

## 4. How Effective are Pest Control Alternatives?

- Objectives:
- To design and execute controlled experiments testing the efficacy of pest control alternatives.
  - To assist school maintenance staff in identifying practical alternatives to pesticides for common school pests.

### Activities:

- Meet** with your school maintenance staff to identify insect, weed or other “pests” common at your school.
- Rear** selected insect pests in the laboratory and design tests of treatment efficacy, or work with school staff to **find** designated kitchen, turf or garden test plots for monitoring of pest population responses to various treatment methods.
- Do** direct laboratory and field experiments testing the efficacy of pest control alternatives, including chemical, mechanical, biological or other methods. Use only “non-toxic” or “least-toxic” methods, not conventional chemical pesticides. Be very careful to follow label directions and wear gloves, masks and other protective clothing if registered pesticide products (e.g., boric acid baits or powders, diatomaceous earth, limonene) are used!
- Record** your results, write up a report, and present the report to your school maintenance staff.

### Resources:

- Cravats, Monroe. November 1983. Orange You Glad You Teach Botany? *The Science Teacher*. 50(8):50-54. Includes a recipe for a “homemade” insecticide for the school greenhouse.
- Beatty, Joseph. September 1986. Limonene - natural insecticide. *Journal of Chemical Education*. 63(9):768-9. Describes a Roseburg, Oregon high school project that isolated and tested the insecticidal properties of the oil extracted from lemon peel. [Note: Caution should be exercised if working with limonene.]
- Common Sense Pest Control*. Olkowski, Daar and Olkowski. 1990. 715 pgs. Available from the Bio-Integral Resource Center (BIRC), PO Box 7414, Berkeley, CA 94707, (510) 524-2567.
- Dan's Least-Toxic Home Pest Control*. Dan Stein. 1990. 87 pgs.
- Pest-by-pest alternatives factsheets are available from NCAP, PO Box 1393, Eugene, OR 97440, (541) 344-5044. (Factsheets are also on the Web at [www.pesticide.org/factsheets.html#alternatives](http://www.pesticide.org/factsheets.html#alternatives)).

### Pests and control methods to consider:

**Fleas**/light traps (try different color light bulbs, flickering vs. steady light; water vs. sticky paper trap); (try nematodes in yard and flea combing of pets at home);  
**Flies** (try different (non-pesticide) baits and trap designs);  
**Slugs**/alternate physical barriers (try sand, diatomaceous earth, sandpaper, herbs, many others);  
**Carpenter ants**/compare wood preferences and damage levels (try wet and dry wood, borate-treated wood, hardwood vs. soft);  
**Cockroaches** (try boric acid powders; baits; caulking);  
**Aphids**/natural predators or physical/cultural controls (try lacewings, lady beetles, water sprays, soaps);  
**Broadleaf weeds** or clover (try various watering, fertilization, aeration, and mowing practices; different grass varieties; soaps; corn gluten meal, hot water);  
**Root weevils** (try nematodes).

