

## LIGHT TRAP FOR USE IN IPM

ICAR-NCIPM has developed an improved insect light trap for mass trapping of selective phototrophic macro-lepidopteran insect-pests like hairy caterpillars, boll worms, pod borer, semilooper, tobacco caterpillar and macrocoleopteran like white grubs. Improved light traps can be used to trap all these major pests that are prevalent in almost all agro-ecological regions of country on majority of crops including field and commercial crops, pulses, oilseeds, cereals and vegetable crops.



It comprises of a light source as an attractant and a funnel to direct lured insects into the insect collecting chamber. Funnel supports three baffles which are joined at the top. A hook has been provided at the top portion to install the light trap in the crop fields. The funnel accommodates an insect collecting chamber. The chamber contains a cap in the bottom required for opening and closing the chamber. The funnel at the rear end also accommodates an outer protective covering. Inside the protective covering there are sub light sources.



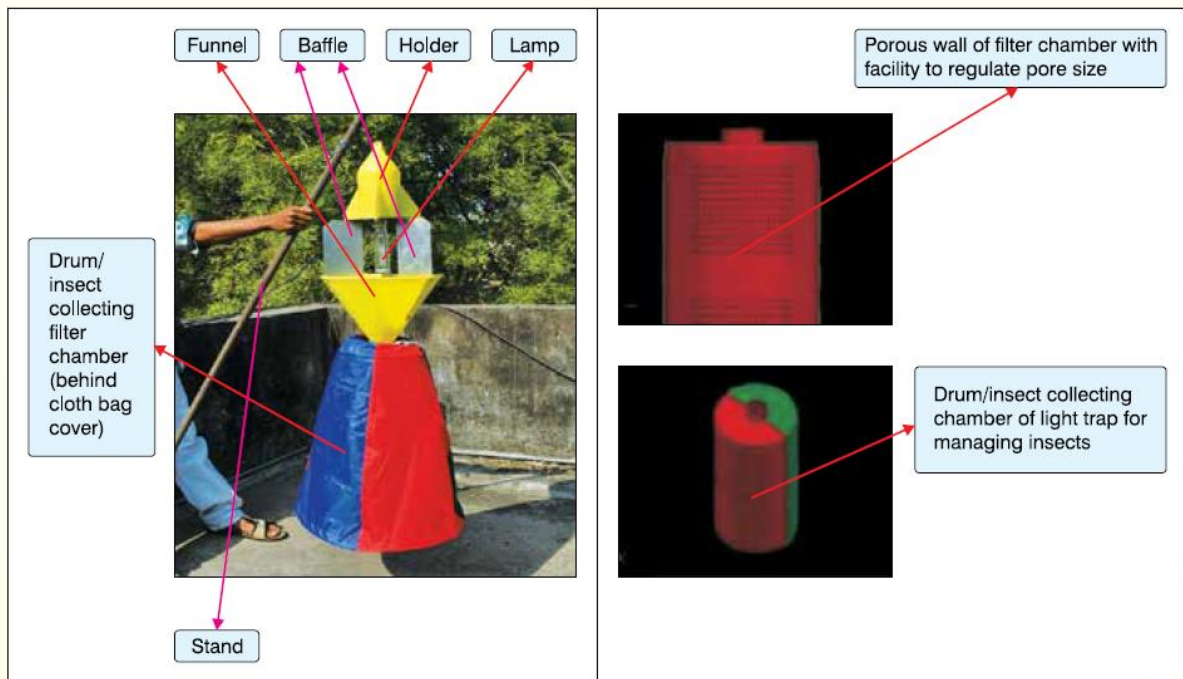
The height of the light trap can be kept in such a way that it remains 60 cm above that of the crop. The main light source attracts the phototrophic insects such as moths, flies and beetles towards it. These insects fall in the funnel kept below it and get collected into the insect collecting chamber. The sub light sources provided inside the protective cover attract the trapped insects towards it from the insect collection chamber. The porous walls of the insect collection chamber allow smaller sized insects

to escape. The trap may be installed in the field wherever one would like to monitor or trap the insects. The insect collection chamber can be removed from the delivery end of the funnel. The harmful insects trapped in the insect collecting chamber can be removed out of it or killed there itself. Mass trapping of adults of both sexes of insect-pests by light traps help in minimizing their infestation in the crop fields. On the other side, the facility of escape of non-target/beneficial insects from the insect collecting chamber is a desirable attribute. It is a proven important eco-friendly tool against crop pests.

## Specifications

|   |   |
|---|---|
| Light source  | Bulb 125 W mercury vapour lamp having hard glass cover  |
| Funnel  | It is made of high quality plastic (to avoid electric shocks in the field)  |
|   | Upper diameter: 12"   |
|   | Lower diameter: 2"  |
|   | Weight: 300 g   |
| Baffle  | No. of baffles: 3   |
|   | Length: 12.5"   |
|   | Width: 4"   |
|   | Angle: 1200   |
| Insect collection chamber/ filter   | 1. Light trap safer to beneficial insects: It contains single filter chamber having pore size 3 mm approx.  |
|   | 2. Light trap for managing insects: It contains double-walled filter chamber having pore size 0-7 mm.   |
|   | Features of the filter chamber:   |
|   | 1. Filter fitted with two 5 W watt bulbs 15 W transparent glass bulbs to attract non- target insects trapped within the filter chamber.   |
|   | 2. Filter is covered with cloth expanded with the help of rings.  |
|   | 3. In this light trap, for trapping most of the phototrophic macro-lepidopteran insects, there is need to maintain pore size of 3 mm. The size may, however, be regulated by rotating the wall as per the requirement (based on specific non- target insects desired to be released). |
|   | Length of filter chamber: 12"   |
|   | Breadth of filter chamber: 9"   |
| Although the device cannot restore all beneficial insects the dimensions are good enough to enable escape of several non-target and beneficial insect fauna including micro-hymenopteran (Ichneumonidae, Formicidae, other hymenopteran insects), micro-coleopterans (Staphylinidae), micro-dipterans ( <i>Ephydriidae</i> ), micro- dermapterans (Forficulidae) and several other insect fauna. During outbreak of pests of size smaller than the pore dimensions <i>viz.</i> , brown plant hopper, white backed plant hopper of paddy and other similar small insects, the pores can be completely blocked by sliding over the chamber. |   |

## LIGHT TRAP SAFER TO BENEFICIAL INSECTS



### Patent granted:

*ICAR-NCIPM has been granted national as well as international patent (Australia Indonesia and Vietnam Governments) for Light Trap-managing insects.*

*Commercialization of the technology generated Rs. 7.0 crore (approx.) revenue to the institute during 2010-19.*