

Study of traps used in insect control

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Trapping of insects by various types of traps is useful in the study of insect migration, population dynamics, beginning of incidence of pest etc. Different types of traps are available for survey and monitoring of various insect pests eg. Light trap, Pheromone trap, Sticky trap, Fruit fly trap, Chiku bud borer (Black Tulsii) trap, Pit fall trap, Probe trap, Fishmeal trap, Water trap, Flight interception trap etc.

Different types of traps:

Light trap : Light traps are mainly used for attracting moths and other night flying insects which are attracted towards the light. The insects are actively caught or encouraged to enter a trap.

The simplest light trap consists of a light on a cable hanging outside the building. Any bright white or bluish light is suitable although mercury bulb is the best. The effectiveness of the trap can be enhanced if the lamp is positioned beside a white wall or has a white sheet hung next to it. If electricity supply is not available then gas lamp or paraffin vapour can be used. Light traps should not be operated during rain because water drops falling on the hot bulb will crack it if it is not protected from rain water.

Pheromone trap : Pheromone traps are useful especially for those insects which are undertaking flight before courtship sexual behavior. Synthesized sex pheromone is impregnated in vial or septa and is kept in the trap which attracts the males. Specific sex lure is required for different insect pests and periodically it has to be replaced by another same type of pheromone lure. Due to reduction in male moths population in the field, females lay unfertilized eggs resulting in suppression of pest population in subsequent generation.



Fig. 1 : Light trap



Fig. 2 : Pheromone trap

Sticky trap : A suitable persistent adhesive material like grease, tar oil or castor oil can be smeared on strip of paper, PVC sheet or on a hard card paper. These treated materials are being supported with cylindrical tin or hard

board and installed in the field or on the border of the field with the help of wooden or iron stick. Wind velocity and temperature influences the efficiency of the trap. It is necessary to clean the trap frequently otherwise the efficiency of trap may go down.



Fig. 3 : Sticky trap

Preparation of sticky trap:

- Prepare a paper/ PVC strip and envelop it on the outer side of the 5 lit. empty tin.
- Smear a thin layer of castor oil/ grease or with other adhesive materials.
- Nail it at top end of a 6-7' long bamboo.

Installation of trap:

- Install the trap in the field of cotton/ okra/ guard at 0.5 to 0.75m above the crop canopy in the field or on the border of the field.
- Collect and observed the insects which are adhered on the trap frequently.
- Clean up the plastic sheet every 2-3 days and if required smeared again by the same adhesive materials.
- In case of yellow sticky trap preparation, select a feasible sized iron or hard board sheet (2x3 feet) and paint it with yellow colour. Yellow sticky trap is more effective for the monitoring of whitefly/ aphid population.

Fruit fly trap : Methyl eugenol trap is useful for trapping the male fruit fly. *Bactrocera zonata*, *B. dorsalis*, *B. correctus* and *B. diversa*. It should be installed in orchard @ 5 traps/ha at 1.5m height from the ground level. Periodically trapped flies should be collected and recharge the methyl eugenol soaked foam every 7-10 days interval. Such tool is very effective to manage the infestation of to fruit fly in orchards if installed on a mass campaign base. One or two trap in a orchard is useful for monitoring purpose.



Fig. 4 : Fruit fly trap

Chiku bud borer trap (Black Tulsi trap) : Same type of trap/ container is used as per fruit fly trap for preparing black Tulsi trap. To prepare an extract of black Tulsi, take 500 gm of leaves of black Tulsi (*Ocimum sanctum*) in 1 litre of water and after grinding thoroughly by the electrical grinder, filter it with muslin cloth. After adding 2ml DDVP, soak the piece of sponge or cotton swab in the solution and keep it in the trap. Such trap should be installed in the chiku orchard @ 1 trap/ 20 trees at 3.0 to 4.5 m above ground level on the branch remaining outside the tree canopy.

Probe trap : Probe trap is used to detect pests within the bulk of grain storage. Probe trap is more effective as compared to detect pests with taking grain samples. The trap should be placed in a pair into the grain at approximately 4-6 meters apart. One trap placed so that the holes are level with the surface of the grain and one buried up to 10cm below the grain surface.

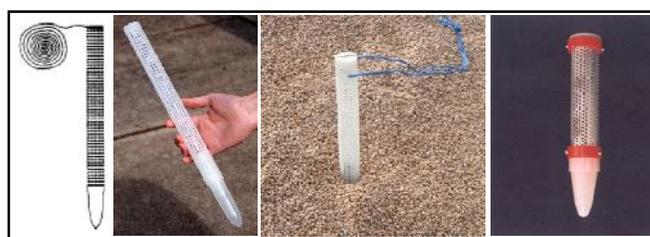


Fig. 5 : Probe trap

Fishmeal trap : Moistened fishmeal is known to attract shoot flies attacking millet crops. It is made of plastic jar with perforations of 4 mm diameter. The base of the jar connected to a collection jar by a funnel. Moistened fishmeal is kept in a small plastic container fixed to the lid of the plastic jar. The lid also has a smaller container for keeping cotton soaked with insecticide (DDVP) to kill the attracted flies. The killed flies are collected in the collection jars.

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