

PRODUCTS

THE BIORATIONAL ARSENAL

■ *The following is a list of those biorational pesticides available to the landscape, golf and lawn care industries. Some, it should be remembered, are harmful to beneficial and non-target organisms. Use those products with caution.*

Bacillus thuringiensis is a bacterial pathogen for the control of many worms and caterpillars. The bacteria has no effect on humans, other vertebrates plants or other insects other than the larval stage of moths and butterflies.

Soaps can be effective on spider mites and soft-bodied insects such as aphids, mealybugs and whiteflies.

Potassium soap sprays, such as insecticidal soap are more effective than household soaps when three tablespoons are mixed in one gallon of water. Some plants may be susceptible to soaps. Test spray a few leaves and wait three to five days to spot burn.

Horticultural oils are effective controls for a few difficult pests like scales. The oil simply coats the insect and suffocates it. Oils can burn plants if applied during unfavorable temperatures

Some of the new highly-refined oils show less burn potential. Vegetable oils have been reported to control some insects.

The **Neem** tree is the source of Azadirachtin. It is a growth regulator, anti-feedant and repellent. It is not labeled for edible crops. It controls many insects, but may be hazardous to fish and aquatic organisms.

Nicotine is an alkaloid found in the

leaves of many species of plants, but is usually obtained commercially from tobacco. Relatively non-toxic to beneficial organisms, birds and bees. It is toxic to humans and should be handled with care. It biodegrades rapidly with little residual affect. Trade name: Black Leaf 40.

Cosma lacustac is a biological grasshopper control agent. A naturally-occurring disease protozoa formulate on a bran bait. consumption drops within 10 days, but grasshoppers live for more than 22 days. Effective against the American grasshopper, and most others, but no the Lubber grasshoppers.

Diatomaceous earth is a talc-like powder made from the silica remains of a class of marine algae.

Will also kill beneficial insects, such as bees and parasitic wasps. Not effective in humid weather.

Quassia is made from the bark of a Latin American tree; it kills aphids, sawflies and caterpillars.

Rotenone is a botanical insecticide which controls many species of insects including external parasites of animals like fleas and ticks. It is harmless to warm-blooded animals, but will kill beneficial insects and fish. Short lived, so repeat applications are needed.

Ryania is derived from the ryania shrub of South America. Reportedly safe to humans and other warm-blooded animals. Effective against worms, but is short lived. Is usually combined with rotenone and pyrethrum; sold as Triple Plus and R-50.

Sabadilla is made from the ground seeds of the sabadilla lily. It's reported to control a broad range of insect pests. It too is short lived, as are most botanical insecticides. Sabadilla dust and seed irritates the mucous membranes of humans and is toxic to honeybees.

Pyrethrum is made from the pyrethrum flower. It will control a vast array of insects pests. It is described as relatively non-toxic to ladybeetle larvae and honeybees. It is readily metabolized by warm-blooded organisms without lasting ill-effects. Some commercial products also contain non-natural ingredients. Pyrethroids are synthetic pyrethrins, which have longer lasting residues.

Beneficial nematodes attack cutworms, mole crickets, beetle larvae, wireworms and sod webworms, as well as other soil dwelling insects. A symbiotic bacteria inside the nematode parasitizes and kills pests within 48 hours. Beneficial nematodes are labeled for lawns, gardens and houseplants.

Commercially available nematodes include BioSafe, Scanmask and some improved strains.

Sticky traps, such as Tanglefoot and Stickem, are found at garden centers. A home made trap can be made with a shallow tray filled with beer and flour.

Apply at the trunk of plants. It can also be applied to yellow poster-board squares which are hung or placed near plants. Insect in the sticky trap.

Source: Newsletter of the Florida Landscape Maintenance Association, January 1993.

PRODUCTS

Product converts thatch to nourishing humus

Thatch Biodigest from Springfield, Virg.-based Envirogenesis, is described as a powerful collection of bacteria strains that aggressively break down thatch and convert it to humus.

The objective of biological thatch control is to accelerate the process of thatch decomposition. In a test conducted by the University of California at Edgewood Tahoe Golf Course, 300 Kentucky bluegrass and creeping bentgrass plugs were pulled and measured. Thatch levels extended three inches below the surface.

Six weekly treatments of Thatch Biodigest resulted in a 53 percent thatch reduction six months later. According to the company, its biotechnology concentrates naturally-occurring microorganisms to a level thousands of times greater than that normally found in nature. This results in a super-accelerated breakdown of thatch into humus.

Envirogenesis says Thatch Biodigest increases turf disease resistance and restores turf to a balanced ecosystem.

Circle No. 221 on Reader Inquiry Card

Biostimulants made to enhance plant growth

Damaged or stressed turf and landscape plants, or establishing turf and ornamentals can now be treated with applications of CytoGro and CytoFe, two new biostimulants from Plant BioTech, Inc., of Corrales, NM.

CytoGro is an EPA-registered hormone biostimulant designed to enhance the natural growth of grasses. CytoFe is a mix of CytoGro and 5 percent chelated iron, to promote root growth and green up.

PBT says that an early spring application will promote tiller, rhizome or stolon growth, and help develop a deep root system to give the turf a rapid start after winter. Newly-emerged seedlings sprayed with CytoGro will speed establishment and increase canopy development.

Research by Dr. Dick Schmitt of Virginia Polytechnic Institute has shown that CytoGro applied to bluegrass and other turf will relieve stress from irrigating with saline water by stimulating new root development and root system saline tolerance.

Circle No. 222 on Reader Inquiry Card

Grace, PJ Margo open neem processing plant

W.R. Grace & Co and PJ Margo Privat Limited of Karnataka, India, recently began what is being called the world's first commercial-scale facility to produce neem-based biopesticides.

Initial capacity of the plant is 20 tons of neem seed per day, according to Grace, which has provided the process technology for the project and will purchase product from the plant.

Extracts from the Indian neem tree include the biopesticide azadirachtin, which attacks and controls more than 200 types of insect pests as well as some species of mites and nematodes.

The neem-based extracts are harmless to birds, mammals and beneficial insects such as bees.

Grace-Sierra its neem-based biopesticides to horticulturists under the trademark Margosan-O. The biopesticide is also marketed under license from Grace through the Minneapolis-based Ringer Corp. to consumers under the trademark BioNeem.

Circle No. 223 on Reader Inquiry Card

LETTERS

■ Thank you for this added service! We want to keep an open mind about all products on the market, but at this time we see no need to make any changes.

We offer a non-pesticide program for both turf and ornamentals, but of over 1000 customers, only 15 or so want it; of those 15 there is a heavy turnover since the average time they can stand weeds or insects is the time it takes their neighbor's lawn to look better than theirs! Thanks for keeping us informed.

—Jon Hart, Greenturf, Gaithersburg, Md

■ How nice to find someone who thinks biologicals are for real.

I have controlled algae in my lakes for the past three years with microbes.

We have also applied microbes to our greens for disease control. And yes, it did take a very long time to show results. I have not applied a fungicide to our greens since July 20, 1992. The sad fact is that we can not prove that the microbes are reduc-

ing disease incidence. Good luck!

—Don Parsons, Old Ranch C.C., Seal Beach, Calif.

■ I have been in the lawn care business for eight years. The handwriting is definitely on the wall. If the industry is going to survive and grow, more natural products must be used, and applications will have to be "risk free," or nearly so.

I'm very pleased you're doing your part by providing more information.

—Jim Tiller, DeYoung Landscape Services, Grand Junction, Mich.

■ Thank you for "Bioturf News." Presently, I don't offer any "environmentally friendly" pest control. I've investigated some products and found they just wouldn't fit into my service line. I am interested in bio-control products and hope I can use them in the future. Please put me on your subscribers list.

—Steve Candelori, Specialized Landscape Services, Pittsboro, NC.

BIOTURF NEWS

For the professional landscaper, lawn care operator and golf course superintendent interested in learning more about how organic turf care can supplement existing chemical control.

Published at the offices of LANDSCAPE MANAGEMENT

Address comments to:
Terry McIver, editor
7500 Old Oak Blvd.,
Cleveland, OH 44130.

Jon Miducki, publisher
Terry McIver, editorial, layout
Michelle Therrien, graphic designer