INTEGRATED PEST MANAGEMENT IN EARLY CARE & EDUCATION PROGRAMS

ICEBREAKER QUESTIONS

1. What's your name?
2. What's the pest that bothers you the most?
3. What would you like to learn from today's workshop?

INTEGRATED PEST MANAGEMENT IN EARLY CARE & EDUCATION PROGRAMS

CALIFORNIA CHILDCARE HEALTH PROGRAM

California Environmental Protection Agency
dpr Department of Pesticide Regulation

UC IPM

UC Berkeley
Center for Environmental Research and Children's Health

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WHY ARE WE HERE TODAY?

Goal: To protect the health of children, staff and the environment

BY THE END OF TODAY, YOU WILL BE ABLE TO:

1. Identify the requirements for child care centers as specified in California's Healthy Schools Act.
2. Define what is a pest, what is a pesticide and what is integrated pest management.
3. Explain why children are vulnerable to the health risks of pesticides.
4. Describe the health effects for children and staff exposed to pesticides and common pests.

BY THE END OF TODAY, YOU WILL BE ABLE TO:

5. Develop and implement IPM policies and practices in your program.
6. Identify simple and inexpensive IPM methods to prevent or manage common pests.
7. Inspect your child care facility for the presence of pests or conditions that attract pests using the IPM Checklist.
8. Share IPM information and resources with staff and parents.

OVERVIEW

A. Healthy Schools Act

B. Background

- Pests
- Pesticides
- The health risks of pesticides to children & the environment

C. Integrated Pest Management

HEALTHY SCHOOLS ACT (HSA)

The HSA requires that all child care centers:

- **Keep records** about pesticide use;
- **Maintain a registry** of people to notify when pesticides are used;
- **Notify** parents and staff before pesticides are applied and
- **Post warning signs** in areas where pesticides will or have been applied.

HEALTHY SCHOOLS ACT (II)

The HSA encourages centers to:

Use IPM methods

- Keep pests out!
- Remove their access to food, water and shelter

Use HSA exempt pesticides

- bait stations
- gel/paste in cracks/crevices
- exempt materials (e.g. mint oil)
- cleaners/sanitizers

AVOID use of nonexempt pesticides

- sprays
- foggers

WHAT DOES THE HSA REQUIRE?

Property Owners

If the owner of a property where a child care center is located uses pesticides, they must provide written notice to the ECE center at least 120 hours before they apply a pesticide.

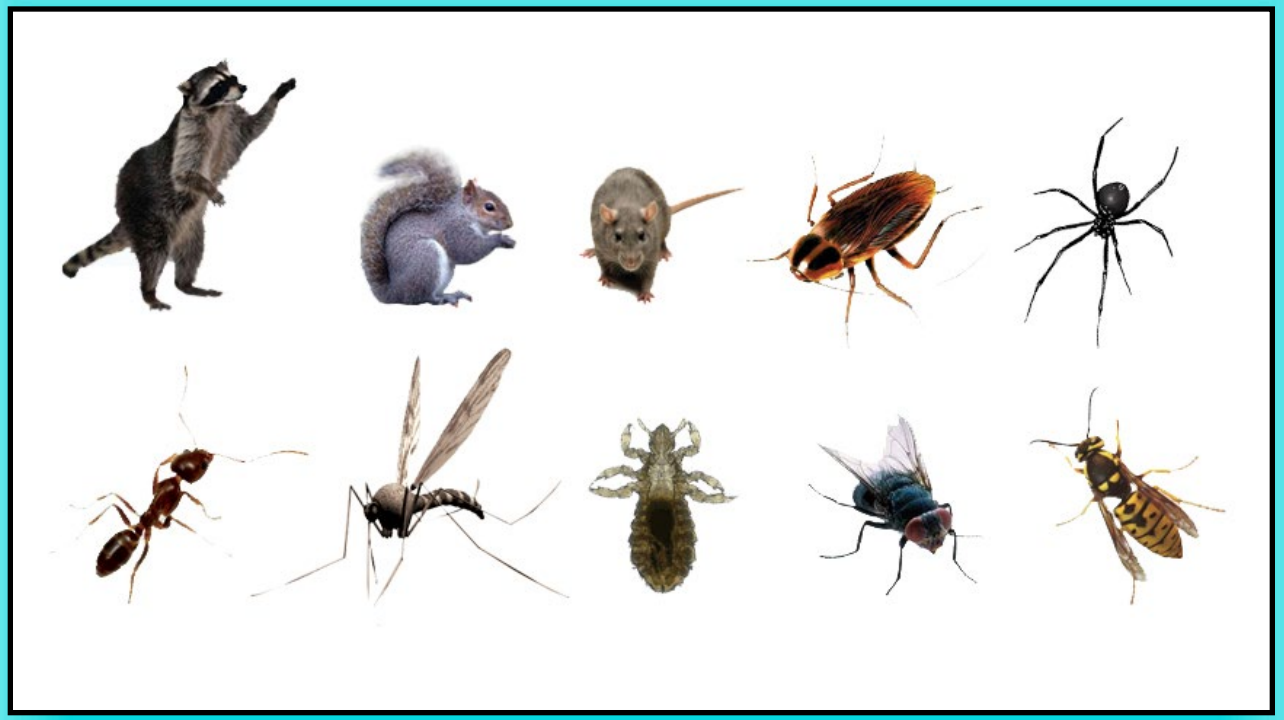
Pest Management Professional (PMP)

If a **child care center hires a PMP**, the staff must inform the PMP that the facility must comply with the Healthy Schools Act. The PMP must notify the center 120 hours before applying nonexempt pesticides.

If a **property owner hires a PMP**, the property owner must notify the PMP that a child care facility is present on the property.

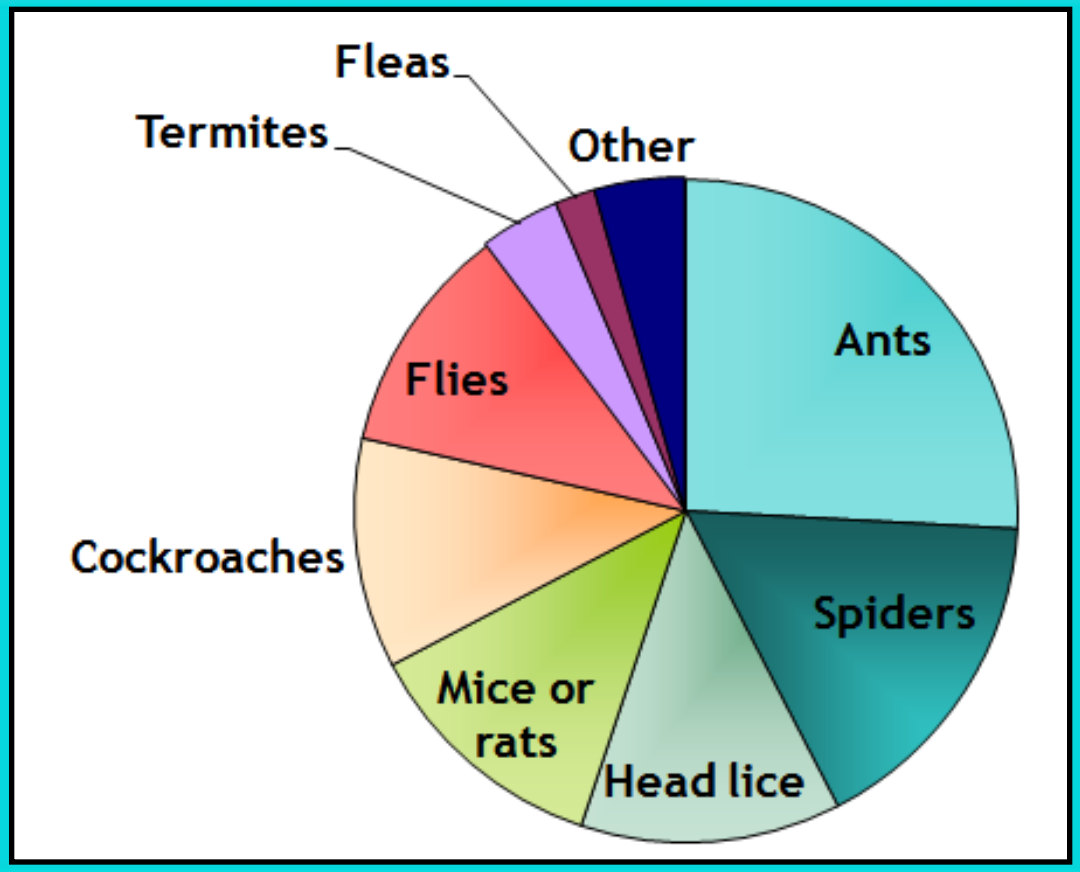
For complete list of your responsibilities, see CCHP Health and Safety Note on the Healthy Schools Act.

WHAT IS A PEST?



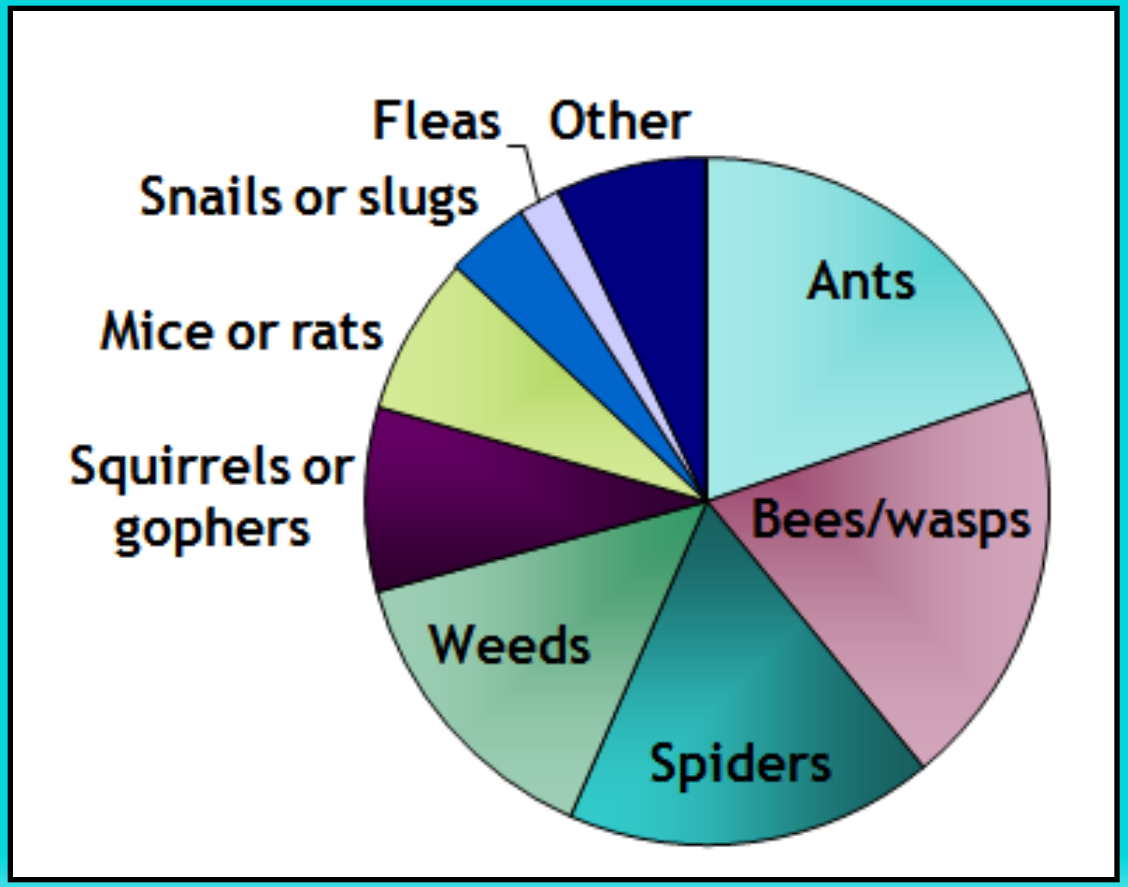
A pest is any living organism that causes damage or discomfort, or transmits or produces disease.

WHAT ARE THE MOST COMMON **INDOOR** PESTS IN CALIFORNIA CHILD CARE CENTERS?



Bradman, A. , Dobson, C., Leonard, V. & Messenger, B. (2010). *Pest Management and Pesticide Use in California Child Care Centers, Center for Children's* Environmental Health Research, School of Public Health, UC Berkeley at apps.cdpr.ca.gov/schoolipm/childcare/pest_mgt_childcare.pdf.

WHAT ARE THE MOST COMMON **OUTDOOR** PESTS IN CALIFORNIA CHILD CARE CENTERS?



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WHAT PROBLEMS DO PESTS CAUSE?

Health Problems

Building Damage

Parents & staff are upset when they see pests

Spread Bacteria

Allergies

Trigger Asthma

Rats Eat Wires

Mold & Termites Damage Building

WHAT ARE PESTICIDES?

Examples:
- Roach and ant spray
- Flea bombs
- Rat poison
- Weed killer
- Mothballs
- Insecticide chalk

Pesticides are **poisons** that are designed to kill or control living things.

CONCERNS ABOUT PESTICIDE-USE

Health Outcomes

Vulnerable Populations

Environmental Damage

Pest Resistance

Immediate
- Flu-like symptoms
- Skin Rash
- Breathing problems

www.toxicsoy.org/toxicsoy/news/Artikelen/2009/7/1_Girl_suffering_from_pesticide_poisoning.html

Long-Term
- Asthma
- Cancer
- Damage to brain and nervous system
- Immune system damage
- Endocrine disruption

E A Guillette, M M Meza, M G Aquilar, A D Soto, and I E Garcia, (1998), An anthropological approach to the evaluation of preschool children exposed to pesticides in Mexico. *Environ Health Perspect.*,106(6)

CONCERNS ABOUT PESTICIDE-USE

Health Outcomes

Vulnerable Populations

- Children
- Pregnant women
- Elderly
- People with breathing or lung disorders

Environmental Damage

Pest Resistance

CONCERNS ABOUT PESTICIDE-USE

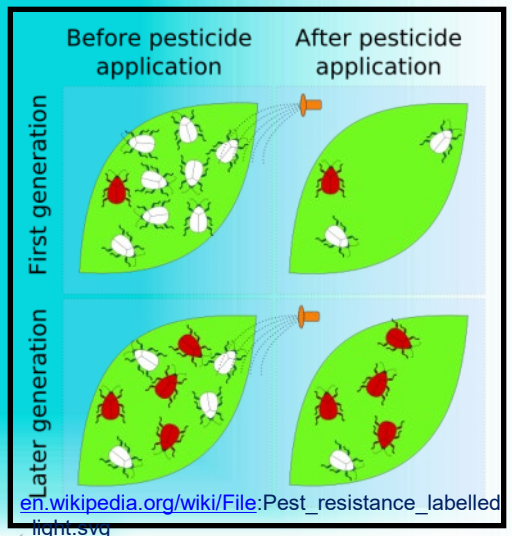
- **Health Outcomes**
- **Vulnerable Populations**
- **Environmental Damage**
  - Ground & surface water contamination
  - Poisoning of aquatic animals

- **Pest Resistance**

CONCERNS ABOUT PESTICIDE-USE

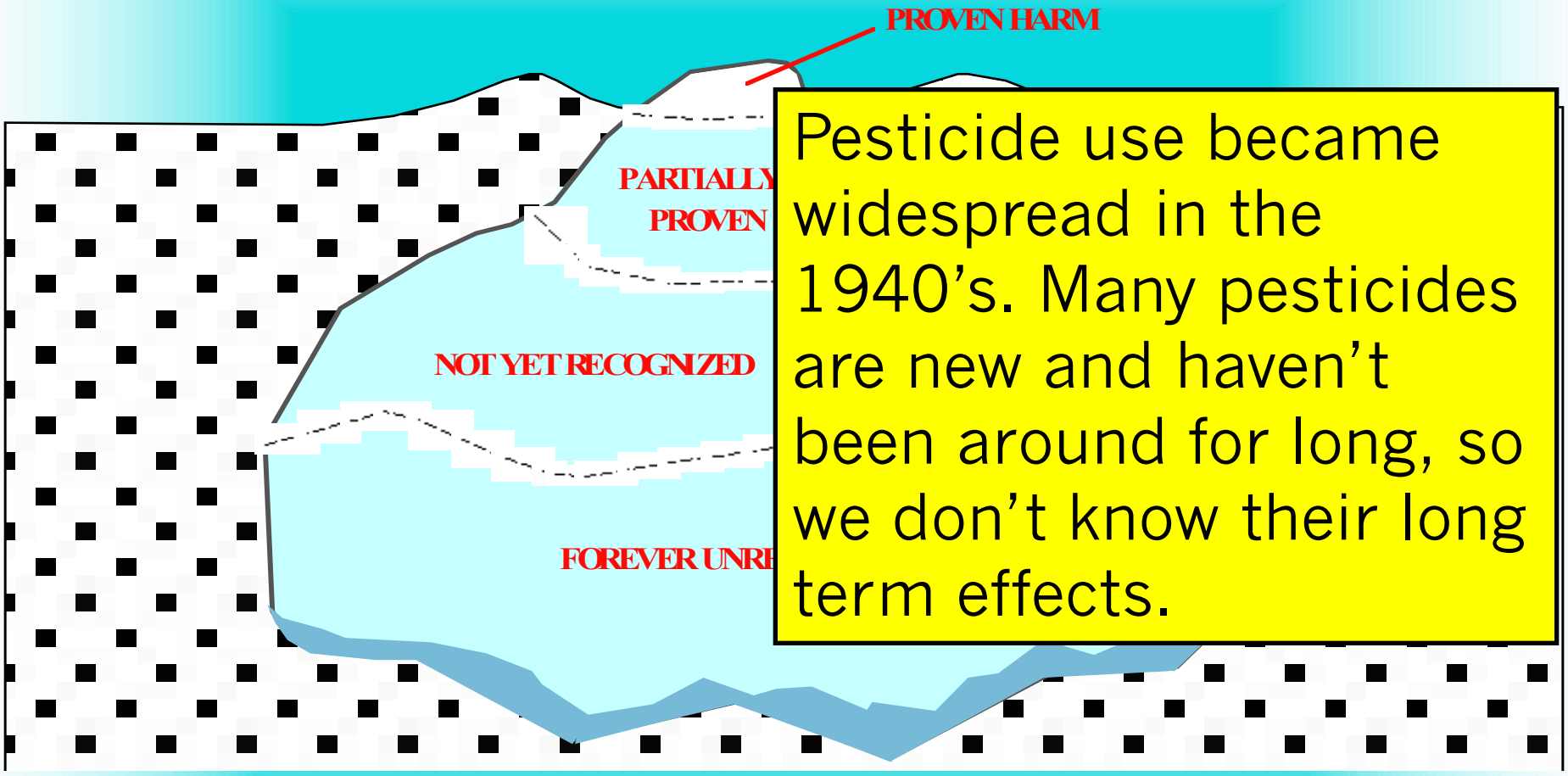
- **Health Outcomes**
- **Vulnerable Populations**
- **Environmental Damage**
- **Pest Resistance**

• **Pests can become resistant**



en.wikipedia.org/wiki/File:Pest_resistance_labelled_light.svg

WHAT WE KNOW ABOUT LONG TERM EFFECTS OF PESTICIDES



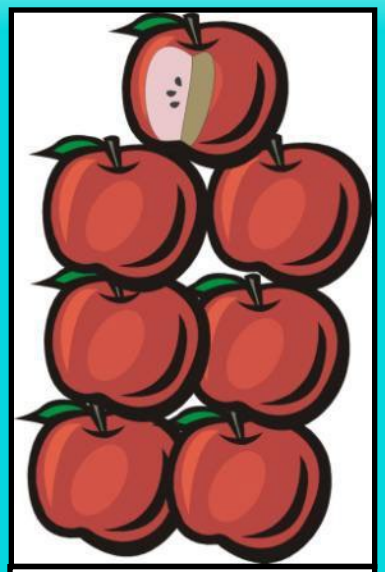
Pesticide use became widespread in the 1940's. Many pesticides are new and haven't been around for long, so we don't know their long term effects.

Physicians for Social Responsibility, Los Angeles:
Physicians for Social Responsibility, Los Angeles (2003) *In Harm's Way at* www.psr-la.org/in-harms-way/

WHY ARE CHILDREN MORE VULNERABLE?

1. Higher exposures

- Frequent contact with the ground or floor, where pesticides collect
- Hand-to-mouth activity
- Less varied diet
- Eat, drink, and breathe more per kg
- Spend most of their time indoors



child

vs.

adult

The average child eats **6.9** times more apples per day than an adult.

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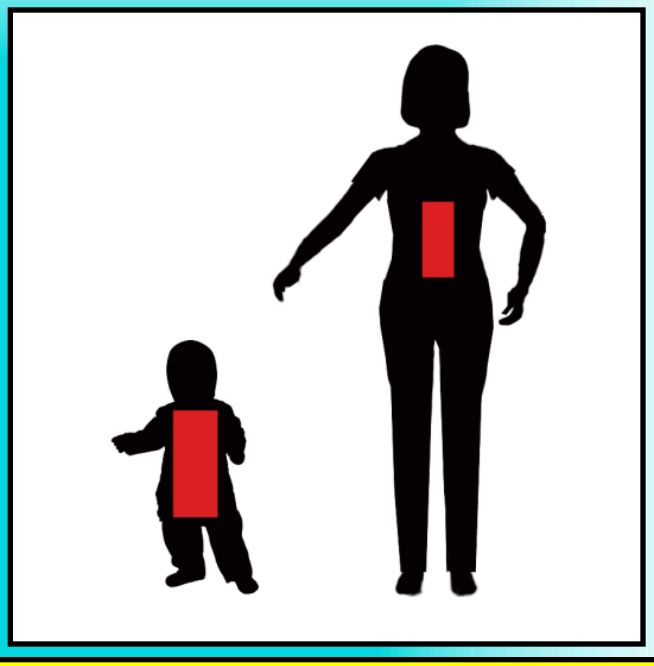


If a pesticide is present in air, food or water, a greater amount will be taken in by a child in proportion to their body size or weight than by an adult.

WHY ARE CHILDREN MORE VULNERABLE?

2. Metabolism

- Metabolic pathways undeveloped
- Reactivity to environment not yet in place

3. Don't recognize hazards

- Can't read labels
- Get into everything

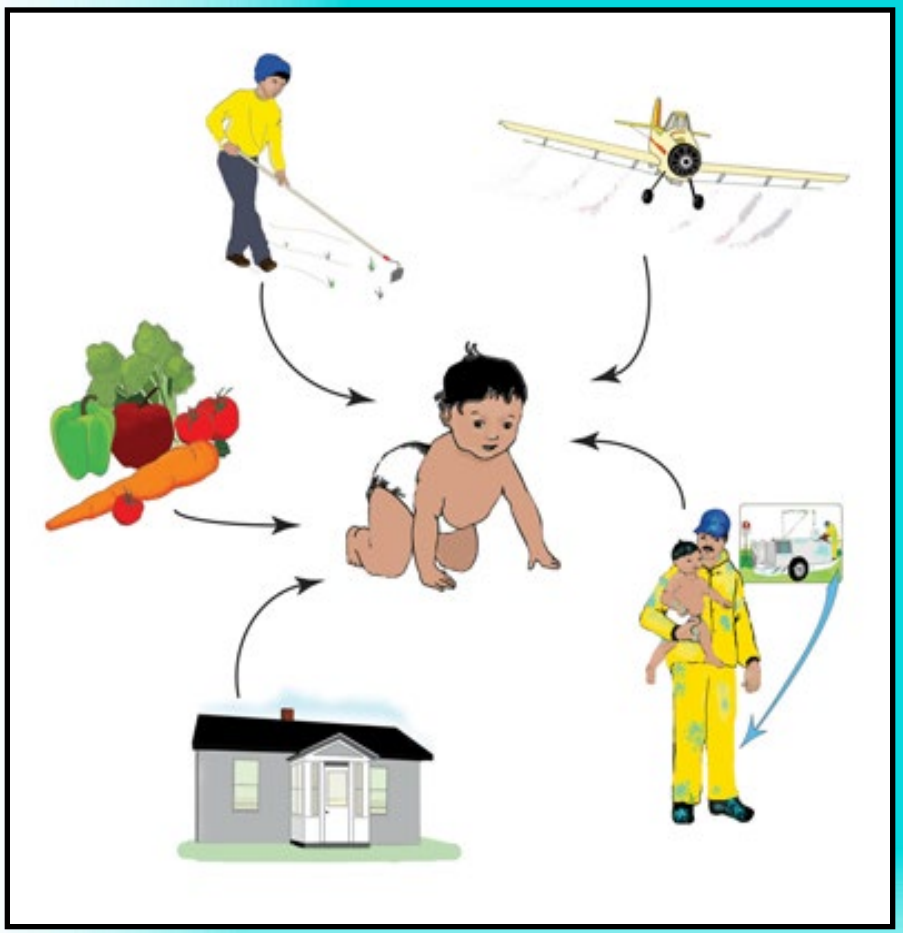
In 2008, United States Poison Control Centers reported 43,526 cases of possible pesticide poisoning in children younger than six.

Bronstein, A. C., Spyker, D. A., Cantilena, L. R., Green, J. L., Rumack, B. H., & Giffin, S. L. (2009). 2008 Annual Report of the American Association of Poison Control Centers'™ National Poison Data System (NPDS): 26th Annual Report. *Clinical Toxicology, 47(10), 911-1084.*

WHERE ARE PESTICIDES FOUND?

Sanborn et al. Identifying and Managing Adverse Environmental Health Effects: 4 Pesticides. CMAJ May 28, 2002: 166 (11): 1431-1436

WHAT ARE THE PATHWAYS OF EXPOSURE FOR CHILDREN?



1. By eating
2. By breathing
3. Through skin
4. Across the placenta (in the womb)

HOW COMMON IS PESTICIDE-USE?

California Child Care Pest Management Survey	
Pest problem present	
Using any pesticides	
Using spray or fogger	
Using at least one IPM approach	
Aware of IPM	

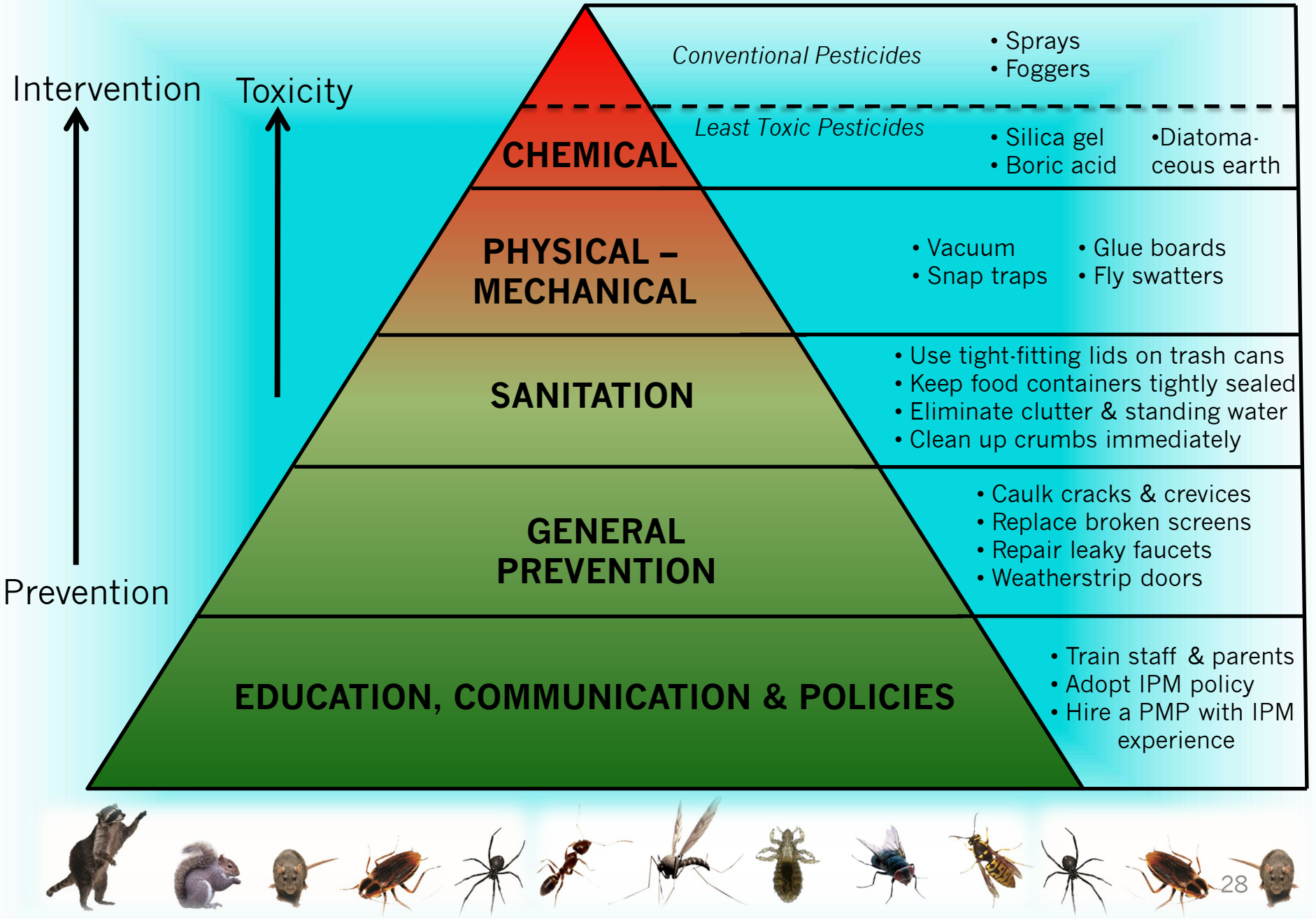
Bradman, A. , Dobson, C., Leonard, V. & Messenger, B. (2010). *Pest Management and Pesticide Use in California Child Care Centers, Center for Children' s* Environmental Health Research, School of Public Health, UC Berkeley at apps.cdpr.ca.gov/schoolipm/childcare/pest_mgt_childcare.pdf.

WHAT IS INTEGRATED PEST MANAGEMENT (IPM)?

A "common-sense" approach to:

- **Preventing pest problems** by
  1. keeping pests out and
  2. getting rid of their food, water and shelter.

- **Managing pest problems** by
  1. using non-chemical approaches;
  2. using least-toxic pesticides when necessary and
  3. reducing the use of harmful pesticide.

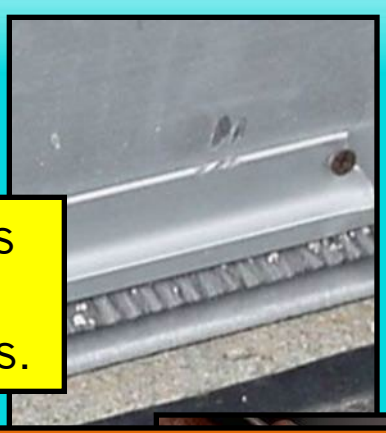

Intervention
Toxicity
Prevention
Conventional Pesticides
• Sprays
• Foggers
CHEMICAL
Least Toxic Pesticides
• Silica gel
• Boric acid
•Diatoma-ceous earth
PHYSICAL – MECHANICAL
• Vacuum
• Snap traps
• Glue boards
• Fly swatters
SANITATION
• Use tight-fitting lids on trash cans
• Keep food containers tightly sealed
• Eliminate clutter & standing water
• Clean up crumbs immediately
GENERAL PREVENTION
• Caulk cracks & crevices
• Replace broken screens
• Repair leaky faucets
• Weatherstrip doors
EDUCATION, COMMUNICATION & POLICIES
• Train staff & parents
• Adopt IPM policy
• Hire a PMP with IPM experience

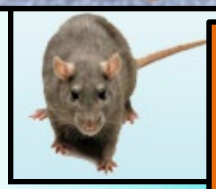
IPM NUTS & BOLTS

1. **Prevention**
   - Keep Pests Out
   - Remove Pest's Food, Water & Shelter
2. **Inspect** and **Monitor**
3. **Identify** Pests
4. **Manage** Existing Problems

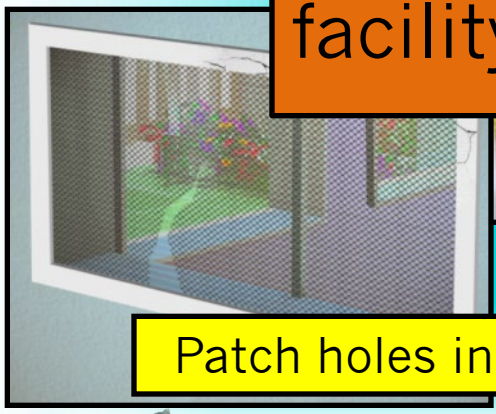
PREVENTION: KEEP PESTS OUT

Seal or block gaps around doors. Install doorsweeps.





Take home message: Close off entryways so pests can't get into your facility in the first place!

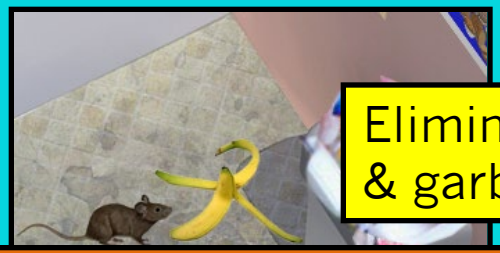


Seal gaps around pipes

Patch holes in screens

PREVENTION: REMOVE PESTS' FOOD & WATER

Clean up food before pests are attracted to leftovers



Eliminate sanitation & garbage problems

Take home message: Pests need food and water to survive. Take away their access to these things, and you're taking away their diet!

Eliminate standing water, clogged sinks & leaking faucets

Store food & art supplies in sealed containers

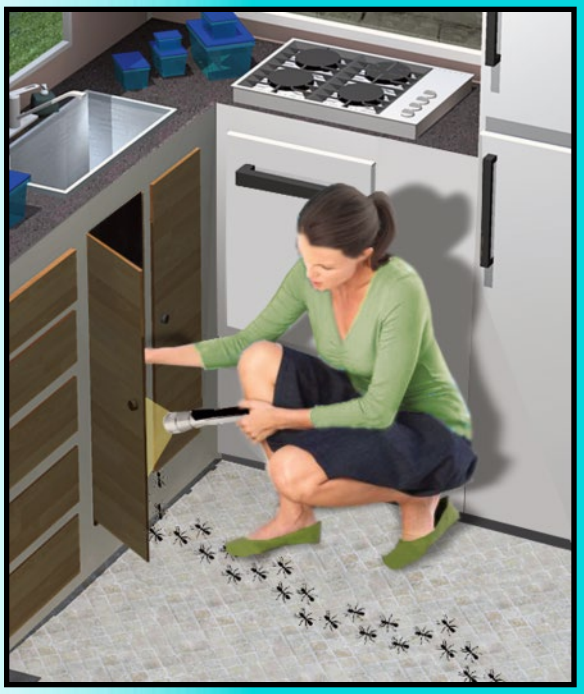
PREVENTION: REMOVE PESTS' SHELTER

Replace cardboard boxes with plastic containers with lids

Take Home Message: Without shelter, pests will pack their bags and find a new home outside of your ECE facility.

Organize! Clutter provides hiding spots for pests and covers up their evidence

INSPECTION

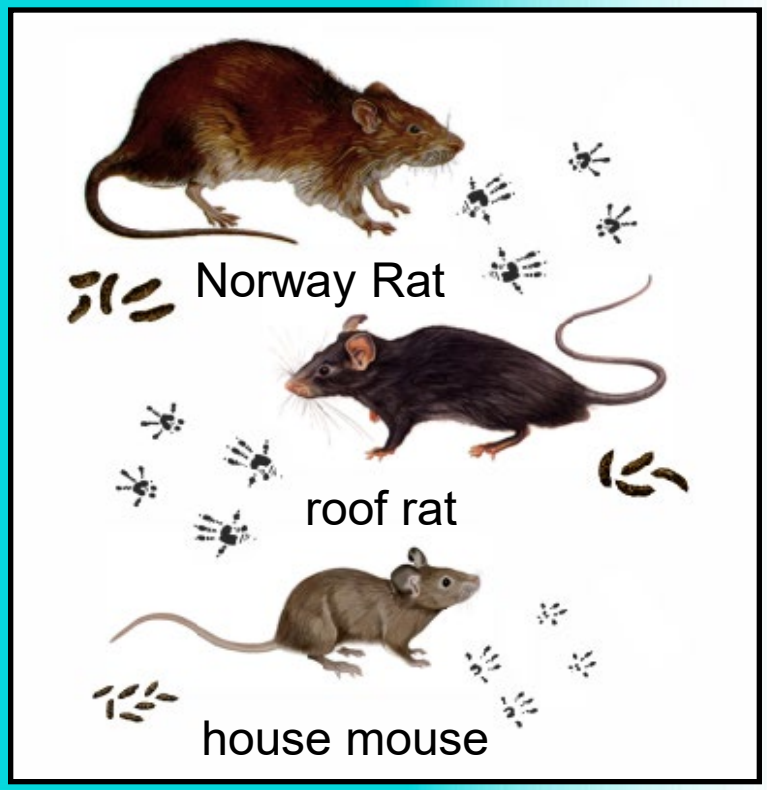


Use the IPM Checklist to look for:

- pests
- signs of pests and their damage and
- conditions that might attract pests.

IDENTIFICATION

- The next step is to identify what kind of pest you have.
- Use Health & Safety Notes to understand pests' lifecycle, food and shelter.
- The statewide IPM program is a great resource: http://www.ipm.ucdavis.edu



MONITORING

- Regularly inspect the facility for pests and pest damage.
- Identify sources of food, water ar
might a
- Identify
living and breeding.
- Determine if and when treatment is needed.
- Assess whether current actions are working.

Take Home Message: Monitoring is an ongoing process!

http://ipcm.wisc.edu/Portals/0/Blog/Files/19/199/sticky%20trap.JPG

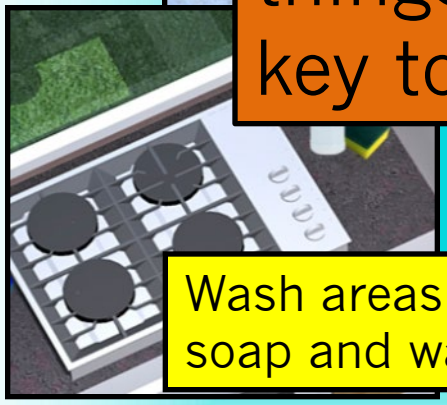
MANAGEMENT

Often you can manage pests without using chemicals. IPM-recommended techniques include:

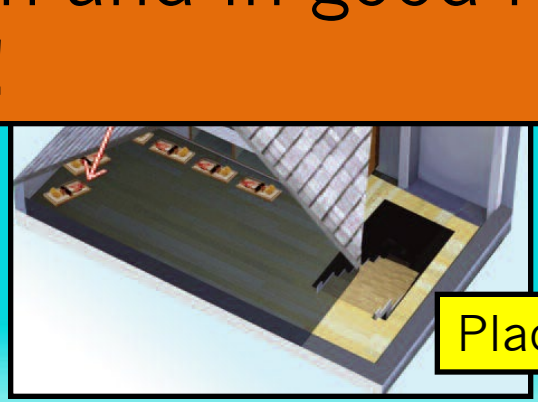
Prevention

Vacuum to remove pests

Take Home Message: Keeping things clean and in good repair is key to IPM!



Wash areas with soap and water



Place traps

http://reviews.walgreens.com/2001/prod3447245/koolatron-mini-bug-vacuum-1ea-reviews/reviews.htm

MANAGEMENT: CHOOSING THE LEAST-RISK PESTICIDE

Less risk of exposure ⟷ **More risk of exposure**

Tamper-resistant bait station

Gel bait in a crevice

…s & sprays that broadcast pesticides

Take Home Message: Use pesticides as a last resort! If needed, choose the least-risk application methods.

Exempt

Nonexempt

IMPLEMENTING IPM IN YOUR CENTER

1. Write an IPM policy.
2. Designate an IPM Coordinator.
3. Provide training for staff and parents.
4. Obtain information for any outside contractors.
5. If needed, hire a PMP that has IPM experience and knows about the HS A requirements.

IMPLEMENTING IPM IN YOUR CENTER

6. If you have a pest problem, inspect buildings and grounds for sources of infestations and contributing conditions.

7. Establish pest monitoring procedures.

8. Identify any pests found and create an IPM Action Plan for each pest you find in your environment.

9. Establish record keeping.

10. Evaluate the program on a regular basis.

HOW TO HIRE A PMP

1) Identify a PMP with experience in ECE facilities.
2) Call several PMPs and ask specifically if they are aware of the Healthy Schools Act and practice IPM.
3) Ask what services are included in the PMP's IPM approach.
4) Confirm that the PMP understands which services require an ECE director's explicit permission.
5) Ask whether they use indoor or outdoor sprays.
6) Ask about the qualifications, training and experience of anyone who will work on your site.
7) Ask for references from other clients.

If you already have a PMP, talk with him to make sure he's using IPM methods.

SCENARIO

You enter a child care facility and note that there is evidence of mice and mold in the kitchen. The staff say that they can't get rid of them and ask you for suggestions. They don't want to spray pesticides around the children.

What would you suggest?

(Hint: think about access, food, water and shelter)

IPM NUTS & BOLTS

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   - Keep Pests Out
   - Remove Pest's Food, Water & Shelter
2. **Inspect** and **Monitor**
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ACKNOWLEDGEMENTS

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*some images from http://healthyhomescollaborative.org/

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RESOURCES

CALIFORNIA CHILDCARE HEALTH PROGRAM
www.ucsfchildcarehealth.org
- **Fact Sheets for Families**
www.ucsfchildcarehealth.org/html/pandr/factsheetsmain.htm
- **Health and Safety Notes**
www.ucsfchildcarehealth.org/html/pandr/hsnotesmain.htm
- **Forms**
www.ucsfchildcarehealth.org/html/pandr/formsmain.htm
- **Training Curricula**
www.ucsfchildcarehealth.org/html/pandr/trainingcurrmain.htm

AB 405 List of Pesticide Products Prohibited from Use in Schools
apps.cdpr.ca.gov/schoolipm/school_ipm_law/prohibited_prods.pdf

California Department of Pesticide Regulation Childcare IPM: Growing Up Green
www.cdpr.ca.gov/schoolipm/childcare

California Department of Pesticide Regulation. *Pest Prevention: Maintenance Practice and Facility Design*
apps.cdpr.ca.gov/schoolipm/managing_pests/71_pest_prevention.cfm

California laws and regulations on pesticide use
apps.cdpr.ca.gov/schoolipm/school_ipm_law/main.cfm

Collaborative on Health and the Environment, *EndocrineDisrupting Chemicals*
www.healthandenvironment.org/?module=uploads&func=download&fileId=773

Ecologo
www.ecologo.org

Ecowise
www.ecowise.com

EPA, Design for the Environment
www.epa.gov/dfe

RESOURCES (II)

EPA, *Integrated Pest Management for Schools: A How-to Manual*
www.epa.gov/opp00001/ipm/schoolipm

eXtension: *Pest Management In and Around Structures*
www.extension.org/urban%20integrated%20pest%20management

Green Seal
www.greenseal.org

Green Shield Certified
www.greenshieldcertified.org

GreenPro
www.certifiedgreenpro.org

IPM Institute of North America, Inc.
www.ipminstitute.org

Maryland Department of Agriculture, *Action Thresholds in School IPM Programs. Pesticide Regulation Section,* **Annapolis, MD.**
schoolipm.ifas.ufl.edu/tp.htm

National Pesticide Information Center
npic.orst.edu

National Pest Management Association (NPMA)
www.pestworld.org

Our Water, Our World
www.ourwaterourworld.org

Pest Control Operators of California
www.pcoc.org

The Safer Pest Control Project
www.spcpweb.org

University of California Statewide Integrated Pest Management Program
www.ipm.ucdavis.edu

US Pest Control Regulatory Agencies by State
www.pestnetwork.com/usagencies/bystate.html