + Trap - Rs. 75/- (For 2022-23).

Method of Plastic Trap Preparation

- ❑ Insert hand inside the plastic trap from top towards bottom and press equally to all sides. Close the lower portion of the trap (Fig. B1).
- ❑ Remove ready plywood block from polythene bag and insert small iron or nylon thread inside the small hole made on top flap of trap (Fig. B2).
- ❑ Press four side of trap and make triangle shape on top of the trap (Fig. B3).
- ❑ Elongate the thread from the top hole of trap and make a knot near flap hole to fix the block inside the trap in middle portion. This required to avoid slipping of block (Fig. B4).
- ❑ Close the top triangular part of trap by flap lock and hang out on tree branch about 5-6 feet above ground level for monitoring or mass trapping of fruit fly (Fig. B5).



Fig. B1

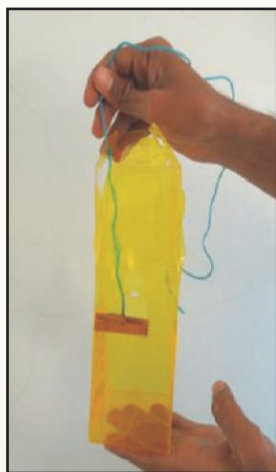


Fig. B2



Fig. B3



Fig. B4



Fig. B5

Method of Plastic Bottle Trap Preparation

- ❑ Use 1 lit water capacity plastic water bottle for trap preparation (Fig. C1).
- ❑ Make 2-2.5 cm (1 inch) size hole on four side of bottle from top 10-12 cm (3 inch) below cap. Also, cut 3-4 cm (1.5 inch) size bottom portion of bottle and keep aside (Fig. C2).
- ❑ Remove bottle cap and make small hole on it so that small iron or plastic thread can be inserted through it (Fig. C3).
- ❑ Remove ready plywood block from polythene bag and insert the block inside bottle from open bottom portion. Elongate the small iron or nylon thread towards top and insert in small hole made on bottle cap. Make a knot near hole to fix the block inside the trap in middle portion. This required to avoid slipping of block (Fig. C4).
- ❑ Fix the bottom portion of bottle with inverted 3-4 cm size already cut portion (Fig. C5).
- ❑ Hang out the trap on tree branch about 5-6 feet above ground level for monitoring or mass trapping of fruit fly (Fig. C6).



Fig. C1



Fig. C2



Fig. C3



Fig. C4



Fig. C5



Fig. C6

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