

Monitoring:

Based on the number of male insects trapped, the incidence of insects of a particular species in the agricultural fields can be determined and proper control measures can be put in place. Pheromone traps are very sensitive and they are effective in attracting insects present in very low densities. Thus farmers can take remedial measures before the problem becomes serious. Pheromone traps can locate areas that need spot treatment and this reduces the dependence on chemicals to control pests.

Limitations:

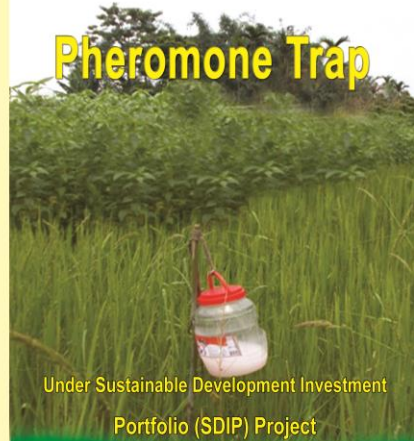
These traps only attract adult male insects of the target species. Hence they are limited to the adult male insects of a species, when it is often juveniles in many species that are pests.



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Pheromone Trap



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Insects release certain chemicals called pheromones as a means of communication with other members of the same species. Their social behaviour like mating and foraging for food is directed by their olfactory senses, stimulated by these pheromones.

Sex pheromones are secreted by female insects of certain species like moths and beetles, to sexually attract the male insects for procreation. Sex pheromones are species specific and insects are sensitive to a small quantity of the pheromone.

Pheromones can be produced artificially in the laboratory. They are placed in a delivery device or lure. These devices can be in the form of a rubber septa, tape, laminated plastic etc. Pheromones can be enclosed in a delta trap, water-pan trap or funnel trap.



Funnel trap

Sex pheromone trap:

A sex pheromone impregnated lure, which is artificially prepared in the lab, is placed in special containers. The male insects are attracted towards these containers and they get trapped and killed. Such a container which uses sex pheromones to trap and kill male insects is called a sex pheromone trap. It can be used as an eco-friendly pest control measure.

Method of making a sex pheromone trap:

- Sex pheromone traps are easy to implement and relatively inexpensive.
- A cylindrical or round shaped container of capacity 3 litres and about 9 inches in length is taken to act as a trap.
- A triangular opening of about 5-6 inches is made in the middle portion of the container.
- About 1.5-2 inches of the container is filled with soapy water.
- A small hole is made in the middle of the container lid and the tube containing the sex pheromone is suspended into

the container through it, using a string or wire. The tube should be just 1.5-2 inches above the soapy water level in the container.

- The container should be kept closed at all times. Care should be taken to see that the soapy water does not dry up.
- The traps are usually placed about 30 - 32 feet apart in the vegetable garden. The trap is supported up from the ground by two bamboo or wooden stakes.
- Different sex pheromones are used to trap different species of insects. The containers or traps should bear proper labels if more than one kind of lure is used. Also, only one kind of lure should be used per trap.
- The pheromones should be replaced after a definite period of time as different pheromones last for different lengths of time.

The male insects, attracted by the sex pheromones, enter the plastic container in search of the female insect. In the process, they fall into the soapy water and drown.



Delta trap



Water-pan trap



Pheromone traps can be used for both mass trapping and monitoring.

Mass trapping:

The male insects are lured towards the trap and get killed. As a consequence, the females of the species, present in the vegetable fields, lay infertile eggs. Hence the population of the target species is reduced.