

INTEGRATED PEST MANAGEMENT (IPM) IN FOOD PLANTS

Pest management in food plants is a job that requires a very high standard both in technical and professional aspects. It is related to food safety and inevitable compliance with relevant legal and production standards. Besides, operations of food plants often impose difficulties on pest management:

- Transportation of raw and packaging materials may bring pests in.
- The favor emitted from the plant could attract various types of pest.
- The food, temperature and humidity in food processing areas provide favorable conditions to pest breeding.
- Structures and facilities in food plants, old ones in particular, provide a lot of harborages for pests.
- Dust, grease, high temperature and steam generated from food processing would remove the effects of pesticides applied.
- Frequent cleaning and goods delivery would often remove or damage pest control chemicals and devices.

Pests may get into food plants in two ways: by walking, crawling or flying; or moving together with raw materials and tools. For ensuring food safety and preventing damages to building structures and equipment, IPM measures including sanitation, structural prevention, pest monitoring, physical and chemical control should be implemented.

Sanitation

Sanitation is the most important component of food plant IPM:

- Clear stagnant water, food remnants and garbage properly everyday.
- Clean equipment, tools and production line thoroughly. Raw materials or food remnants need to be cleared from machineries at intervals.
- Avoid prolonged stocking of raw materials, food, tools, etc. Any condemned food products should be disposed of properly as soon as possible. Store goods on metal racks and away from walls.
- Inspect incoming materials, tools, etc. thoroughly for any pest infestation.
- Properly contain raw materials and food products.
- Maintain landscape regularly to prevent pest breeding and harborage.

Structural Prevention

- Repair door and window with gaps larger than 6 mm. Install auto-closing doors and windows or air curtains, plastic curtains, etc. as far as practicable.

- Seal or fill up holes, cracks and crevices.
- Use smooth, waterproof and easy clean materials for floor and working tables, etc.
- Install wire mesh at vent openings.
- Install 30 cm high metal plate at the bottom of wooden door.

Pest Monitoring

- Conduct regular inspections to building structures, landscaping, loading dock, food processing zone, scullery, garbage room, toilet, staff locker room, canteen, office, etc. Effects should be made to identify any potential pest problem in the earliest stage. Any sign of pest infestation should be recorded and appropriate follow up measures should be taken immediately.
- Identify any conducive conditions that would favor pest ingress, breeding and living. Implement appropriate measures to eliminate such conditions.
- Install monitoring stations at appropriate locations, if necessary, to monitor the activity of the pest concerned.
- Report findings of inspections with relevant details such as dates, infested locations, identified pest species, estimated population, cause of breeding and proposed control measures, etc.

Physical Control

Physical control should be implemented with regular inspections and clearance to the traps for avoiding food contamination with body parts of caught pests.

- Install insect light traps to catch flies and other light-attracted pests.
- Install outdoor CO₂ releasing adult mosquito traps to control mosquito infestation.
- Use cage traps, snap traps and glue boards for rodent control.
- Use adhesive insect traps to catch cockroaches and crawling insects.

Chemical Control

Only allowed pesticides for food plants should be used. It is required to check with relevant legislations and label instructions prior to selecting pesticides.

Relevant safety precautions should also be taken:

- Pesticides or baits should only be applied after close of operations.
- Only anti-coagulant poison baits are allowed for rodent control.
- Cover and contain all food properly before application of pesticides.

- Clean all working tables properly before returning to operations for avoiding contamination by pesticide residues.