

New York's Turfgrass IPM Program

1993 Highlights, Part 1

For the past eight years the State of New York, through Agriculture and Markets, has allocated funds for the New York Statewide Integrated Pest Management (IPM) Program for Ornamentals; Dairy and Field Crops; Fruits; and Vegetables. The IPM program provides grants to scientists, extension field staff, and the private sector, to aid in the development, demonstration and implementation of IPM methods. In 1993, the state legislature appropriated \$837,000 for the IPM program at Cornell. The Turfgrass IPM program received \$32,000 for research and \$18,689 for demonstration and implementation, totaling \$50,689 for 1993.

The Cornell Turfgrass IPM Program is a team approach, joining together researchers, specialists, extension staff, and the turfgrass industry. The program focuses on research, demonstration, and implementation of IPM techniques and methods. The program supports fundamental and applied research in entomology, plant pathology, weed, and turfgrass science. Research ranges from addressing basic biology to practical alternative control strategies, such as suppressive composts for disease control and biological control of weeds. The implementation effort combines hands-on training, field demonstrations and written information into a comprehensive program. The turfgrass IPM program is offered to all turfgrass managers. The information is practical and applicable to the experienced turfgrass manager as well as the beginner.

IPM Research Summaries and Highlights

The research team of Michael Villani, Joseph Neal and Eric Nelson investigated biological strategies for managing turfgrass insects, weeds, and diseases. In entomological studies, five isolates of *Metarhizium anisopliae* were quite effective in controlling Japanese beetle grubs (70-80% mortality). Efficacy of one strain (MADA) was most effective against Japanese beetle grubs when *M. anisopliae* was either incorporated into soil or applied at the soil-sod interface. Applying MADA strain to the soil surface was not effective in increasing grub mortality. Furthermore, addition of compost to the system did not reduce the efficacy of the *M. anisopliae* strain. Results further show that combinations of the *M. anisopliae* with conventional insecticides can enhance mortality of Japanese beetle grubs. In weed science studies, results of both greenhouse and field studies for the control of annual bluegrass (*Poa annua* var. *reptans*) with the bacterium, *Xanthomonas campestris* pv. *poannua* (Xcp), indicate that although Xcp was effective in controlling annual bluegrass in

controlled conditions, little or no control could be demonstrated in the field. Maximum levels of control were approximately 20%. In plant pathological studies, microorganisms were isolated from suppressive composts and shown to reduce damage from a number of turfgrass pathogens. Of 104 actinomycete strains tested for their ability to prevent infection of creeping bentgrass by *P. graminicola*, the majority (84.6%) were shown to be effective. Of the 62 bacterial strains tested in bioassays, 38 (61.3%) were effective antagonists of *P. graminicola*. In field studies, selected bacterial and actinomycete strains suppressed dollar spot, but none of the strains provided any significant level of Pythium root rot control. In other studies, extracts from various composts were shown to be suppressive to *Pythium ultimum*. The principal microbes involved in the disease suppression were bacteria. In field studies, extracts prepared from chicken/cow manure composts or turkey litter compost were effective in suppressing Pythium root rot.

IPM Implementation and Demonstration Summaries and Highlights

In the next issue of *CUTT*, detailed information on Implementation and Demonstration Summaries and Highlights will be presented. Both Implementation and Demonstration projects were held across the state in 1993.

In 1993 turfgrass scouting procedures were implemented at 25 golf courses in four regions in the state (Western New York, Rochester, Westchester, and Long Island). IPM demonstrations are under way in Rochester, other Western New York sites, on Long Island, and at the Cornell turfgrass research plots in Ithaca.

The Turfgrass IPM program is a national leader in the IPM effort. In 1993, the program continued its commitment to develop a strong research and extension base. Working with the industry, the program achieved another prosperous season.

The continuing success of the Cornell IPM program make it one of the best examples of partnerships that span growers; managers; research and technology-transfer centers; and legislative and other governmental bodies. For more information contact your local Cooperative Extension agent, or contact the IPM Program, New York State Agricultural Experiment Station, Geneva, NY 14456; telephone (315) 787-2353 for the 1993 Annual New York State IPM Report and the 1993 Ornamentals Report Pertinent to the IPM Effort at Cornell University,

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IPM Corner

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7