



emitting 250 nm is fitted at the centre of a funnel of 310 mm diameter at the top and 35 mm diameter at the bottom. The bottom end of the funnel is attached with a transparent plastic container for collecting the trapped insects. Three hooks and a tripod stand have been provided at the periphery of the funnel to hang the unit. The UV light trap can be placed in storage godowns at 1.5 m above ground level, preferably in corners. The trap can be operated during the night hours. The light trap attracts stored product insects of paddy like lesser grain borer, red flour beetle and saw-toothed beetle in large numbers. Normally 2 numbers of UV light trap per 60 x 20 m (L x B) godown with 5 m height is suggested.

### 7. A Device to remove Insect Eggs from Stored Pulse Seeds

The gadget can successfully crush the eggs of pulse beetle. The gadget has outer container and an



inner perforated container with a rotating rod having fixed with plastic brushes on all sides. The seeds with eggs are to be stored in the perforated container and the rod has to be rotated one full circumference clockwise and anti-clockwise for 10 minutes, 3 times a day (morning, noon and afternoon). Due to the splashing action of the brush in rotating rod, the eggs get crushed and thus the damage is prevented. The treatment does not affect the germination of seeds.

### 8. Trap for monitoring stored product insects in warehouse

It is a device for detecting stored grain insects in bag-stacks which comprises a main hollow tube having a diameter in the range of 1.8 to 2.0 cm with equi-spaced perforation in the range of 1.8 to 2 mm on its upper portion with a bend at one end which ends in a transparent collection unit to collect the insects falling down from the bend, the other end of main tube being closed.



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# GADGETS IN STORAGE PESTS MANAGEMENT



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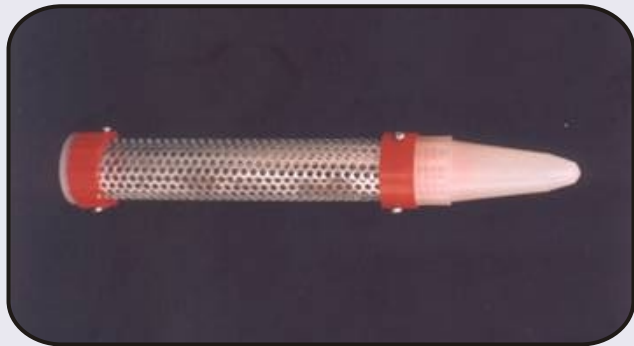
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A total of 14 species are well adapted for living in stored grains and responsible for most of the damage. The post-harvest losses are estimated to be around 9.3%, of which losses during storage alone are estimated at 6.6% and insect alone causes around 2.5% loss. The timely detection of insects in the stored produce is essential to plan timely control measures. Many devices have been developed for stored grain insect management, some of which are popularly used across the country in households/farms/go-downs. All these devices can be used for both monitoring and mass trapping of stored grain insects.

### 1. INSECT PROBE TRAP

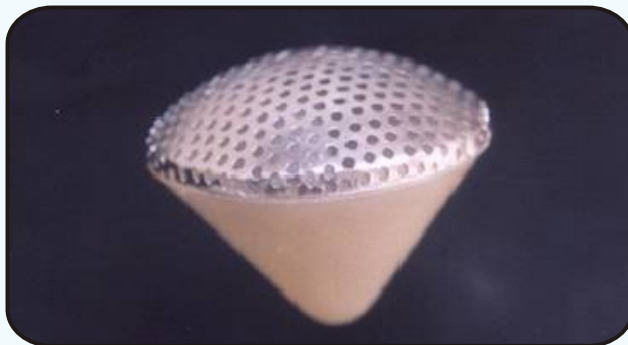
It consists of a main tube, insect trapping tube and a detachable cone at the bottom. Equispaced perforations of 2 mm diameter are made in the main tube. The insect trap has to be kept in the grain like rice, wheat *etc*, vertically with the white plastic cone downside. The top red cap must be with the level of the grain. Once the insect enters the hole it falls down into the detachable white cone at the bottom. The white detachable cone can be unscrewed once in a week and the



insects can be destroyed. It is effective against rice weevil, red flour beetle and lesser grain borer. The 2-3 traps/25 kg bin (28 cm dia and 39 cm length) can remove > 80% of the insects within 10-20 days.

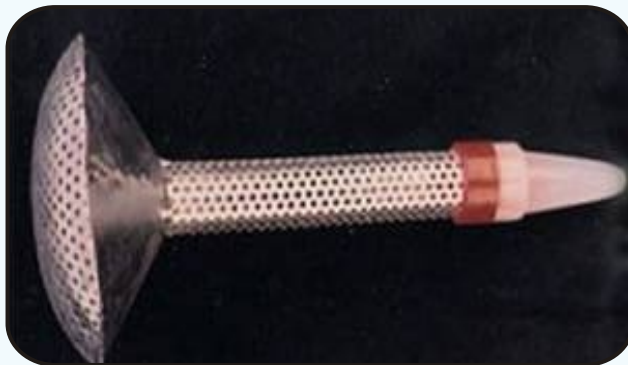
### 2. PITFALL TRAP

Pitfall traps are used for capturing insects active on grain surface and in other layers of grain. It has perforated lid and cone shaped bottom which tapers into a funnel shaped trapping tube. It is simple and economical (cost per trap is Rs. 25/- only) and easy to handle.



### 3. TWO-IN-ONE MODEL TRAP

Combination of probe and pitfall increase the trapping efficiency of insects. It is effective on pulse beetles and captured alive in this trap.



### 4. INDICATOR DEVICE

It consists of a cone shaped perforated cup (3mm perforation) with a lid at the top. The cup is fixed at the bottom with a container and circular dish, which are to be smeared with sticky material like vaseline. Farmers, before storing their pulses,



should take 200 g of pulses to be stored and put them in the cup. When the field carried over beetles start emerging, due to their wandering behaviour, they enter the perforations and get slipped off and fall into the trapping portions. The device with 2 mm perforations can be used for cereals. This will help in eliminating the initial population, which acts as the major source for further build up.

### 5. AUTOMATIC INSECT REMOVAL BIN

The structure has four major parts namely outer container, inner perforated container, collection vessel and the lid. The grains are held in the specially designed inner perforated container. Insects, while wandering, enter the perforation to reach the aerated part and get slipped off and fall into the collection vessel through a pitfall mechanism provided in the collection vessel. The container will be useful for storing rice, wheat, broken pulses, coriander *etc* It is effective against rice weevil, lesser grain borer, red flour beetle and saw toothed beetle. More than 90% insects can be removed in 10 days. The containers are available in 2 kg, 5 kg, 25 kg, 100 kg and 500 kg capacities.



### 6. UV-light trap for grain storage godowns

The UV light trap (4 W germicidal lamp)