

13

Integrated Pest Management

Chapter Overview

Chapter 13 introduces students to methods for preventing and treating pests in food service operations.

Learning Objectives

- 13-1** Summarize ways to prevent pest risks
- 13-2** Identify signs of pest infestation and activity
- 13-3** Describe the criteria for selecting a pest control operator (PCO)
- 13-4** Explain considerations for storing and applying pesticides

Opening Case Study

1. What are some methods that might be used to keep the rats out?

Methods that can be used to keep the rats out include:

- Installing self-closing doors and door sweeps
- Repairing gaps and cracks in door frames and thresholds
- Keeping all exterior openings tightly closed
- Filling holes around pipes
- Covering floor drains with hinged grates
- Sealing cracks in floors and walls

Most importantly, the restaurateurs need to work with their PCO to keep the rats out.

Chapter Breakdown

Pages 268 to 272**13.1 Integrated Pest Management (IPM) Programs**

Resources

PowerPoint Slides 3 to 6

Reinforce and Review:

- Pests can carry and spread many diseases. Once they have infested a facility, eliminating them can be difficult. Developing and implementing an integrated pest management program is the key.
- An IPM program uses prevention measures to keep pests from entering the operation and control measures to eliminate any pests that do get inside. To be successful, deny pests access to the operation, as well as food and shelter. Also work with a licensed PCO to eliminate pests that do enter.
- Pests can be brought into the operation with deliveries. They can also enter through openings in the building itself. To prevent them from getting inside, check deliveries before they enter your facility. Refuse any shipment in which you find pests or signs of infestation. Screen all windows and vents. Install self-closing doors and air curtains. Keep exterior openings closed when not in use. Fill or cover holes around pipes, and seal cracks in floors and walls.
- A clean and safe operation offers pests little food and shelter. Stick to your master cleaning schedule. Dispose of garbage quickly, and keep all containers clean and tightly covered. Store recyclables as far from your building as allowed. Keep food and supplies away from walls and at least six inches (15 centimeters) off the floor. Rotate food items so pests do not have time to settle into them and breed.

Key Terms

- **Infestation:** Situation that exists when pests overrun or inhabit an operation in large numbers.
- **Integrated pest management (IPM):** Program using prevention measures to keep pests from entering an operation and control measures to eliminate any pests that do get inside.
- **Pest control operator (PCO):** Licensed professional who uses safe, current methods to prevent and control pests.
- **Air curtain:** Devices installed above or alongside doors that blow a steady stream of air across an entryway, creating an air shield around open doors—also called air doors or fly fans.

Knowledge Check Answers

1. The three basic rules are:
 - Deny pests access to the operation.
 - Deny pests food, water, and shelter.
 - Work with a licensed pest control operator.
2. Careful cleaning eliminates pests' food supply and destroys insect eggs. It also reduces the places where pests can safely take shelter.

Chapter Breakdown

Pages 272 to 274**13.2 Identifying Pests**

Resources

PowerPoint Slide 7

Reinforce and Review:

- Roaches live and breed in dark, warm, and moist places. Check for a strong oily odor, droppings that look like grains of black pepper, and egg cases.
- Rodents are a serious health hazard as well. Look for droppings, tracks, holes, nesting materials, and signs of gnawing.

Key Terms

No key terms for this section

Knowledge Check Answers

1. Signs of a cockroach infestation include:

- Strong oily odor
- Droppings (feces) that look like grains of black pepper
- Capsule-shaped egg cases that are brown, dark red, or black and possibly leathery, smooth, or shiny in appearance

2. What are some common areas where cockroaches may be found in an operation?

- Behind coolers, freezers, and stoves
- In sink and floor drains
- In spaces around hot water pipes
- Inside equipment, often near motors and other electrical devices
- Under shelf liners and wallpaper
- Underneath rubber mats
- In delivery bags and boxes
- Behind unsealed coving (especially rubber-based)

Chapter Breakdown

Pages 275 to 276**13.3 Working with a Pest Control Operator (PCO)**

Resources

PowerPoint Slide 8

Reinforce and Review:

- Most pest control measures should be carried out by professional pest control operators. Work with a licensed PCO to prevent or eliminate pests and keep them from coming back.
- Check references and require a written service contract when hiring a PCO.

Key Terms

- **Pesticides:** Chemicals used to destroy pests, usually insects.

Knowledge Check Answers

1. Pesticides are chemical agents used to destroy pests.
2. The services that a PCO provide include:
 - Developing an integrated approach to pest management. This may include a combination of chemical and nonchemical treatments to solve and prevent problems.
 - Staying current on new equipment and products.
 - Providing prompt service to address problems as they occur. Contracts should include regular visits as well as immediate service when pests are spotted.
 - Keeping records of all steps taken to prevent and control pests.

Chapter Breakdown

Pages 276 to 277**13.4 Treatment**

Resources

PowerPoint Slide 9

Reinforce and Review:

- PCOs use pest control methods that are environmentally sound and safe for operations. They also know which techniques will work best to control the types of pests in your area and new technologies that are available. Work with your PCO to determine which pest control methods are best for your operation.

Key Terms

No key terms for this section

Knowledge Check Answers

1. Effective treatment starts with a thorough inspection of an operation's facility and grounds.
2. The following items should be included in a written treatment plan from a PCO:
 - Price
 - Exactly what treatment(s) will be used and the potential risks involved
 - Dates and times of each treatment
 - Steps you can take to control pests
 - Any building defects that may be a barrier to prevention and control measures
 - Timing of follow-up visits, including plans for the PCO to assess the treatment and suggest alternate treatments if pests reappear

CLASSROOM ACTIVITY: Battle of the PCOs

LO: 13-2 Summarize ways to prevent pest risks

13-3 Describe the criteria for selecting a pest control operator (PCO)

Materials: Copies of Restaurant Floor Plan and blank sheets of paper

1. Divide students into small groups and give each group a Restaurant Floor Plan and blank sheet of paper.
2. Tell students to imagine you are an owner who needs to hire a pest control operator. Each group is a pest control company that wants your business.
3. Students will have 10 minutes to create a proposal that should include:
 - Contract terms (frequency of monitoring, emergency service, records, etc.)
 - An annotated floorplan that shows where/how they will prevent and treat pests
4. Review the proposals and announce the winner. As a whole class, discuss why that group's proposal was the best choice.

Chapter Breakdown

Pages 277 to 278**13.5 Using and Storing Pesticides**

Resources

PowerPoint Slides 10 to 11

Reinforce and Review:

- Rely on your PCO to decide whether pesticides should be used in your operation. PCOs are trained to determine the best pesticide for each pest and how and where to apply it.
- Your PCO should store and dispose of all pesticides used in your facility. If they are stored on the premises, they should be kept in a secure location away from where food, utensils, and equipment are stored.

Key Terms

No key terms for this section

Knowledge Check Answers

1. Reasons why pesticides should not be applied by restaurant or foodservice staff members include:
 - When applied incorrectly, they may be ineffective or harmful.
 - Pests can develop resistance and immunity to pesticides.
 - Each region has its own pest control problems. Control measures may vary.
 - Pesticides are regulated by federal, state, and local laws. Some are not approved for use in restaurants or foodservice operations.
2. Equipment and food contact surfaces that cannot be moved should be covered prior to the application of pesticide.

End of Chapter

Page 279**Discussion Questions**

1. What are two primary components of an integrated pest management (IPM) program?

Two primary components of an integrated pest management program are prevention and control. This is done by:

- Preventing pests from entering the operation.
- Controlling pests by eliminating any that do get inside.

To achieve this, an IPM program has three basic rules to keep your operation pest-free:

1. Deny pests access to the operation.
2. Deny pests food, water, and shelter.
3. Work with a licensed pest control operator.

2. How can you prevent pests from entering your operation?

To prevent pests from entering your operation:

- Use approved, reputable suppliers. Check all deliveries before they enter your operation. Refuse shipments that have pests or signs of pests, such as egg cases and body parts.
- Screen all windows and vents with at least 16 mesh per square inch screening.
- Install self-closing devices and door sweeps on all doors.
- Repair gaps and cracks in door frames and thresholds. Use weather stripping on doors with no thresholds.
- Install air curtains above or alongside doors.
- Keep all exterior openings closed tightly.
- Use concrete to fill holes or sheet metal to cover openings around pipes.
- Install screens over ventilation pipes and ducts on the roof.
- Cover floor drains with hinged grates.
- Seal all cracks in floors and walls.

3. How can you tell if your operation has been infested with rodents?

Signs of a rodent infestation include:

- Signs of gnawing
- Urine stains revealed by black (ultraviolet) light
- Droppings that are shiny and black (fresh) or gray (older)
- Tracks
- Nesting materials, such as scraps of paper, cloth, hair, and other soft materials
- Holes in quiet places, near food and water, and next to buildings

4. What are the storage requirements for pesticides?

All pesticides used in your operation should also be stored by your PCO. If they are stored on the premises, follow these guidelines:

- Keep pesticides in their original containers.
- Store pesticides in a secure location away from where food, utensils, and food equipment are stored.

5. What precautions must be taken both before and after pesticides are applied in your operation?

To minimize the hazard to people, have your PCO use pesticides only when you are closed for business and staff is not on-site. When pesticides will be applied, prepare the area to be sprayed by removing all food and movable food-contact surfaces. Cover equipment and food-contact surfaces that cannot be moved. Wash, rinse, and sanitize food-contact surfaces after the area has been sprayed. Anytime pesticides are used or stored on the premises, you should have corresponding Safety Data Sheets (SDS), because pesticides are hazardous materials.

Page 280**Apply Your Knowledge****The Best Intentions****1. What prevention measures might Michael have overlooked in his recent remodeling that could have led to this infestation?**

Michael may have overlooked several measures for preventing pests. First, he may not be inspecting deliveries before they enter his operation. This is important since pests can enter an operation with deliveries. Perhaps Michael is not keeping exterior openings tightly closed when not in use. He may also have failed to seal openings around pipes or cracks in floors and walls. Maybe Michael did not think about installing door sweeps on his doors, or there are cracks in his door frames or thresholds.

2. What should Michael do to eliminate the roaches?

Michael needs to contact a pest control operator to help him eliminate the roaches. The PCO will also be able to help him determine how the roaches are getting into the operation and decide the best way to fix the problem.

Pages 280 to 281**Study Questions**

1. C. Pest control operator
2. A. Warm and dark
3. A. Strong, oily
4. A. Work with a licensed pest control operator.
5. C. washed, rinsed, and sanitized.
6. A. Away from food and equipment
7. D. It helps prevent pests from settling in.
8. B. the PCO