

Effective and nontoxic products to zap pesky bugs.

The philosophy behind organic gardening is hardly new to MOTHER readers, who've known about the benefits for years. However, interest has grown markedly in the mainstream. Many are finally joining the organic movement in order to rebel against additives in food, chemicals in the soil and water, pollutants in the air, and the dangerous pesticides regularly sprayed. The balance of nature has been precariously disturbed as the number of good and necessary bugs has been diminished, and to make matters worse, many of the harmful insects have developed resistance to common pesticides. But there's good news...

Today's scientists are discovering more and more plants that produce natural bactericides, fungicides, and insecticides. In fact, many nontoxic household products are considered effective in the war against gardening pests. Below are the acceptable organic controls that gardeners find most effective today.

Household detergents: Mix these insecticides right in your kitchen.

1) USDA recommendation: Mix one teaspoon of liquid dishwashing detergent with one cup of vegetable oil. Shake vigorously to emulsify and add to a quart of tap water. Use at 10-day intervals as an all-purpose spray for white flies, spider mites, aphids, and various insects on carrots, celery, cucumbers, eggplants, peppers, and others. We've used it on evergreens and other ornamentals. Note: Test on a single plant first, because it may cause tip burn. This is a contact insecticide, so spray mix directly on the pest.

2) Liquid detergent-alcohol spray:

Mix one teaspoon of liquid dishwashing detergent plus one cup of rubbing alcohol in one quart of water. Test on a few leaves first to make sure no harm is done to sensitive plants. Spray top and bottom sides of leaves; or if plant is small and potted, invert it in a large pan of solution (holding soil ball securely) and gently swish back and forth. Repeat in seven days.

3) Liquid detergent-hot pepper spray:

Steep three tablespoons of dry, crushed hot pepper in 1/2 cup hot water (covered) for half an hour. Strain out the particles of peppers, and then mix solution with the liquid detergent formula mentioned above. Good for a number of insects on both indoor and outdoor plants. Note: Apply to plants outdoors. Do not use on windy days. Avoid breathing fumes, which can be irritating to nose and eyes. You can substitute hot Tabasco sauce or Louisiana hot sauce for hot pepper.

Pyrethrin: This natural insecticide derived from the pyrethrum plant (*Chrysanthemum cinerariaefolium*). Along with pyrethroid, its synthetic substitute, it is highly effective against a wide range of insects. Each should be used according to manufacturer's directions.

Lime sulfur: This old-timer, still used by both organic and nonorganic gardeners, is applied during the dormant period. Kills most species of mites as well as mite eggs and those of many other insects. Lime sulfur also has fungicidal value and can be used on fruit trees as well as ornamentals. Note: Lime sulfur applied to plants near the house will stain the paint. Apply cautiously near buildings.

Sabadilla: Made from seeds of a South American lily. Used for squash bugs and stink bugs. Irritating to eyes and lungs if care is not taken. Use according to manufacturer's directions.

Garlic and onions: Grind up raw onions or garlic into a puree. Soak in warm water overnight and strain. Liquid can be sprayed on roses, fruit trees, and flowers. Kills aphids and apple borers. Scrape off any loose bark on the trunk and swab liquid on. Many gardeners mix onion water and wood ashes and paste mixture on tree trunks.

Ryania: Made from ground stems and roots of a South American shrub. Controls European corn borer and other worms. See directions on container.

Tomato leaves, crushed: To avoid chemical sprays, try using crushed tomato leaves for leaf-spot diseases. Tomato leaves contain solanine, a chemical that has an inhibiting effect on black spot fungus. Grind two cups of leaves to a puree. Add five pints of water and one ounce of cornstarch. Keep refrigerated.

Tobacco water: Cigar and cigarette butts will kill worms in the soil of houseplants. Mix a solution of tobacco and water so that it is the color of brown tea; pour on the soil. Don't let anyone drink it by mistake! The solution kills fungus gnats, symphylids, centipedes, root lice, and other underground pests and it could kill you.

If you have aphids or other insects in your terrarium or dish garden, ask a friend who smokes to blow cigarette smoke into the glass and then seal the top. The smoke knocks plant lice for a loop.

Snuff: For tiny flies or worms in the soil of house plants, try sprinkling snuff on the surface. Note. Do not use homemade tobacco remedies on tomatoes, peppers, eggplants, and other members of the Solanum family. It could spread tobacco virus to these plants.

Retenone: An old remedy for killing Mexican bean beetles. It is produced from derris, a plant found in Central and South America. Kills aphids, thrips, and chewing insects on contact. Note: Toxic to fish and nesting birds.

Hot pepper: To discourage cats, dogs, many insect pests, and snails from munching, dust powdered hot pepper or a spray of hot pepper sauce on plants.

Oil and sulfur sprays: Petroleum oils (of organic derivation) have been used successfully for killing insects for over 200 years. Apply only on "hard" or woody plants. There are two types:

1) Dormant oil should be used only when plants are dormant ♦ in winter or early spring.

2) Summer oil should be used during the growing season and restricted to woody plants. Some oil sprays can be applied in either summer or winter.

Miscible oil sprays kill insects and eggs such as over-wintering leaf rollers and aphid and mite eggs. They also kill scale insects and adult mites. Dilute with water according to manufacturer's directions. The oils cause little or no harm to most beneficial insects, and resistance to sprays does not build up with oils.

Talcum powder: Effective against flea beetles and corn ear worm. Lightly dust leave surfaces after every rain.

Soaps as insecticides: Soapsuds are ideal for killing aphids. Many home gardeners prefer vegetable- or plant-based soaps as effective aphicides.

Rhubarb leaves: Boil one pound of chopped leaves in one quart of water for 30 minutes. Strain and use as a spray against aphids and other pests.

Garlic and red-pepper spray: Grind up a large bulb of garlic (or a large onion). Add one tablespoon of ground cayenne pepper and one quart of water. Steep for one hour. Strain liquid into a sprayer or watering can and refrigerate remainder in a tightly covered jar. It will be potent for several weeks, and is effective on all kinds of chewing and sucking insects.

Spearmint spray: Put into a blender one cup of chopped spearmint leaves, one cup of green onion tops, and 1/2 cup of chopped hot-red pepper. Add 1/2 cup of water to assist in blending. Pour solution into a gallon of water. Add 1/2 cup of liquid detergent (preferably lemon-scented). Dilute by adding 1/2 cup of mixture to a quart of plain tap water.

If the plant is small, dunk it in this solution, otherwise strain it and spray on. Effective on all chewing insects.