

Integrated Pest Management

CONSIDER USING THE IPM SYSTEM FOR PEST-FREE OPERATION IN GRAIN ELEVATORS

This article is based on a presentation by Zia Siddiqi, Ph. D., BCE, quality assurance director, Orkin Commercial Services, Atlanta, GA (404-609-9550). He spoke at GEAPS Exchange 2005 in Albuquerque, NM.

Keeping birds, bugs, and rodents out of grain elevators and away from grain is a continuous job for many facilities and one that requires an integrated pest management program (IPM).

An IPM program involves inspecting a facility for pests, identifying the pests present, selecting control strategies, and monitoring and performing recordkeeping, documentation, and communication.

IPM is an approach to pest control that utilizes regular monitoring to determine if and when treatments are needed and employs physical, mechanical, cultural, biological, and educational tactics to keep pest numbers low enough to prevent intolerable damage or annoyance.

In IPM programs, treatments are not made according to a predetermined schedule. They are made only when and where monitoring has indicated that the pest will cause unacceptable economic, medical, or aesthetic damage.

In practice, IPM is based on identification of the pest, monitoring activity, and applying control techniques when a "threshold" is reached.

IPM also is a pest-control system that minimizes health and environmental risks to humans. As a result, IPM is an important part of any food sanitation program. It plays a vital role in hazard analysis critical control point (HACCP) programs by controlling biological and chemical contamination.

Pests: Definition and Dangers

The broad definition of pest includes any organism (insect, rodent, bird, or

fungus) that is persistently annoying and affects human health and environment adversely. Below is a list of pests and the related hazards they pose to humans:

- Rodents — Various diseases, Hanta virus, SARS.
- Birds — Histoplasmosis, more than 26 bacteria.
- Roaches — Pathogenic organisms, asthma.
- Stored-Product

Insect Pests — Contamination, uric acid, foul smell, health hazards from dermestid beetles.

- Flies — Microbial dispenser, several diseases.

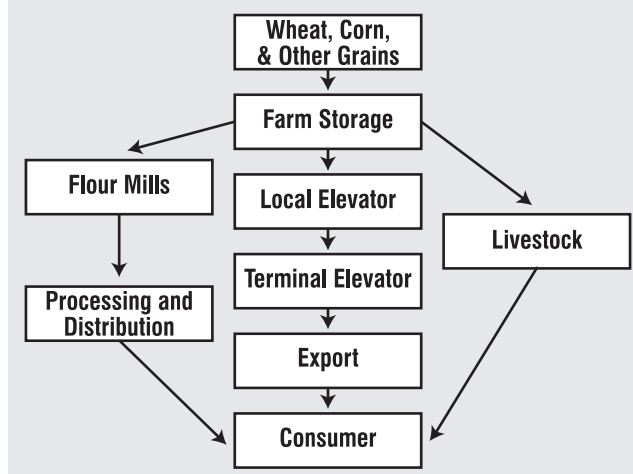
Pest-Control Operating Procedures

- Identify existing conditions — describe current pest control status.
- Company policy and procedures — describe what the program involves.
- Monitoring and recordkeeping— describe how records will be used to document data, and provide format for follow up and corrections.
- Forms of documentation — include pest activity logs, IPM log, pesticide application records, etc.

Steps of an IPM Program

1. Perform a floor-level inspection of the operation, covering all five pest activity zones: entry points, water sources, food sources, harborage points, and employee areas.

Grain Flow & Potential for Pest Infestation



2. Analyze the layout of the facility, noting all potential problem areas both inside and out.

3. Identify pests accurately, including different kinds of pests, as well as various growth stages.

4. Have a sanitation consultant visit to help you and your staff keep key areas of the facility clean and unattractive to pests.

5. Commit to an IPM treatment

Pests Associated with Grains

PEST	%	PEST	%
Indian Meal Moths	82	Flat Grain Beetles	15
Granary Weevils	65	Starlings	10
House Mice	42	Rice Weevils	9
Pigeons	42	Maize Weevils	5
House Sparrows	30	Common Bean Weevils	3
Norway Rats	29	Bats	2
Red Flour Beetles	27	Bran Bugs	1
Sawtooth Grain Beetles	25	Owls	1
Lesser Grain Borer	16	Raccoons	1

strategy. This ensures that the least invasive, non-chemical method (such as exclusion or trapping) is always used as the first treatment option.

6. Create a custom treatment program to address any immediate pest

problem.

7. Perform ongoing monitoring and maintenance, with treatments adjusted accordingly to maximize effectiveness. Write up a sanitation and service report after each visit.

A successful pest-prevention program relies on knowledge, cooperation, and commitment from everyone involved: the pest control professional, the grain elevator operator, and the elevator employees.

Sanitation is the elevator operator's most important responsibility. The pest management professional provides sanitation advice to the elevator operator who, in turn, must see to it that employees follow proper sanitation practices.

Communication between the pest control provider and the grain elevator and its employees is vital. Employees must report evidence of pest activity immediately using a pest sighting memo, so that IPM measures may be taken to prevent infestations.

Jim Camillo, contributing editor

A Plan for Pest Control

Monitoring and Inspection:

- Pheromone traps.
- Glue boards/mechanical traps.
- Visual inspections for insects, rodents, birds.

Non-Chemical Control:

- Building to keep out rodents, birds, insects.
- Temperature control.
- Lighting.
- Spillage cleanup.

Chemical Control:

- Timed pyrethrin mists.
- Pheromone traps.
- Routine fumigation of bins/silos.
- Empty bin/silo treatment.
- Perimeter control of insects and weeds.

Rodent Control:

- Building out, make sure all doors fit tightly.
- Outdoor: bait stations/rodenticides/liquids, etc.
- Perimeter: weed abatement, eliminate ditches and standing water, gravel 24 inches along the perimeter.

Material for Rodent-proofing:

- Concrete reinforced: minimum thickness 2 inches, unreinforced 3 3/4 inches.
- Galvanized sheet metal: 24-gauge or heavier, perforated sheet-metal grills should be 14-gauge.
- Brick: 3 3/4 inches thick with mortar-filled joints.
- Hardware cloth: 19-gauge, 1/2x1/2-inch mesh.
- Aluminum (gauge): 22 for frames, 20 for kick plates, 18 for guards.

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