



Managing Pantry Pests

Leader's Guide

Objectives:

- Understand what pantry pests are and how to identify their presence in food.
- Learn to select and store foods to reduce the likelihood of an infestation of pantry pests.
- Become familiar with methods of controlling and eliminating pantry pests if they are found.

Materials for Leader:

- Managing Pantry Pests: Leader's Guide
- Pantry Pest photos (either printed copies or PowerPoint version)
- Pantry Pests -Descriptions
- Answer key to "Pantry Pest Pre-test"

Materials for participants:

- "Managing Pantry Pests Pre-test."
- "Managing Pantry Pests," University of Nebraska Lincoln, Publication 304.
- Consent letter/evaluation form.

Before the Lesson:

- Make copies of pre-test, handout, evaluation and consent form for each participant.
- Copy and cut apart Pantry Pest photos and their corresponding descriptions.

OR

- Locate the "Managing Pantry Pests" PowerPoint at <http://extension.oregonstate.edu/fch/fce-lessons> and prepare to show photos on a computer or projector, if equipment is available.

Distribute the handout, "Managing Pantry Pests Pre-test" to the members of your group. Ask them to read each of the statements and indicate "true" or "false" in the last column.

Introduction

Discovering "bugs" in your breakfast cereal may be disgusting, but it isn't unusual because many insects like to eat what we do. Stored foods commonly infested include flour, cereals, cracked grains, baking mixes and processed foods, crackers, macaroni, cured meats, powdered milk, dried fruits, nuts, popcorn and spices. Insects that feed on these products may also infest other grain-based items such as pet foods, birdseed and ornamental corn. Dried flower arrangements may also be attacked.

Several stages (egg, larva, pupa and adult) of these insects may be present at the same time in infested products. Because we keep our houses warm, these insects may continually reproduce and many stored product infestations can be found nearly any time of the year.

The first indication of an infestation is often presence of small brown beetles, moths or worms in cupboards or on counters. Upon closer inspection, insects may also be found in opened packages or containers of food and in the cracks and crevices of cupboards. Unopened packages may also become infested because some of these insects can readily chew into cardboard and foil packaging. Insects can be brought into the home along with infested food products. They can multiply and spread to other stored foods.

Once an infestation is suspected, identify the pest and try to locate the source. Occasionally, the source of an infestation can be very hard to find. It may be in an unopened package from the store. Consider the possibility food may have been spilled next to or behind hard-to-move appliances. Mice will sometimes collect seeds or dry pet food and hoard them in walls, under cupboards or dishwashers where the infestations are nearly impossible to find.

Insect pests most often encountered in stored food products are:

- Indian meal moths
- dermestid beetles
- sawtoothed grain beetles
- cigarette and drugstore beetles
- flour beetles
- granary, rice and maize weevils
- bean weevils
- spider beetles
- grain mites

We will review each of these pests.

Give each photo and corresponding insect description to a member of your group. Ask them to share the description and show the photo to the rest of the members.

OR

Show photos on a computer or projector. Have selected members share the description as you show the photos.

Pantry Pest Prevention

The following tips may be useful:

- Purchase food in package sizes that can be used up in a short time. Do not store food products more than two to four months, if possible. Use older packages before newer ones and opened packages before unopened ones.
- When purchasing packaged foods, be certain containers are not damaged and seals are intact.
- Store dried foods in insect-proof containers such as screw-top glass, heavy plastic or metal containers. This will prevent entry or escape of insects. Cardboard, paper or plastic wrapping will not prevent insect infestations.
- Keep food storage areas clean and do not allow crumbs or food particles to accumulate, as exposed food will attract insects. Cleanliness is especially important in areas where pet foods and birdseed are stored.

Control of All Stored Food Pests

Inspection and identification of all potential food sources is essential to controlling the infestation. Control requires locating and discarding all infested items. Do not overlook intact boxes or containers because many insects can chew their way into cardboard and foil.

Infested items can be thrown away or salvaged by freezing three to four days. Food can be heated in a 140°F oven for an hour with the same result. Empty and thoroughly vacuum cupboards or shelves holding infested items, paying particular attention to cracks and corners. Vacuuming picks up hiding insects and spilled or infested material. Empty the vacuum cleaner or discard the vacuum cleaner bag after use to prevent reinfestation.

Do not use insecticides for controlling these or other insects in pantry areas. Washing shelves with detergent, bleach, ammonia or disinfectants will not have any effect on these pests since these insects lay their eggs on suitable food. Removing infested items and thoroughly cleaning with a vacuum is usually sufficient. As a precaution against reinfestation, store susceptible foods in tightly sealed glass, metal or heavy plastic containers or in the refrigerator or freezer.

If insects continue to appear, go through stored items again, also check other rooms in the home for possible sources. Tree seeds blown into ventilators or around windows may harbor these pests. Dermestids (carpet beetles) can develop in many products such as feathers, silk, wool, fur, stuffed animal skins, dead insects, lint and many other materials. If insect problems persist, seek assistance from a pest control professional.

Ask participants to review their "Managing Pantry Pests Pre-test." Review each question and share the correct answers from the key attached to the leaders guide.

Evaluation

Evaluation: Please take time to evaluate the program by reading the consent form and filling out the evaluation survey. Give participants 5 minutes or so to complete the evaluation. Collect the evaluations and return them to your local county Extension Office.

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Based on *Managing Pantry Pests (304)* by Barb Ogg, PhD, Extension Educator, University of Nebraska, Lincoln which was adapted from *Insect Pests of Stored Food in Kitchen and Pantry* by S. Kamble, D. Keith and J. Kalisch, University of Nebraska.

Photo Credits:

- Red Flour Beetles in Bag of Flour: Clyde Ogg, UNL Pesticide Education
- Indian Meal Moth Photos: UNL Department of Entomology
- Warehouse Beetle Adult & Larvae: UNL Department of Entomology
- Larder Beetle: UNL Department of Entomology
- Cast Skins of Dermestid Beetle Larvae: Barb Ogg, UNL Extension in Lancaster County
- Sawtoothed Grain Beetles: UNL Department of Entomology
- Drugstore & Cigarette Beetle: Barb Ogg, UNL Extension in Lancaster County
- Confused Flour Beetle: UNL Department of Entomology
- Red Flour Beetle & Larvae: Barb Ogg, UNL Extension in Lancaster County
- Grainary Weevil Adults: UNL Department of Entomology
- Rice Weevil Adult: UNL Department of Entomology
- Common Bean Weevil Adult: Kansas State University
- Spider Beetles: UNL Department of Entomology
- Grain Mites: University of Idaho

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Key - Managing Pantry Pests Pre-test

Answer true or false to each of the following questions:

	True or False
1. Pantry pests are small insects that live in grain-based foods such as breakfast cereal, oatmeal and flour.	True. This category of pests includes small insects that consume the grain based foods as well as reproduce and live in the products. It does not include such insects as spiders, ants or cockroaches that may also infest food products but do not continue to live in the packages.
2. Pantry pests appear when cabinets are not cleaned regularly.	False. The appearance of pantry pests does not depend on cupboard cleanliness. They appear when the insects, eggs or larvae are introduced from another location, such as on a newly purchased package. Thorough cleaning can help prevent them from multiplying and control and eliminate them after they appear.
3. Pantry pests may also eat dried flowers and wool carpets.	True. Some insects will infest these non-food items, especially if there are seeds in the flowers or soil in the carpet to attract them.
4. The appearance of pantry pests may mean that a recent package you brought home from the store had eggs or larvae on it.	True. This is the most common way pantry pest invasions occur.
5. Sealed plastic, foil and cardboard containers will prevent infestation of pantry pests. Once the packages are open, they may allow pests to enter.	False. Insects can chew through packaging materials on unopened packages.
6. Placing packaged foods in the freezer for 3-4 days will destroy pantry pests. (eggs, larvae and pupa and adult).	True. Freezing will destroy the pests, including the adults, their eggs and larvae in foods. Be sure to wrap foods well before freezing so that the food does not absorb moisture or flavors from other frozen foods. Grain products can be stored in a freezer.
7. If you find pantry pests in your cabinets, you should place an insecticide “bug bomb” in the cabinet and seal around the doors so the insects cannot escape.	False. Insecticides, including “bug bombs” should not be used around foods or in storage areas where food is located.