



Farmer FIRST Programme

फार्मर फर्स्ट प्रोग्राम

(Agricultural Extension Division)

(कृषि प्रसार विभाग)

Indian Council of Agricultural Research

भारतीय कृषि अनुसंधान परिषद

PEST MANAGEMENT TRAPS

Time of operation

Between 7 pm to 11 pm; to be installed at the inception of crops

Recommendation

- * One light trap with 220 W mercury lamp/1 ha. Number of traps may be changed according to the light sources.

Merits

- * Durable
- * Efficient monitoring tool to time the plant protection measures
- * Both sexes are attracted
- * No residue to plant parts
- * No contamination to environment, natural resources etc.

Demerits

- * Want of power source under rainfed/dryland condition
- * Natural enemies are attracted and killed
- * High infestation in crops around the light trap
- * Insects which are able to fly only can be attracted

Cost

Mercury light trap: Rs. 7000 to 10000/unit

Battery operated light trap: Rs. 500 to 1000/unit



Light trap



Solar light trap



Rice yellow stem borer



Okra fruit borer



Brinjal fruit borer



Fruit borer



Tobacco cutworm



Tuta lure



Sweet potato weevil



Tomato pinworm

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Monitoring of insect pest activities in Agricultural eco-systems is one of the prerequisites of the farmers to predict the pests which will be likely to occur in their field crops. Traps are helpful for the farmers to take decision on methods/or time of plant protection interventions including pre or post infestation measures to be executed. Traps are 'Farmers Eco-friendly Tools' to monitor and mass-trapping of insect pests which envisages the ways to maintain the infestation below economic threshold level, besides safeguarding the environment, natural resources and not-target organisms. Some of such kind of traps are

1. Sex pheromone trap
2. Light trap

Sex Pheromone Trap

It is an intra-specific semiochemicals called 'Sex Pheromone' which is being produced by virgin female adults to attract male adults of the same species for mating. The chemicals produced by the female are synthesized and impregnated in a rubber septa, which are available in the name of 'Lure'. Separate lure is to be used for each species of insect pest. The lure can be used under field condition after mounting in a trap, designed exclusively for this purpose.

Mode of action

Sex pheromone trap attracts the male adults of a particular species as if the female adult is present for mating. Such attracted male adults are trapped and killed which disturbs the mating, fertilization, formation and laying of viable eggs by virgin female, for want of male adults. It is used as a

monitoring and mass-trapping tool when it is installed at few and large numbers, respectively.

Method and time of installation

Traps mounted with respective lures are to be installed one at each corner and at centre of the field and also 10 to 15 metres away from the bund of the field. Traps are to be installed 10 to 15 days after transplanting in case of paddy and after sowing/dibbling of seeds for other crops. The male adults caught in the traps should be collected daily and killed. Lure is to be changed once in a fortnight for 5 to 6 times based on the number of broods of the pests and duration of the crops.

Cost

Rs. 15/lure; Rs. 25 to 30/trap

Merits

- * Durable
- * Species specific
- * No residue to plant parts
- * No contamination to environment, natural resources *etc*
- * Safe to natural enemies

Demerits

- * Separate lure to be used for each species of insect
- * Natural enemies of particular species of insect may be attracted and killed

Recommendation

- * 5 traps/ac for monitoring; 12 traps/ac for mass-trapping

Crop	Insect pests	Name of lure
Paddy	Yellow stem-borer	Scirpo lure
Vegetable & flower crops, oilseeds, pulses, chickpea, soybean, cotton, sunflower,	Tobacco cut worm Gram pod borer	Spodo lure Heli lure
Brinjal	Shoot and fruit borer	Sex pheromone lure
Okra	Shoot and fruit borer	Sex pheromone lure
Sweet potato	Weevil	Aggregation pheromone lure
Tomato	Leaf miner and fruit borer	Sex pheromone lure

Light Trap

Light trap technology is developed based on the behaviour of attraction of insects to light sources. Light source of trap attracts both sexes of flying insects. The light traps are effective only during night hours and the insects caught should be collected and killed daily early morning of next day or they can be killed by keeping cotton swab with any insecticides. It is useful to monitor the activities of insect pests and to time the plant protection measures. Battery operated LED light sources can be used in rainfed/dryland condition where power source is not practically possible.

Mode of action

Various light sources provide visual cue to the insects and attract towards light by stimulating the compound and simple eyes of the insects.