

v. **Bioassay Procedures:**

(a) *Film or residue deposit method:* The insecticidal solution or extract is deposited on a glass surface or petridish, flask, vial, wide mouth jar etc. Petridishes coated on their inner sides (both container & its cover) are used successfully for bioassay. One milliliter solution has been found sufficient to provide films on petridish (container & cover both) of 5 cm. diameter. The solution is allowed to spread in the petridish by swirling it gently and then allowing it to dry up at room temperature. The test insects are then exposed to the film of the toxicant in the container. The insect picks up the toxicant through its tarsi and gets poisoned.

(b) *Aqueous solution method:* The solution of insecticide in a measured quantity is mixed with water in a suitable container. Known number of sensitive aquatic organisms such as mosquito larvae, crustaceans, fishes etc. are released in it. Amount of solvent in which the toxicant is dissolved before mixing it with water should be as little as possible and its toxicity, if any, be also detected by control tests.

(c) *Topical application method:* Topical application on the test insect is by means of topical applicator. With this equipment relatively small amount of toxicant can be applied on the body of the insect. The toxicant is dissolved in a suitable solvent generally acetone and is applied at the rate of 0.5 to 1 microlitre (ml) per insect. Uniform spraying or dusting on the body of insect can be done by means of potters tower or dusting tower.

(d) *Injection method*: The toxicant is directly injected in the body system of organism by hypodermic needle. The quantity of toxicant is measured precisely by micrometre.

(e) *Sandwich method*: In this method measured amount of insecticide is put in between two leaves and the test insect is allowed to feed on it. It is generally used for leaf eating caterpillars.

(f) *Dipping method*: Some insects such as dipterous maggots can not stand any kind of injury in their skin. Consequently the maggots are picked up with forceps and dipped in the insecticidal solution.

(g) *Leaf dipping method*: This method is used for sucking insects which are not easily removed from leaf surfaces. The leaf containing insects is dipped in the insecticidal solution of known strength.

(h) *Fumigation method*: For some stored grain pests the grains are subjected to fumigation by suitable preparation of the insecticide for a specified duration.