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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 Agronomic 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 nitsedge, a major weed problem on most Southern and Central U.S. courses. It works in 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.