Pesticides and Alternatives to Pest Control

Objectives:

• Be familiar with different pesticides that may be found in the home and how to minimize poisonings and exposure.

• Understand the role of integrated pest management as a system and set of tools for pest control.

Pests & Pesticides in the Home
Pests in the Urban Environment

Issues with Pests
- Trigger/cause asthma and allergies
- Bites
- Contaminate food
- Stress and embarrassment
- Transmit disease
- Hitchhike in belongings
- Violate some housing codes
- Structural damage
- Decrease in property value

Pesticides
A pesticide is any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest.

Are all pesticides harmful?

No. There are over 1100 different active ingredients. They vary widely from highly toxic to virtually non-toxic to humans. The way in which a pesticide is used will also influence its risk level.
Why do people tolerate exposure to pests & pesticides?

• They are used to living with problems
• Low standards for pest control and maintenance
• Other priorities & socioeconomic factors
• Not aware of the problems
• Cannot envision a better way

Insect Repellants

DEET is a common and effective mosquito repellent. DEET > 30% should not be used on children. DEET should not be placed directly on the face or on the hands of children. Repeated applications may not be necessary (see product label).

Several newer repellents are now on the market that can repel mosquitoes and ticks. Public health agencies recommend not using sunscreen + repellent formulations.

Mothballs

People misuse mothballs as a way to repel many animals and other pests. Mothballs are often placed illegally in wall voids, crawl spaces, trash containers, cars and attic spaces. Mothballs must be used in a sealed, airtight container.

Naphthalene can persist in indoor air for months. It can result in headaches, difficulty breathing and stress. Furthermore, loose mothballs can be ingested by children.
Antimicrobials

Many people do not recognize that antimicrobial agents are pesticides. These include bleach, swimming pool chemicals and toilet bowl sanitizers. These products are used to control, sanitize, disinfect or sterilize pests such as molds, bacteria, algae and microbes.

Some antimicrobial agents can be quite toxic if ingested. Others are known to cause irritation to the skin upon contact. It is critical to store these products in places that are not accessible to children. Also, you should never mix different antimicrobial products.

Illegal Pesticides

Products without a pesticide label are illegal. Illegal sales should be reported to the Oregon Department of Agriculture.

Total release foggers (i.e. bug bombs)
Pesticide risk by application method

<table>
<thead>
<tr>
<th>Less risk of exposure</th>
<th>More risk of exposure</th>
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<tbody>
<tr>
<td>Tamper-resistant station</td>
<td>Gel bait in a crevice</td>
</tr>
<tr>
<td>Total release fogger</td>
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Pesticides and Children

Reported pesticide incidents are proportionally higher for young children (< age 5) for:

- **Rodenticides** (90% involve kids)
  - Child found playing (or eating) near a bait station
- **Borates** (82% involve kids)
  - Child crawling across floor treated with powder
- **Repellants** (68% involve kids)

Reducing Exposure: Inhalation

Leave during a treatment and ventilate well upon return

Store products outside the home

Turn off HVAC during indoor and outdoor applications

Minimize or avoid liquid/aerosol applications

Keep powders and dusts out of high traffic areas

If possible, do not treat the bedrooms
Reducing Exposure: Ingestion

When applying baits, granules and other products, do not place in areas accessible to children or pets.

Store pesticides (and other chemicals) in a locked unit, out of reach of children.

Never put a pesticide into anything but its original container. This is especially important for liquids.

Reducing Exposure: Dermal

Make sure product is dry.

Properly discard leaky materials.

Wear gloves and appropriate skin protection.

Close doors to rooms/closets/cabinets that do not need to be treated.

Do not apply products to clothing or bedding (unless specified on the label and intended for that purpose).

Alternatives to Pest Control
Integrated Pest Management (IPM)

- **Integrated**: Uses multiple approaches that work together.
- **Pest**: What the multiple approaches work to fight.
- **Management**: Use of the most economical means with the least possible risk to people, property, and the environment.

IPM involves identifying pests, preventing infestations through sanitary, cultural, mechanical controls and then control if needed (starts with less risky approaches first).

What every pests need

- Water
- Food
- Shelter

IPM offers the tools to deny access to water, food and shelter. In 2009, Oregon passed SB 637 that requires schools adopt IPM for pest control.
**Bed Bugs**

Over the past decade, bed bugs have resurfaced and are established in Oregon. Prevention is the best method to keep bed bugs from entering the home. Once inside, bed bugs are very difficult to control. Insecticides, heat treatment and fumigation are used to treat bed bugs with differing success.

A troublesome scenario is home owners that discharge too many foggers or use other chemical methods to try to rid themselves of these pests.

**Rodents**

Rodent control is intimately linked with sanitation. It is key to have food (human & pet), bird seed, other edible items inaccessible to rodents. Barrier exclusion is also critical, particularly for mice.

Once rodents are established, traps and baiting may be necessary. If using baits, think about children and pets. Another consideration is that dead rodents produce noxious odors, particularly if they die in wall voids.

**Roaches**

There are two major types of roaches in the U.S. Heavy infestations can cause allergies and exacerbate asthma. IPM control methods include barrier exclusion (caulking & screens), moisture control and sanitation.

Insect growth regulators can be effective against cockroaches and are not toxic to humans or pets. Traps can be effective as well. Be wary of ultrasonic devices – they lack evidence for controlling these pests.
Resources for Pesticides and Alternatives to Pest Control

National Pesticide Information Center
Toxicology, exposure, use information
www.npic.orst.edu, 800-858-7378 (PEST)

OSU Extension Services
Pest control recommendations
www.extension.oregonstate.edu

Integrated Plant Protection Center (IPPC)
IPM and alternatives to pest control information
www.ipmnet.org