

UFla. research sheds light on leaching of pesticides

By MIKE KENNA

If superintendents want to keep the nematicide Nemacur as a tool, they will need to plan carefully, according to research performed at the University of Florida Research Station.

The research, conducted by Drs. George Snyder and John Cisar and sponsored by the U.S. Golf Association, demonstrates a critical example from which we all can learn. Snyder and Cisar investigated the downward mobility (leaching) and persistence of several insecticides and nematicides applied to amended-sand putting greens established with Tifdwarf Bermudagrass.

Generally, less than 0.15 percent of the organophosphate insecticides was recovered in water which leached through the putting green plots. That is the good news. Unfortunately, a breakdown product, or metabolite of Nemacur (sulfoxide-sulfone) was found in relatively high amounts (17 percent of the total applied) after a November 1991 application.

This application was on a new green which had never received a Nemacur application. A second application, made January 1992, yielded only 1.1 percent of the Nemacur metabolite in water which leached through the putting green.

What happens to the Nemacur breakdown products? Snyder and Cisar suggest that microorganism populations shift or adjust to use the Nemacur and its metabolites as a source of food energy.

Previous research by other scientists in Florida suggests these microorganisms will persist for several years. Therefore, it is reasonable to assume that more rapid degradation of Nemacur and its breakdown products will occur with frequent, repeat applications.

Superintendents should plan carefully before applying Nemacur. Applications to putting greens should be given priority over tees and fairways. The sandy soil of many golf courses are an ideal habitat for many nematodes and we know this pest will not just go away. We need to provide a good agronomic environment for the turf, develop Integrated Pest Management (IPM) programs, scout the course for nematode "hot spots," and then, and only then, apply the product with several days of clear sunny weather ahead.

This research emphasizes the point that never before has the golf course superintendent's selection and application of pesticides been so important. In the

old days, the selection process was pretty much limited to identifying a product that would control the pest. With a wider selection of products in the 1960s and '70s, the cost of the product, as well as its efficacy, were considered when developing pest management programs.

In the 1980s, 10 years after the enactment of the Clean Water Act and establishment of the U.S. Environmental Protection



Agency, the selection process required environmental considerations. A thorough investigation of IPM principles associated with the pest problem is now needed.

A healthy plant produced through proper mowing, fertilization, irrigation, aerification, drainage, and enough sunlight

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ORGANOPHOSPHATE INSECTICIDE RECOVERED IN PERCOLATE WATER, EXPRESSED AS A PERCENT OF AMOUNT APPLIED

Table Name	Common Name	Dates Applied	Total Recovery (% of that applied in Percolate)
Nemacur	Fenamiphos	11/13/91	0.06
	Metabolites of fenamiphos	1/27/92	0.04
Dyfonate	Fonofos	11/13/91	17.69
		1/27/92	1.10
Dursban	Chlorpyrifos	11/13/91	<0.01
			0.02
Triumph	Isazofos	1/27/92	0.15
		4/21/92	0.08
Oftanol	Isufenfos	4/21/92	0.09
		9/15/92	0.02
Mocap	Ethoprop	4/21/92	0.02
		9/15/92	0.01
		9/15/92	0.05

1 Metabolites expressed as a percent of the parent compound applied.

A new twist to

A new 18-hp diesel engine powers higher-capacity hydraulic pumps in the new 2653A to deliver 33 percent more torque to the reels.



Dr. Michael Kenna is director of Green Section research for the United States Golf Association. He works out of Stillwater, Okla.

WHERE THEY'RE GOING

GCSAA President Grigg leaves Naples National for Royal Poinciana

NAPLES, Fla. — Gary Grigg, newly elected president of the Golf Course Superintendents Association of America, has left Naples National Golf Club to take the head superintendents position at nearby Royal Poinciana Golf Club here.



Gary Grigg

...
VAIL, Colo. — Kevin Ross, a member of the *Golf Course News* Editorial Advisory Board, has left Falmouth (Maine) Country Club to accept the head superintendent's position at the Nicklaus-designed Country Club of the Rockies here. Ross will be replaced by his longtime assistant at Falmouth, Scott Cybulski.

...
ORONO, Maine — Blayr

Crowley is the new head superintendent at Penobscot Valley Country Club here. A 1994 graduate of the Turfgrass Management program at the University of Massachusetts, Crowley cut his teeth as an assistant to Pat Lewis at Portland (Me.) Country Club.

...
VIRGINIA BEACH, Va. — Thom Charters has left Weston Golf & Country club to accept the head superintendent's job at

Bayview Country Club here. "I'm looking forward to it," said Charters. "A new irrigation system is to be installed and we'll be building a new maintenance facility."

...
BARHARBOR, Maine — Luke Gagne is the new superintendent at the historic Kebo Valley Club, replacing 19-year veteran Fred McPheeters. Gagne comes to Kebo from Waterville (Me.) Country Club, where he served

as Kyle Evans' assistant since 1989.

...
LIMESTONE, Maine — Craig Phair is the new superintendent at Inland Winds Golf Course, the track recently privatized here following the shutdown of Loring Air Force Base. Phair and pro Peter Weatherhead, both Limestone natives, are also managing the course after leasing it from the U.S. government.

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USGA publishes research findings for the industry

Two publications that summarize turfgrass benefits are now available from the United States Golf Association. These publications summarize information published by Drs. James B. Beard and R.L. Green in the *Journal of Environmental Quality* 23:452-460 (1994).

A 20-page technical summary titled "Golf and The Environment" is aimed at an audience with some technical background, including architects, superintendents, environmental engineers and consultants, and regulatory agency scientists. It contains a list of references related to benefits of turfgrass. Cost is \$2.

A four-page topical summary provides a non-technical overview, and will be useful in responding to inquiries from golfers, golf associations, allied associations, and media reporters. Cost is \$1.

To order these summaries, contact:

Dr. Kimberly Erusha, U.S. Golf Association, Golf House, P.O. Box 708, Far Hills, N.J. 07931-0708; or call 908-234-2300, ext. 5498.

Take note of pesticide tests

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will go a long way to reduce pest problems. However, golf courses are under a great deal of stress from low mowing, heavy play, poor light and poor water quality.

We need pesticides to help produce quality playing surfaces. But they are a tool among many in our agronomic tool box. Pesticides should not be a crutch supporting poor agronomic conditions which will never produce healthy turf.

Superintendents need to continue to educate golfers on sound agronomic principles, and golfers need to listen and make long-term plans to improve the health of their courses.