

NEW CHEMISTRY ROLL CALL

## What supers like, according to Green Section agronomists

By PETER BLAIS

United States Golf Association Green Section agronomists make thousands of annual visits to U.S. golf courses, putting them in a position to discuss with superintendents what new turf chemicals seem to be working and which need more work.

While forbidden from endorsing any specific item, a handful agreed to discuss products that are proving popular with golf course superintendents.

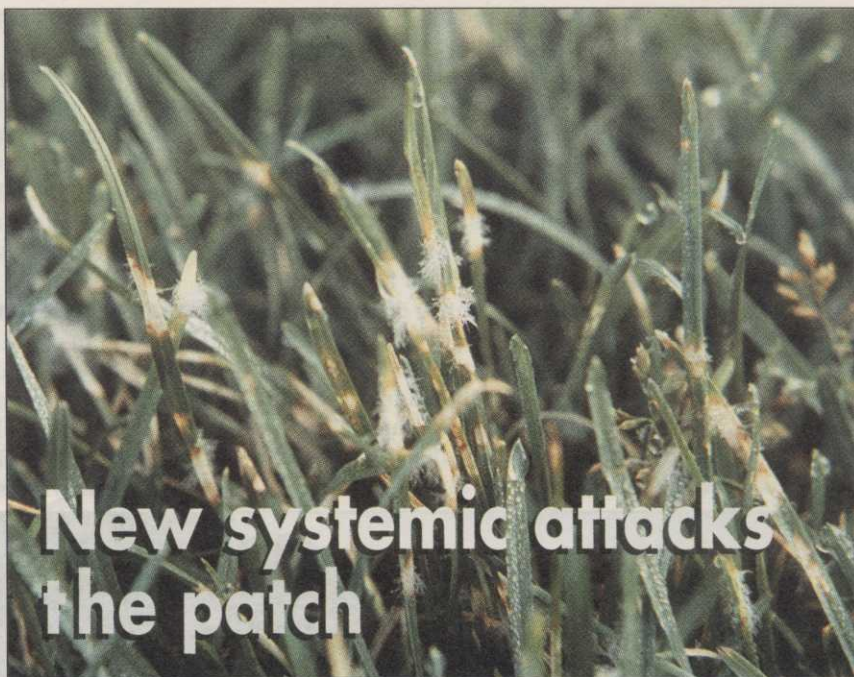
Bob Brame, director of the North Central Region, noted the acceptance of the plant-growth regulator Primo. Ciba introduced the product roughly a year ago. It differs from other Gibberellic Acid inhibitors in that it enters the GA production cycle later in the growth process, Brame said. Yet it still effectively inhibits grass cell elongation.

Brame also explained that, unlike other GA inhibitors, Primo application only affects existing turf. The foliar application becomes inactive after reaching the soil. That makes Primo effective for overseeding programs with new bentgrasses, slowing the growth of existing turf while giving the newly planted varieties a chance to take hold, he added.

While organics are not new, superintendents are revisiting natural materials like Milorganite and seaweed extracts as a way to reduce chemical dependence. "A lot of questions remain about their effectiveness," Brame said. "But they are often an important part of an overall turf management program."

Merit, a nicotine-based insecticide

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## New systemic attacks the patch

*Look for highs today in the mid- to upper-80s, with overnight lows in the 70s. There's a 95 percent chance we'll see some showers today and tomorrow, with the humidity level rising to a stifling 90 percent.*

Conditions like these might be unpleasant for golfers, but weather forecasts are an even greater concern to superintendents. As the temperature and humidity begin to rise, the inevitable environmental conditions favoring turf diseases aren't far behind. This is the time of year when superintendents in many regions must decide how to prevent costly and damaging diseases from putting them on the hot seat.

One solution is a new systemic fungicide introduced to the turf market just last year. Cyproconazole, classified as a demethylation inhibitor (DMI), or sterol inhibitor (SI), has received good reviews in both trials and widespread use. Sandoz Agro is the only company manufacturing

cyproconazole. Other broad-spectrum systemics include Banner by Ciba, Bayleton by Bayer, Chipco 26019 by Rhone-Poulenc, Cleary 3336 by W.A. Cleary, Rubigan by DowElanco, and Tersan 1991 by Marshall Thomas.

Marketed under the name of Sentinel 40WG by Sandoz Agro, Inc., cyproconazole is designed to be effective at controlling a broad spectrum of diseases, including brown patch, dollar spot and summer patch: three of the most economically threatening diseases on turf.

Although the three diseases are caused by different pathogens, stimulated by different conditions and characterized by different symptoms, there is one common thread between them: They are all difficult to control.

While DMIs are some of the most commonly used fungicides, cyproconazole is the most systemic product available. "A comparatively small amount of cyproconazole can do the same job as competitive fungicides for

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## IGR advances take center stage at Ottawa conference

By MARK LESLIE

OTTAWA — Citing little on the horizon in some areas of research but encouraging development of insect-growth regulators (IGR), bacterial toxins and natural fungi, Dr. Harry Niemczyk told Canadian superintendents here "the pot is boiling" to make Integrated Pest Management (IPM) stew.

Niemczyk, professor emeritus of entomology at Ohio State University, told the Canadian Golf Superintendents Association annual conference, "The amount of information and material you have to integrate as far as IPM is concerned is limited at best."

But, various types of preventive and curative measures are available and are being developed by forward-thinking companies and scientists.

Things that will determine what superintendents do and how they do it, Niemczyk said, are budget; course standards; governmental influence; and superintendent philosophy.

"What approach you take in this matter, these are the things that steer the ship," Niemczyk said.

Prevention should be the key to an IPM program, he said, adding that chemical, biological and cultural approaches should be integrated, based on some system of monitoring, observation and recording what's on the golf course.

Niemczyk presented a rundown on the outlook for pathogenic nematodes, bac-

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## USGA directors comment on new chemistry

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developed by Bayer (formerly Miles) has shown promise, according to Stan Zontek of the Mid-Atlantic region. "We've known for years that nicotine can control insects," he added. "The use rates are small, something like 6 ounces [6.4 according to company literature] per acre. It's extraordinarily safe. Fish can swim in it, birds can eat it. Grass clippings recycle the material into the thatch layer where it continues to control insects. It can even get into trees where it can control boring insects."

Zontek is also intrigued by trichoderma, a naturally occurring bacteria that suppresses certain turf diseases. Zontek said many other biological controls have proven susceptible to fungicides. But trichoderma seems to be resistant to most fungicides. It has been marketed primarily on the West Coast, but is being tested at two Baltimore courses, according to Mid-Atlantic agronomist Keith Happ.

Zeneca Professional Products is developing a new, broad-spectrum, post-emergent fungicide with extremely low usage rates, Zontek added. Heritage is being tested in the Eastern and Central U.S., but is probably a year away from receiving Environmental Protection Agency registration and two years from hitting the commercial market, he said.

Larry Gilhully, director of the Western region, also mentioned the potential of Heritage, which could replace mercury-based pesticides for treatment of snow mold and many other diseases.

Biological controls have been much discussed in recent years, but still seem to have limited applications. One that has proven effective is *Bacillus thuringiensis*. "BT has worked very well on army worms in Hawaii," Gilhully said. "I'd like to see it used as much as possible."

Biologicals, specifically parasitic nematodes, have also worked well against mole crickets on Southern courses. According to Florida Region Director John Foy, two products have proven popular with golf course superintendents — ProAct (distributed by Liquid Ag Co.) and Vector (distributed by LESCO).

Jim Moore, director of the Mid-Continent region, mentioned a relatively new Monsanto herbicide called Manage. Manage has proven very effective against purple and yellow nutsedge, a major weed problem on most Southern and Central U.S. courses. It works on both warm- and cool-season

turf, Moore said.

"Superintendents who have been fortunate enough to get experimental-use permits to use it are screaming for more," Moore said. "Unfortunately, there doesn't seem to be enough on the market, for some reason."

Monsanto Communications Manager Dan Holman said Manage is commercially available but acknowledged the supply shortage.

"It's like any new product: Initially there isn't enough to meet the demand," the Monsanto spokesman said.

## Jansen weighs in with updates on new formulations

Joe Jansen, a sales representative with Louisville, Ky.-based golf course chemical distributor George W. Hill & Co., annually updates customers on new products, formulations and application information for the Midwest market.

This year's written review includes Ultrex from ISK Biosciences; Merit from Bayer; a new formulation of Banner from Ciba; Mavrik from Sandoz; a new application recommendation for Dimension, recently acquired by Rohm & Haas; and Manage from Monsanto. Following are excerpts:

- Ultrex — A new formulation of Daconil. ISK's test results show it outperforming the competition in speed of mixing and consistent coverage. The U.S. Environmental Protection Agency favors it because of its dry formulation.

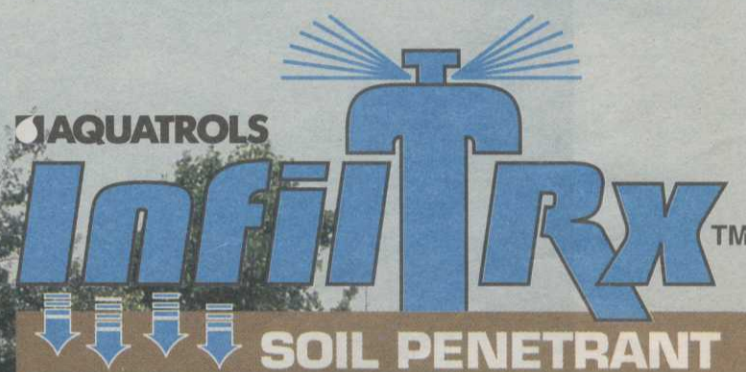
- Banner GL — Provides the same features as Banner EC, but in a gelatin formulation in water-soluble bags. One advantage of the new formulation is that it can be mixed with emulsified concentrates without chemical turf burn.

- Mavrik — It controls a broad range of hungry surface feeders and nuisance pests, and is a safer alternative to Dursban.

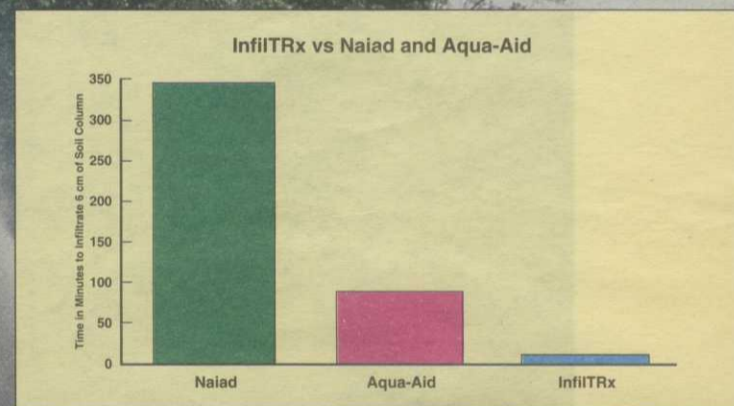
- Dimension — Has increased the amount of turf herbicide that can be applied annually from 2 quarts per acre to 1-1/2 gallons per acre, making it suitable for controlling crabgrass, goosegrass, henbit and *poa annua*.

- Manage — A new post-emergent herbicide providing outstanding control of yellow nutsedge in cool- and warm-season grasses.

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