Bug-Wise

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Imidacloprid: Insecticides such as malathion and Sevin have 'been around' for many years. These are old, familiar names and products. However, uses of these older organophosphate and carbamate insecticides are being restricted more each year and are being gradually replaced by newer insecticides that represent different classes of insecticide chemistry. It is important for those of us who are involved in making insecticide recommendations to become familiar with these new insecticides.

Imidacloprid (that's the 'common name' or active ingredient) is one of the newer insecticides to make its way to the 'homeowner market'. Actually, this insecticide has been in commercial use for a number of years and has many different labels and markets. In recent past years imidacloprid has been the most used insecticide in the world. In commercial ornamentals it is sold under the brand names Merit, Marathon II, or Admire, and has been available for a number of years. However it is only recently that imidacloprid has been made available in "homeowner labels". Some that are used in home horticulture are discussed below. Unlike many of the older insecticides, imidacloprid is still a proprietary active ingredient, so all of these are produced by the same manufacturer.

Bayer Advanced Garden Tree and Shrub Insect Control Concentrate: This formulation of imidacloprid is not applied as a spray, but rather as a soil drench. It is labeled for application around trees and shrubs, including pecans and certain fruit trees and is especially effective against many sucking pests, such as aphids, whiteflies, lace bugs, psyllids, and soft scales. This product also has activity against certain other pests, such as leaf beetles, certain boring beetles, thrips, and sawfly larvae. It is not effective against most caterpillar pests, nor is it effective against spider mites. In fact, this active ingredient can actually flare (cause a low population to increase to damaging levels) spider mite populations on some plants.

Because this product is applied as a drench, it can be a convenient way for homeowners to treat larger trees and shrubs for the pests against which it is effective. However, because it works systemically, the active ingredient must be taken up by the roots and transported through the plant to where the insects are feeding, it can take time for this product to work. In some cases it can take as long as a month or more to see the full benefits of an imidacloprid drench treatment, especially when treating pests such as scale insects. Also, it must be noted that while imidacloprid can be effective against many soft scales (that's the group that produces honeydew), it is only labeled for <u>suppression</u> of armored scales. Some examples of situations in which this imidacloprid drench treatment can be useful include: whiteflies on gardenias, lace bugs on azaleas, and soft scales on a number of plant species, as well as many others.

Bayer Advanced Garden Rose & Flower Insect Killer Concentrate: This product is actually a pre-mixed combination of imidacloprid and cyfluthrin, a pyrethroid insecticide that provides broad-spectrum insect control. As the name implies, this product is only available for use on ornamental plants: trees, shrubs, ground covers, evergreens, flowers and foliage plants. It is a liquid concentrate that must be mixed with water and applied as a foliar spray. Because of the quick acting, broad-spectrum control provided by the cyfluthrin and the longer term systemic activity provided by the imidacloprid, this is a useful product for controlling many insect pests on home ornamentals.

Bayer Advanced Lawn Season-Long Grub Control: Actually there are two different formulations of imidacloprid sold under this brand name. One is a ready-to-spread <u>granule</u> and the other is a <u>liquid concentrate</u> sold in a ready-to-use hose-end applicator. Both are packaged so that one package will treat 5000 square feet. As the name suggests, these products are intended primarily for control of white grubs in home lawns, but imidacloprid also controls newly hatched mole crickets, which is a plus for homeowners in the southern portion of the state. It is important to time treatments for grubs and mole crickets when newly hatched larvae or nymphs are present. This means that the mid-summer months, June and early July, are the optimum time for treating in most of Mississippi.

Millipedes: Recent rainy conditions have resulted in the migration and accumulation of large numbers of millipedes around many Mississippi homes. These are most commonly described as 'little hard brown worms with lots of legs'. These critters do not damage plants or attack people or pets, but they can cause a nuisance due to their sheer numbers. Homes near heavily wooded areas or low wet areas usually experience the highest numbers. This is because millipedes feed on decaying plant material and because their physiological design makes them highly susceptible to desiccation. They just can't conserve water within their bodies as well as most insects. This means that they are confined to moist areas. Thus wet, rainy periods result in mass migrations of millipedes for two reasons. First, this results in flooding of the low, moist areas where the millipedes were living and forces them to move to other locations, and second, it creates moist conditions that allow them to move about more freely. This susceptibility to desiccation is also why millipedes are normally seen moving about at night and in the very early morning, but are forced to seek shelter during the day.

When these heavy migrations of millipedes occur, they can create a nuisance by accumulating on carports and patios and invading homes. Normally, they die naturally once they encounter, and become trapped in, an excessively dry environment. So brooms and dustpans, or vacuum cleaners, are some of the more common treatments for this pest. In situations where millipedes are a persistent or routine problem, habitat modification can be helpful in reducing problems around the home. The first step is to identify the sites from which millipedes are coming and then take steps to reduce accumulations of organic matter and/or dry the area out. This could entail things such as minimizing thatch in lawns, minimizing mulch in flower beds, and/or turning mulch to dry it out, or removing debris that can harbor millipedes.

Insecticides are not really that useful in the management of this pest, because their efficacy is often overwhelmed by the large numbers that occur during heavy migrations, and because one still has to contend with the dead millipedes that accumulate in the treated zone. However, there are certain situations where perimeter treatments of insecticides applied around the outside perimeter of the house can be helpful. Some of the insecticides that are labeled for these type treatments are listed in the table below. In cases where migrating millipedes have to cross the lawn before reaching the home, labeled insecticides applied as broadcast treatments to the lawn may be helpful (See Extension Publication 2331, Control of Insect Pests in and Around the Home Lawn). However, the onset of hot, dry weather will have the greatest impact in eliminating concerns about this pest.

Perimeter Treatments Labeled for Control of Millipedes

Active Ingredient	Brand Name	Rate	Comments
Treatments Applied as Sprays			
Carbaryl (22.5% concentrate)	Sevin Concentrate Bug Killer	5 fl oz/gal	Apply as a perimeter treatment According to label directions
Lambda-cyhalothrin (0.5% concentrate)	Triazicide Soil & Turf Insect Killer	0.5 fl oz/gal	Apply as a perimeter treatment According to label directions
permethrin (38% concentrate)	Hi-Yield 38 Plus Turf, Termite & Ornamental Insect Concentrate	1.6 fl oz/gal	Apply as a perimeter treatment According to label directions
Treatments Applied as Granules			
Carbaryl (6.3% granules)	Ortho Bug-b-Gone Multi-Purpose Insect Killer	3 lbs/1000 sq ft	Apply as a perimeter treatment, and/or Apply as a broadcast lawn treatment Water lightly following application
Cyfluthrin (0.1% granules)	Bayer PowerForce Multi-Insect Killer Granules	2 – 3/1000 sq ft	Apply as a perimeter treatment, and/or Apply as a broadcast lawn treatment
lambda-cyhalothrin (0.04% granules)	Triazicide Soil & Turf Insect Killer Granules	2 lbs/1000 sq ft	Apply as a perimeter treatment, and/or Apply as a broadcast lawn treatment

The 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. This information is for educational and preliminary planning purposes only. Always read and follow the insecticide label.

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