Bug-Wise

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Pyrethroids: The term 'pyrethroid' refers to a group of synthetic insecticides that were developed by modeling and modifying the molecules of the naturally occurring pyrethrins produced by the pyrethrum daisy. In general, pyrethroids exhibit low toxicity to plants and have relatively low mammalian toxicity, but are highly active against a wide range of insects. Today there are dozens of different synthetic pyrethroid insecticides, many of which are now labeled for various 'homeowner' uses. In fact pyrethroids are rapidly replacing older, more familiar products, such as Diazinon and Dursban, in the 'homeowner' market, and those of us who make insecticide recommendations to homeowners need to be familiar with these products. Six of the pyrethroid insecticides that are most frequently sold in the homeowner market are briefly discussed below.

Permethrin - Permethrin is by far the most common of the pyrethroid insecticides sold for homeowner use. Because the patent has expired and it is no longer proprietary, permethrin is sold under literally dozens of brand names. Hi-Yield 38+ Turf, Termite, and Ornamental Insect Control and Martins Vegetable Plus are two examples. Depending on the label, permethrin can be used to control many different pests. Because it is labeled for use on most vegetables grown in the home garden, as well as on turf and ornamental plants, it is a useful product for serious gardeners to keep on hand.

Cyfluthrin – In the homeowner market cyfluthrin is sold under the Bayer Advanced label. Bayer Advanced Garden Power Force Multi Insect Killer is one example. Although cyfluthrin is labeled for use on most ornamental plants and on home lawns, it may only be used on a few specific vegetables. Cyfluthrin, sold under the brand name of Tempo, is also widely used by professional pest control companies for control of various indoor pests. Tempo is not readily available to homeowners, but Bayer does market a ready-to-use formulation of cyfluthrin for household pest control.

Cyhalothrin - The Spectracide company is positioning cyhalothrin, or lambda-cyhalothrin, as its replacement for diazinon. Triazicide Soil & Turf Insect Killer Concentrate is a liquid concentrate formulation of cyhalothrin, but there are ready-to-use and granular formulations as well. Like cyfluthrin, cyhalothrin has a broad label for use on turf and ornamental plants, but is labeled for use on only a few home vegetables.

Cypermethrin – Cypermethrin is primarily used for household pest control. Enforcer Overnight Pest Control Concentrate and Demon WP are two examples.

Deltamethrin – Deltamethrin is primarily used for indoor insect control. It is primarily sold to homeowners in pre-mixed, ready-to-use formulations. Enforcer Home Pest Control and Hi Yield Kill a Bug II Indoor Outdoor Spray are two examples. Deltamethrin is also available in dust formulations that can be used as a fire ant mound treatment (Terro Fire Ant Killer), a less odorous alternative to Orthene, or for household pest control (Terro Ant Dust).

Bifenthrin – Currently the primary use of bifenthrin in homeowner situations is as a granular applied insecticide for control of insects in lawns. Bifen Lawn & Perimeter Granules is one example. There are also a number of pre-mixed fertilizer products that contain bifenthrin.

Stink Bugs: Several different species of stink bugs occur in Mississippi vegetable gardens, but green stink bugs, southern green stink bugs, and brown stink bugs are the three species most commonly encountered. Adults of these brown or green, shield-shaped insects are approximately ½ inches long. The immatures, or nymphs, are similar in shape, but are wingless, and depending on the species, may have white and pink spots, or horizontal stripes. Both stages cause damage by feeding on fruit (tomatoes, okra pods, pea or bean seed) with their piercing-sucking mouthparts. The barrel-shaped eggs are attached to the leaves in clusters.

Curled, distorted okra pods are often the result of stink bug feeding. Tomatoes develop white or yellow, corky spots underneath the skin as a result of stink bug feeding and this damage imparts an off flavor to the fruit. Depending on the size of the seed when attacked, feeding on pea and bean seed may result in complete shriveling of the seed or cause sunken, 'stung' spots on the seed. This latter type of damage is often confused with that caused by cowpea curculio. Okra is seldom damaged extensively, but heavy infestations of stink bugs can cause serious damage to tomatoes, beans, and peas. Stink bugs also feed on corn, and can cause death of seedling plants or curled, 'cowhorned' ears. Although it is not uncommon to see individual examples of these two types of damage, it is uncommon for large numbers of plants or ears to be damaged in this manner. Stink bugs often build to high numbers on agricultural crops and other alternate hosts and move to gardens in late summer and fall. Heavy infestations are often encountered in fall peas and butter beans.

One non-insecticidal way to deal with stink bug problems is to plant peas, beans, and tomatoes early in order to avoid the high numbers of stink bugs that are common in late summer and fall. Hand picking of egg masses, and nymphs and adults can help slow population buildup in small plantings. However, when heavy populations of stink bugs occur on crops growing in late summer and fall, insecticide sprays are often the only way of obtaining control. Because adult stink bugs are continually moving from maturing crops at this time of year, it usually takes multiple insecticide treatments to maintain effective control. Insecticides recommended for control of stink bugs in home-grown peas and butter beans are listed in the following table. Pyrethrins are listed primarily for use in organic production. Because of their very short residual activity, pyrethrins are generally less effective than other treatments, but they will control insects that are directly contacted by the spray. These five products, as well as cyfluthrin (Bayer Advanced Garden Multi-Insect Killer) and cyhalothrin (Spectracide Triazicide Soil & Turf Insect Killer) are labeled for use on home-grown tomatoes. Additional products are available for control of stink bugs in commercially grown vegetables.

Insecticides For Control of Stink Bugs on Home-grown Beans and Southern peas

Insecticide	Brand Name (one example)
Carbaryl	Garden Tech Sevin Concentrate Bug Killer
Endosulfan	Thiodan
Permethrin	Martin's Vegetables Plus 10% Permethrin Concentrate
Malathion	Hi Yield Malathion Insect Spray
Pyrethrins	Monterey Take Down Garden Spray

This information is for educational and preliminary planning purposes only. Brand names mentioned in this publication are used as examples only. No endorsement of these products is intended. Other appropriately labeled products containing similar active ingredients should provide similar levels of control. Always read and follow the insecticide label.

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