

## CONTROL RECOMMENDATIONS FOR INSECTS FOR ORGANIC GARDENING

The State of Louisiana certifies organic gardeners through the Louisiana Department of Agriculture and Forestry (LDAF). If you desire to be a certified organic gardener please contact LDAF. Certified organic gardeners must follow the guidelines provided by LDAF. The following is taken from guidelines provided in January 1996. Please contact LDAF to be sure a product is approved for use. Gardeners who are not certified may also follow these guidelines.

Approved pest control products as of January 1996:

- Bacillus thuringiensis (B.t.)
- Beneficial organisms
  - algae
  - animals
  - bacteria
  - fungi
  - insects
  - nematodes
  - protozoa
  - viruses
- Biological controls (beneficial insects and diseases)
- Botanical, other: restricted to localized and cautious use because of non-selective action of botanicals.
- Boric acid: restricted to use on inedible plant parts.
- Bordeaux mixes (copper sulfate mixed with hydrated lime): mined ingredients preferred. Restricted use on soils and crops due to potential buildup of copper in soil.
- Copper: includes fixed copper groups that do not require a tolerance level set by federal agencies-hydroxides, basic sulfates, oxychloride and oxides. (See Bordeaux mixes)
- Copper sulfate (See Bordeaux mixes and copper).
- Deer and rabbit repellents: natural sources only.
- Diatomaceous earth
- Dormant oils: restricted to use as a spray on woody plants during the dormancy stage.
- Garlic
- Herbal preparations
- Hydrated lime: restricted to foliar application as a fungicide. See also controlled atmosphere lime under "Production Aids."
- Insect extracts ("bug juice")
- Lime sulfur: includes calcium polysulfid. Restricted to foliar application as a fungicide.
- Neem and neem extracts: restricted to localized and cautious use because of non-selective action of botanicals.
- Pheromones
- Pyrethrum: restricted to naturally occurring forms without synthetic additives.
- Quassia: restricted to localized and cautious use because of non-selective action of botanicals.
- Rotenone: restricted use on fields where toxicity to fish is not a problem. Restricted to localized and cautious use because of non-selective action of botanicals.
- Soaps
- Soap-based herbicides: restricted to labeled uses.
- Sodium bicarbonate (baking soda): allowed uses include disease control.
- Suffocating oils, petroleum-based: restricted to use on woody and perennial plants; allowed for both dormant and summer use.
- Sulfur (the synthetic analog of the natural element): foliar use as an insecticide or fungicide is allowed. Prohibited for post-harvest treatment of crops; prohibited for post-harvest treatment of crops.
- Summer oils (See Suffocating Oils)
- Sodium Fluoraluminate (Cryolite): mined source only; regulated use.
- Spinosad: comes from a soil-borne fungus. It kills insects slowly by affecting their nervous system and their ability to feed. It is effective on a wide variety of insects including caterpillars, thrips, flies, and some beetles. However, it is not effective on sucking insects. Spinosad has a long residual, but is considered to be safe for beneficial insects.

Prohibited products as of January 1996:

- Creosote
- Gypsum by-product
- Ionizing radiation
- Leather meal, leather tankage, and leather dust
- Nicotine concentrates
- All synthetically derived fertilizers and pesticides not specifically mentioned by name are prohibited.
- True Stop: 2/3 cups/gal, 8-10 ozs/4" diameter mound for vegetable and field crops on rangeland sod farms.

Read and follow directions on the insecticide label. Use insecticides only on vegetables for which they are labeled. Rotenone will kill beneficials, is highly toxic to fish, and moderately toxic to mammals. It is slow acting and has a residual of approximately one week. It kills beetles and sucking insects. Pyrethrum will kill lady beetles but has a very low toxicity to mammals. Pyrethrum will kill pests rapidly or not at all. It has a very short residual and should be sprayed directly on the pest. Pyrethrum kills beetles, caterpillars, and sucking insects. Insecticidal soaps are not very toxic to beneficials. Applications may be needed more frequently than once a week. Injury to plants may occur if they are used too frequently. Insecticidal soaps kill soft-bodied pests such as aphids, spider mites, and whiteflies. Bacillus thuringiensis (B.t.) is nontoxic to beneficials and mammals but has a residual of a few days. B.t. is effective against various caterpillars. Usually caterpillars quit feeding within an hour of eating B.t. However, they remain on the plant and do not die for a few days. Even though the caterpillars remain on the plant if they are not feeding an additional application is not needed. B.t. is most effective when caterpillars are young. Thus frequent scouting is important. Sulphur may be used to control mites, but if temperatures are high, sulphur may injure plants.

Many of the principles of integrated pest management will be helpful in managing pests in organic gardens. These may include keeping plants healthy, rotating crops, interplanting, intercropping, planting at times to escape pests, planting resistant varieties, controlling pests when they are young, scouting the garden twice a week, correctly identifying the pest problem, controlling weeds, destroying plants after harvest, hand picking and crushing pests, using barriers to keep pests off of plants, spraying plants with water to knock pests off, traps, and beneficial organisms.