

Least-Toxic PESTICIDES

INSECT CONTROL

Bacillus Thuringiensis (Kurstaki) [*Safer's BTK Biological Insecticide*]

- Contains a common species of soil bacteria, which produce spores and protein crystals that infect and kill caterpillars. Non-toxic to other insects, animals and people. Non-persistent, breaks down in a few days.
- Used on leaf-eating caterpillars in greenhouses, gardens, and ornamentals.
- Spray foliage while caterpillars are actively feeding; caterpillars stop feeding immediately but may not die for 2-5 days.

Horticultural (Supreme) Oils: Dormant And Summer Oils [*Green Earth, Safer's, Wilson's brands*]

- Contains highly refined petroleum oil, or canola oil; acts upon contact, by suffocation and by disrupting other physical processes; no residual effects.
- Dormant oil is for overwintering eggs of aphids, some moths, mealybugs, pear psylla, pear and rose slugs, scales, spider mites. Summer oil is for mealybugs, rust mites, scales, spider mites, whiteflies.
- Dormant oils used on deciduous woody plants after leaves drop, or before growth starts; summer oils on shrubs and trees in growing season.
- Always check labels for list of plants that cannot tolerate oil sprays.

Insecticidal Soap [*Safer's, Green Earth, Orgins brands; Safer's Trounce + pyrethrins*]

- Contains biodegradable fatty acids; acts upon contact against insects and mites; no residual effects.
- Used on aphids, earwigs, mealybugs, pear and roseslugs, psyllids, scales, spider mites, whiteflies and other insects; outdoors and indoors.
- Thorough spraying required; repeat applications may be necessary.
- Limit number of times soap applied to the same foliage as it can damage leaves. Phytotoxic to some plants (check labels).

Silicon Dioxide (Diatomaceous Earth) [*Chem-Free Insectigone; Green Earth Dio Bug and Slug Killer*]

- Contains ground up fossilised shells of diatoms mined from natural deposits.
- Acts upon contact against insects by causing them to dry up; kills most insects that contact it. Non-toxic to people, animals, birds, fish, earthworms.

- Long residual effects, if kept dry and not dispersed; best for structural pests, kills beneficial insects; limit use on outdoor plants to spot treatments.

Pyrethrins [*Safer's Trounce; End-All*]

- Active ingredients extracted from pyrethrum daisies; acts upon contact.
- Used on crawling and flying insects on plants, pets, in structures, indoors and outdoors. Non-persistent.
- Moderate toxicity, avoid inhalation or contact with skin and eyes; may cause allergic reactions in sensitive people. A last resort pesticide.

Prepared by L. A. Gilkeson; Oct. 2004

WEED CONTROL

Fatty Acid Herbicide [*Safer's Topgun; Safer's Superfast Patio Killer*]

- Naturally occurring fatty acid compound, acts on contact to kill foliage of most plants; non-residual.
- Controls annuals, provides suppression or top-kill of some perennials.
- Apply in spring or summer to actively growing weeds, less than 13 cm tall.
- Avoid spray drift on desirable plants

Acetic Acid Herbicide [*Ecoclear; President's Choice Weed Controller*]

- Contains the same naturally occurring acid as in vinegar; acts on contact to kill foliage; non-residual.
- Uses and timing the same as fatty acid herbicide (above).

Corn Gluten Meal Pre-emergent Herbicide [*TurfMaize*]

- Non-toxic, animal feed source; also sold as a natural fertilizer.
- Suppresses germination of seeds; registered to control dandelion and smooth crabgrass in lawns.
- Controls only germinating seeds, not established weeds; should not be used on new lawns until after the first mowing.

DISEASE CONTROL

Sulphur [*Later's, Wilson's, Green Earth, Green Cross, C-I-L brands; Safer's Defender*]

- Sulphur particles bind with spores to prevent germination; broad-spectrum control of fungi, also a miticide; no residual effects.
- Used on foliage for black knot, black spot, leaf spots, powdery mildew, rusts, apple and pear scab and others; also controls russet and rust mites.
- Use only on plants tolerant to sulphur or extreme injury may result (check labels).
- Low toxicity to mammals, bees, birds, but toxic to beneficial mites.

Lime Sulphur [*Later's, Green Earth, Green Cross, C-I-L* brands]

- Contains a calcium sulphur compound; controls fungi, also mites and some insects; no residual effects.
- Used as dormant spray or growing season spray for fungal diseases; also for scales, spider mites, rust mites, aphids, mealybugs, peach borers.
- Phytotoxic to most actively growing plants; use growing season spray only on plants listed on label and at the correct dilution.
- Moderate toxicity to mammals, bees, birds, toxic to beneficial mites.

SLUG CONTROL

Ferric Phosphate [*Safer's Slug and Snail Bait*]

- Contains a food-grade iron supplement, mixed in a pasta bait
- Metal ions cause slugs & snails to stop feeding, dry up and die in 3-6 days.
- Non-toxic to people, pets, birds, insects, earthworms and other wildlife
- Remains active for a week even in heavy rain
- Studies showed 85-100% kill of common slug species; use instead of metaldehyde, which is toxic to pets and wildlife; metaldehyde poisoning can be fatal to dogs.