ServSafe
Pest Management

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Introduction

This presentation and script were developed for use by North Carolina county CES and EH personnel in teaching the Pest Management section of the ServSafe® Program. In some cases, there are italicized included for your information and to answer questions that have frequently been asked during the presentation. These details do not have to be included in your presentation. The information is somewhat more comprehensive than the material that is presented in the manual and is needed by the participants to prepare for the ServSafe. Feel free to adapt the script and slides to your own style, your time constraints as well as your sense of your audience needs.

If you have any questions or suggestions about this script and the slide content, please let me know.

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In this section of the ServSafe training, we will discuss some of the common pest problems that can be found in food service facilities. We will also discuss the steps you should take to develop a safe and effective pest control program.

Roaches, flies, rodents and other pests cause problems.
- They're bad for business – people see pests and question your cleanliness.
- Their feeding and nesting activities damage food, supplies and facilities.
- They can transmit bacteria, fungi and other pathogens through feces (such as the mouse droppings seen on the right) and urine or simply by walking or landing on food prep surfaces or equipment.

Pests are constantly looking for food, water and shelter – all of can be too abundant and too accessible in food service areas. Pesticides are just one part of the solution to pest problems. A pest management or IPM approach combines chemical and non-chemical methods to control current pest problems and prevent future ones. IPM starts with sanitation, i.e., eliminating or controlling pest access to food and water sources. Then comes exclusion - sealing openings with caulk, foam, screening (image on right) to keep out pests. Once you have taken these steps, THEN you should work with a pest management professional who is experienced with using the least-toxic methods of pest control that are suitable for the food service environment.
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<th>Slide 4</th>
<th>Trash Disposal &amp; Outdoor Maintenance</th>
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<td>• All trash must go inside the dumpster</td>
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<tr>
<td>• Keep area clean</td>
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Make sure that you dispose of all trash and cardboard properly in dumpsters and preferably away from your building. Trash left on the ground or uncovered will attract rodents and other animals. Maintain your landscaped areas. Keep shrubs and other vegetation pruned 12” or more from the foundation to make these areas less attractive to pests.

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<th>Slide 5</th>
<th>Critical Pest Areas</th>
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<td>Food prep areas &amp; equipment</td>
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Let’s look at some of the critical areas in your facility where pests such as cockroaches & flies are likely to be found. Cockroaches are attracted to warm areas, particularly near spilled food and beverages. Equipment, such as blenders, microwaves and electric grills can be a major attraction to cockroaches. Keep food preparation equipment and surfaces (especially under equipment) clean after use to keep them from attracting flies.

<table>
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<th>Slide 6</th>
<th>Critical Pest Areas</th>
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<tr>
<td>• Sink and floor drains</td>
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<td>• Dishwashing equipment</td>
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Dishwashers, sinks and sink drains are attractive hiding and breeding sites for flies and cockroaches. Keep these areas free of food debris. Mop up standing water underneath equipment. Inspect for leaks and seal gaps around water pipes where they pass through walls or floors.
**Slide 7**

<table>
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<th>Storage Areas</th>
<th>Mop storage areas</th>
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<tr>
<td>- Reduce humidity</td>
<td>- Empty buckets</td>
</tr>
<tr>
<td>- Check deliveries</td>
<td>- Hang mops</td>
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**FIFO**

REMEMBER – some pests are often brought in by people. Your vendors may be delivering more than just supplies. Check your deliveries before placing items in storage area. Reject infested shipments. Follow “FIFO”; always rotate your inventory. Also, never leave water in wash buckets overnight where they may attract cockroaches. Hang mops so they can dry.

**Slide 8**

- Keep storage areas organized, accessible, and "inspectable"
- Inspect stock for signs of feeding damage

Keep your storage areas well-organized and “inspectable”. Check for signs of feeding damage (such as the picture in the lower left showing a box damaged by mice). A cluttered storage area makes it easier for pests and their damage to remain unnoticed. It also makes it more difficult to find and eliminate them.

**Slide 9**

Cockroaches are probably THE most common pests in food service facilities. They are active mostly at night. Seeing many of them during the day often means that you have a very serious problem on your hands. They prefer places that are: **Warm** (80°F or higher) and **Moist** - 55% humidity or higher *(which is why we recommend keeping relative humidity at or below 50%)*. They like to hide in cracks and crevices (some as small as the thickness of a quarter) and, unfortunately, they take advantage of “free rides” in delivery boxes, bags and personal items. Picture at left shows: (left-to-right) American cockroach, oriental cockroach, German cockroach (the most common problem), and the brownbanded cockroach. Picture at right shows a female German cockroach with an egg capsule containing over 35 eggs.
What are signs of an infestation? Cockroaches leave fecal smears (left) that dry on surfaces. They also make coarse pepper-like fecal droppings and leave behind egg cases (on right) under and inside drawers, cabinets, equipment and other hiding areas. Very heavy infestations may leave a detectable oily odor.

Preventing a cockroach problem starts with early detection. Sticky traps such as the ones shown here should be placed in known problem areas and other typical breeding areas to detect cockroaches. If you find a cockroach, inspect the area carefully for signs of whether this is an isolated incident or a potentially serious problem. THEN you can target your control efforts to these areas. (NOTE: the trap on right caught a female with an egg case. The hatching offspring were then trapped, too).

Liquid or aerosol insecticides can be used but only when necessary. These applications should be done only by a pest management professional and only when no one else is in the building. Applications should be limited to ‘crack & crevice’ or ‘spot’ (2 sq. ft.) treatments. Foggers (“bombs”) and other broadcast sprays can easily contaminate exposed food and food prep equipment. Remove all exposed food items and cover food preparation surfaces and equipment. Even then, you should still wash down these areas after any spraying is done.
<table>
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<tr>
<th>Slide 13</th>
<th>Cockroach baits reduce/prevent the likelihood contaminating food and food prep equipment. Here are examples of good placement of cockroach baits. Since roaches tend to congregate in dark corners, they are more likely to find baits such as this bait tray (top left) on the bottom shelf in a storage cabinet or the gel type of bait (bottom left) placed in the casters of storage bins where cockroaches may hide. REMEMBER – baits only work when other food sources are not readily available to the cockroaches. Sanitation is critical to successful baiting.</th>
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<tr>
<td>Slide 14</td>
<td>Rodents are another big pest problem in food service areas. They can damage or contaminate food, supplies and property and can spread diseases through feces and urine. Mice (more often than rats) will nest indoors. Inspect boxes, furniture and areas under large appliances and vending machines (right) for signs of mouse activity.</td>
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<td>Slide 15</td>
<td>Rodent infestations usually start outdoors. Rat problems will often occur near a source of water such as a creek or storm water drain (right) or retention ponds. Look for rodent burrows or nests in areas that are hidden by tall grass and shrubs or along building foundations (photo at left show rodent burrows on a berm behind a large grocery retail store).</td>
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</table>
| Slide 16 | Rodent Clues  
• Runways through vegetation  
• Tracks in dirt or dusty areas indoors  
• Rub Marks  
- Depending on your situation, you may see rodent tracks on dusty surfaces such as an HVAC trunk line shown in the upper right. When rats are numerous, they often make “runways” or worn paths through grass or other vegetation between their burrows and their food sources (lower right show rat runways from a ditch bank). Also, rats and mice tend to run along walls. Because their fur is often greasy/dirty, they leave “rub” marks (arrows on image top left) on the surfaces along which they travel constantly. These tracks and rub marks can be use to detect rat movement along pipes, electrical conduits and other utility lines. |
| Slide 17 | Rodent Gnawing & Nest Debris  
- Look for gnawing marks on wood or other objects such as the plastic container shown at the lower left. They will also shred paper, Styrofoam and other materials (picture at right) to line their nests. |
| Slide 18 | Rodent Droppings  
• Black/dark color depending on food  
• Often concentrated in areas of activity  
- Rodent feces are another good clue to watch for during your inspection. They will frequently be found on the ground in corners, behind or on top of boxes along a wall or on shelves, etc. The picture at right shows the size of rat droppings relative a quarter. |
Slide 19

Rodent Exclusion

- Foam sealants alone will not keep out rodents.
- Use hardware cloth to cover large openings.

Rodents can enter a building through almost any unprotected opening. Rats can actually squeeze through openings that are not much larger than the diameter of a quarter. Use hardware cloth screening (not just foam) to prevent rodents from entering around old windows, vents, utility lines and other openings.

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Rodent Traps

Mechanical rodent traps include “live traps”, lethal “snap traps”, as well as sticky traps or glue boards. Live/dead rodents should be removed and disposed of immediately. Sticky traps (such as the one on the left) are used frequently for mice. All of these traps must be checked and serviced routinely. [Note: Some people consider the use of sticky boards for rodent control as inhumane].

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Toxic Baits for Rodent Control

- Used mainly outdoors
- Leave the job to trained people
- Baits are less effective when other foods are easily accessible by rodents
- Must use secure tamper-resistant boxes in public areas.

Poison baits are another excellent method of control when used properly, although they are probably best used outdoors rather than indoors because the rodent may die in some inaccessible area resulting in a noticeable and lingering odor. Sanitation is critical to the success of baits by limiting the rodent’s access to other foods which may “distract” them from feeding on the baits. If you use baits in public areas, they must be placed in secured bait boxes that prevent people (particularly children) and pets from contacting the poison. Because of the potential hazards of using poison baits, the work should be left to a pest control professional. Placement (location) of the baits indoors or outdoors is also critical. They should be placed along walls and other rodent runways (as seen on the right). Use only the solid “block” type bait (shown at left) not loose pellets which can be carried away and dropped by the rodent.
Rodent Control

- Check Traps & Baited Areas Daily
- Dispose of trapped or dead rodents ASAP

Whether you use traps or baits, check the traps and baited areas (indoors and outdoors) for dead rodents. Remove carcases immediately for health safety and aesthetic reasons. (NOTE: the picture at right shows a poisoned rat that died near a wooden walkway. Stray dogs, cats and even some birds may feed on the carcases and become poisoned in the process. This is called “secondary toxicity”).

Common Fly Pests

- “Filth Flies” – House flies and blow flies
- Others – Fruit flies, drain flies, fungus gnats

Let’s turn our attention to flies. “Filth flies” are the most common fly problems associated with food-handling facilities. They include house flies and the green, blue or coppery colored blow flies (upper right) commonly seen around garbage cans. Fruit flies (lower left) will be found near damaged or discarded fruits and vegetables. In restaurants that serve alcohol, fruit flies will often be found around the bar, particularly where beer may be poured or spilled. Drain flies (lower right) breed in floor/sink drain, as well as the drip lines for air conditioners, freezers and ice-makers. Fungus gnats can also be found both indoors and outdoors in areas where plants are overwatered.

Aerosol sprays, foggers, auto-misters

- Reduce fly populations by killing flies on exposed surfaces
- More effective in small confined areas
- Must not contaminate food or food prep surfaces or equipment.
- NOT A LONG-TERM SOLUTION TO CHRONIC FLY PROBLEMS.

Chemical controls for flies can be helpful, but they are rarely a long-term solution to fly problems, particularly indoors. Fly baits can be helpful but should not be placed where they will simply draw more flies to building. These products are not usually suitable directly around food prep areas.

Aerosol sprays or foggers can eliminate flies found indoors at the time they’re applied, but they do nothing to correct the conditions that are causing the problem or are allowing flies to invade the building. Before using aerosols, cover or store all food. Then, clean all food preparation surfaces and utensils that were exposed during the treatment.

[Note: Some people spray the exterior of dumpsters, which will kill some flies, but this is a very temporary impact. The focus should be on prevention and exclusion, as we will discuss]
**Slide 25**

NUISANCE FLY CRITICAL AREAS

Routine maintenance of sink and bathroom drains, as well as equipment drip lines will prevent the buildup of debris (arrow at left) in which drain flies can breed. Keep the counters, spill trays and floors in food and beverage areas clean as possible, floor mats need to be cleaned nightly to remove residues of spilled food and beverages.

**Slide 26**

Dumpsters & Trash Cans

- Empty regularly and clean out periodically
- Keep lids/doors closed.
- Keep pads/area clean.
- Check drain plugs

Trash receptacles particularly those located in customer areas and near doors (photo at right) need to be emptied regularly throughout the day so they do not attract flies to the building. Keep the areas around trash cans clean. Keep dumpsters and other trash cans closed. Dumpsters should be emptied regularly. Dumpsters, compactors and other trash containers as well as the areas around them should be kept clean so that you attract fewer flies and other pests.

NOTE: when trash dumpsters are cleaned, make sure they’re returned with the drain plugs in place (upper left picture).

**Slide 27**

Fly Exclusion

- Keep doors closed
- Use screens & air curtains

Screen doors (left) and air curtains or “fly fans” (left) can help keep out flies when exterior doors are open for deliveries or air circulation.
**Slide 28**

Lights traps can be used to trap flies both indoors and outdoors. They should be mounted preferably no higher than 4 feet, but out of the way of employee activities. Indoors, place these traps where they are not visible from outside. Otherwise, they might attract flies to the building. Bulbs should be replaced yearly and the replacement date noted on the trap. *(Note: The traps shown here are not the “zapper” type which should not be used indoors where airborne “exploding” insect body parts can contaminate food or food-prep surfaces).*

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In summary, pesticides can be extremely hazardous if they are misused. You must avoid contaminating food, food storage areas, and food prep equipment. Pesticides should NEVER be stored: a) in any container other than the original container or in a properly marked sprayer, b) in the same area where you store food and/or food-related supplies, or c) where they are accessible to children and wildlife. [NOTE: The picture above shows a pesticide container left out in the open behind a restaurant but near public parking area in a shopping center. This is a violation of our state’s pesticide storage regulations.]

You also need to be concerned about proper disposal of excess pesticides (you can’t simply pour the chemical down a drain) and empty pesticide containers. Leave these jobs to a licensed and trained professional, BUT..... Keep informed about what’s being done in YOUR business place.
KEEP RECORDS

- When & where your pest problems occur
- Details of pest control measures used
- Labels and MSDSs for all pesticides used
- Problems and areas that you or the property management need to fix

Keep records of your pest problems and control efforts. Use a “Pest Logbook”.

- The log allows you and your employees to note pest sightings. This helps your PCO deal more effectively with specific pest problems.
- The log also provides you with a record of recurring pest problems. In some cases, this information may allow you to trace certain pest problems back to conditions in the building or to deliveries from a particular vendor.
- You or your pest control service can record any chemical treatments or placement of monitors, traps and bait stations.
- It’s a good place to keep copies of product labels and MSDSs for ALL pesticides used in your facility.
- In turn, your pest control service can use the log to point out improvements that YOU need to make in your facility sanitation and maintenance programs.

[Note: the ServSafe book emphasizes having copies of a pesticide’s MSDS, but it’s equally important to have a copy of the product label. The MSDS provides safety information, but the product label let’s you know if the chemical is being used properly.]
An IPM Approach: Quality, not quantity

- Sanitation and Exclusion
- Routine inspections and monitoring, not simply monthly spraying
- Use traps and other non-chemical methods
- Limit spraying pesticides to situations when needed and only when customers and employees are not present.

REMEMBER: Pest Management starts with YOU. Keeping your place clean and in good condition will lessen the likelihood of serious pest problems. The rest of your program is a cooperative effort with your pest management professional. Your pest control program should emphasize inspection and monitoring, not simply monthly spraying. Alternative methods, such as baiting and trapping should be used first. Limit spraying to “as needed” situations AND when the building is not occupied.

QUESTIONS?

Any questions?