Bug-Wise

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The Bug-Wise newsletter focuses on insect problems affecting Mississippi homeowners and consumers. Its main goal is to provide extension clientele with timely information that will aid them in addressing insect related problems that affect their daily lives. There are about 15 issues a year, published on an irregular, as needed basis. Currently there are about 200 addresses on the mailing list, with County Extension Offices being the primary target audience.

We would like to expand the mailing list to include local businesses where employees routinely interact with the public on insect related questions. This would include such business as Co-Ops, nurseries, lawn and garden centers, etc. We would appreciate your assistance in making such businesses aware of the opportunity to receive this newsletter. Anyone who would like to receive Bug-Wise can do so by sending their name and address to: **Bug-Wise, Box 9775, Mississippi State, MS 39762**.

Insecticides for Use on Ornamental Plants in the Home Landscape: Although there are hundreds of different insecticide products labeled for use in the home landscape, there are only a few dozen different active ingredients. When purchasing insecticides for use in the home landscape, it is important to think in terms of active ingredient, rather than brand name. Brand names can be confusing, and even misleading. This section provides some general information about some of the more common insecticides available to homeowners today.

Use Insecticides Safely!: Before using any insecticide, always be sure to read the label carefully and follow all label directions regarding personal protection equipment and instructions for mixing and applying the product. The label is the law, and the use directions it specifies are designed for the safety of the applicator, the environment, and those using the area. Handle insecticides with the respect they deserve. They are poisons and excessive exposure can result in acute and/or chronic health problems.

Be Sure the Insecticide is Labeled for Use on the Plant(s) Being Treated: Some insecticides may actually cause injury, or phytotoxicity, to certain landscape plants. Before applying an insecticide to a particular species of plant, be sure to read the label and verify that the product is labeled for use on that particular species/variety.

Specific Insecticides for Use on Ornamental Plants in the Home Landscape
(Insecticides Suitable for Use By Organic Gardeners are listed in italics):

Acephate: Acephate is currently sold under the brand name Hi-Yield Acephate. It is also sold as Ortho Systemic Insect Killer, which is a premix that includes a miticide. Acephate is a systemic insecticide that is effective against sucking insects like aphids, whiteflies, scales, and lacebugs, as well as thrips, and many caterpillars and beetles.

Carbaryl: Carbaryl is most commonly sold under the brand name Sevin. This product has been a standard for home insect control for many years. It is effective against a wide range of pests and is labeled on many different plants. It is especially useful against many beetles. However, this product does have a tendency to flare spider mites (trigger population increases).

Malathion: Malathion is another long time standard insecticide. Like carbaryl, it controls a wide range of pests and is labeled on many different species of plants. It is especially useful for control of aphids, 'bugs', and certain beetles. Malathion can also be used to control spider mites, but it is important to apply two or more successive applications at 4 to 5 day intervals.

Disulfoton: Disulfoton is only available as a granule for soil application. It is a systemic insecticide that is absorbed by the roots and translocated through the plant. Disulfoton is useful against many sucking pests, such as aphids, lace bugs, and some scales, as well as thrips and some other insects. Bonide Systemic Granules and Bayer 2-in-1 Systemic Azalea, Camellia and Rhododendron Care are two common products that contain disulfoton.

Bt kurstaki: *Bacillus thuringiensis* is a bacteria that produces compounds that are toxic to certain insect species. There are different species and strains of this bacteria that produce different toxins. *Bt kurstaki* produces a compound that is toxic to certain caterpillars but has no effect on other insect species. Thuricide is one of the more common brand names under which this product is sold. It is most effective against leaf-feeding caterpillars, but is not effective against boring caterpillars, such as dogwood borer and pine tip moth. Bt is most effective against small larvae and attempts to control large caterpillars with Bt products may give disappointing results.

Imidacloprid: Imidacloprid is a systemic insecticide that has recently been labeled for use by homeowners. It is sold under the brand name Bayer Advanced Garden Tree and Shrub Insect Control, and, in this formulation, is applied as a soil drench around the roots or ornamental plants, rather than as a foliar spray. Imidacloprid is especially effective against sucking pests, such as aphids, whiteflies, soft scale, and lace bugs when applied as a soil drench. It is relatively slow acting, but often provides long-term control. Imidacloprid is also sold as a premix, in combination with cyfluthrin, for application as a foliar spray

Spinosad: Spinosad is a relatively new microbial insecticide that is very effective against most caterpillar pests. Two commonly available brand names that are labeled for use in the home landscape are: Monterey Garden Insect Spray and Fertilome Bore, Bagworm, Leafminer, and Tent Caterpillar Spray. Spinosad is very effective against most caterpillar pests, but it is not effective against most other types of insects. However, it is also effective against thrips and certain types of leafminers. Some formulations of spinosad are acceptable for use by organic gardeners.

Insecticidal Soap: Insecticidal soaps are potassium salts of fatty acids. They control insects that they contact by disrupting cell membranes. They are most effective against soft-bodied pests, such as aphids, mites and thrips. Direct contact with the pest is necessary in order to achieve control. Safer Insecticidal Soap is an example of one brand name. Many plants can be injured by insecticidal soaps. Be sure to read the label carefully before treating.

Neem Oil: Neem oil is a botanical product that is primarily useful against aphids, mites, whiteflies, and scale crawlers. It is labeled for use on most landscape plants and is sold under several brand names (Monterey 70% Neem Oil is one example). Thorough coverage of the pest is necessary in order to obtain control.

Horticultural Oils: Horticultural oils are highly refined parafinnic oils that are used to control scale insects, spider mites and other small insects. They work through contact activity. Horticultural oils may be applied as dormant sprays as well as during the growing season. However, be sure to read and follow the label carefully to avoid plant injury. Horticultural oils can be especially useful against infestations of hard to control armored scales. Commonly available brand names include Sun Spray Ultra-Fine Year Round Pesticidal Oil, Volck Oil Spray, and Fertilome Scalecide.

Rotenone: Rotenone is a botanical insecticide that is used primarily by organic gardeners. It is often sold as a 'premix' with pyrethrin. Bonide Liquid Rotenone-Pyrethrins Spray Concentrate is one example. It is labeled for use on certain ornamental plants and is useful in the control of aphids, certain beetles, and some caterpillar pests. Rotenone is moderately toxic to mammals.

Pyrethrin: Pyrethrin or pyrethrum is a botanical insecticide that is primarily used by organic gardeners. Monterey Bug Buster O is one common brand name. This insecticide provides rapid knock down of most insects, but insects often recover. Piperonyl butoxide (PBO) is often mixed with pyrethrin to act as a synergist. This increases the overall effectiveness, and helps prevent pests from recovering. Pyrethrin or pyrethrin + PBO is active against a wide range of insects and is labeled for use on most ornamental plants. However, its efficacy is limited by its very short residual activity.

Pyrethroids: The term 'pyrethroids' refers to a group of relatively new synthetic insecticides that are modeled after the botanical pyrethrum molecule. These products are effective against a wide range of insect pests and are used at very low rates. The following pyrethroid insecticides are currently labeled for use in the home landscape.

Permethrin: Permethrin is the oldest, and most common, of the pyrethroid insecticides. It is widely available and is sold under a large number of different brand names (Martin's Vegetables Plus, Bonide Eight Vegetable, Fruit and Flower Concentrate, and Hi-Yield 38 Plus, Turf, Termite, and Ornamental Spray are three examples). Permethrin is labeled for use on many different ornamental plants and is effective against a wide range of pests. Note, that permethrin is often confused with pyrethrin, however there are considerable differences in the overall effectiveness and residual control provided by these two insecticides.

Cyhalothrin: Lambda cyhalothrin is one of the newer pyrethroid insecticides. Triazicide Soil & Turf Insect Killer Concentrate is the most common brand name. It is effective against a number of different insect pests, and is labeled for use on most ornamental plants.

Cyfluthrin: Cyfluthrin is another relatively new pyrethroid insecticide. It is sold under the brand name of Bayer Advanced Garden Power Force Multi-Insect Killer Concentrate. Like cyhalothrin, it is effective against many different insect pests and is labeled for use on most landscape plants.

Esfenvalerate: Esfenvalerate is one of the older pyrethroid insecticides. It is labeled for use on many different ornamental plants and controls a wide range of insect pests. Two common brand names are Monterey Bug Buster and Ortho Bug-B-Gon Garden & Landscape Insect Killer Concentrate.

Insecticide Pre-mixes: A few products are sold as 'pre-mixes' of two different active ingredients. Two of the most common examples are listed below.

Acephate + fenbutatin-oxide: This product is sold as a premix of two different active ingredients under the brand name Ortho Systemic Insect Killer and is labeled for use on most woody and herbaceous ornamentals. However, be sure to read the label closely because there are some plants on which it cannot be used because of phytotoxicity. Acephate (originally sold as Orthene) is a systemic insecticide that is effective against a wide range of insect pests. Fenbutatin-oxide is a specific miticide. This product is especially useful against sucking pests, such as lace bugs, aphids, whiteflies, scale insects, and mites.

Cyfluthrin + Imidacloprid: This is a pre-mix sold under the brand name Bayer Advanced Garden Rose and Flower Spray, which is labeled for use as a foliar spray on most ornamental plants. Cyfluthrin is a pyrethroid insecticide that provides control of a wide range of insect pests. Imidacloprid is a systemic insecticide that is especially effective against sucking pests, such as scales, whiteflies, aphids, and lace bugs. Because of its broad label and the broad spectrum of insect pests controlled, this is a very useful product for control of insect pests in the home landscape. However, this product is not effective against spider mites.

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