

New York's Turfgrass IPM Program

1993 Highlights, Part 2

In the last issue (CUTT Spring '94), IPM Research Summaries and Highlights were presented together with a brief overview of the Cornell Turfgrass IPM Program. This article will look at IPM Implementation and Demonstration Summaries and Highlights for 1993.

IPM Implementation Summaries and Highlights

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). The procedures were designed and tested by Cornell University faculty. The golf courses were monitored weekly for disease and insect occurrences, weed mappings were drawn during the season, and nine courses received a thorough grub sampling. In 1993, weed scouting techniques were refined and used in all IPM funded projects. These procedures were the focus of two superintendent training sessions and a new Cornell fact sheet, *Turfgrass Weed Management—An IPM Approach*. Seven new IPM scouts were trained and approximately 600 people attended various hands-on training sessions during the season.

According to superintendents in Rochester, the golf course IPM program has demonstrated since 1988 that monitoring could reduce the reliance on pesticide applications, while still maintaining turf quality. Others in all parts of the state commented that the information gained from scouting improves their pest management decisions and that scouting is well accepted by environmentally sensitive golfers.

As in 1992, the use of pesticides by superintendents on the Western New York Golf Course IPM Program was well below the average number of acre treatments used by superintendents who treated on a preventative basis. This represents an impressive 54% reduction in spray usage. In addition to pesticide reductions the Western New York Program had three courses where either the superintendent or the assistant superintendent participated in the weekly scouting. There is growing support by local golf course associations for the program. Half of the Western New York Program was funded by the local association; individual courses increased monetary support to approximately one-third.

Nine golf courses were intensively sampled for grubs in 1993 using procedures developed and tested at Cornell. The courses were located in Erie, Westchester and Nassau Counties. Sampling results suggested a full course treatment for only one of the nine courses sampled. With-

out this information, most superintendents might treat all fairways at an expense of \$3,000-10,000. Sampling costs approximately \$300, demonstrating a clear benefit.

In Orange County a new cost-share program was begun between the Water Quality Improvement Program and the Turfgrass IPM Program. Through this program IPM was expanded into the production of sod. From existing golf course scouting procedures a scouting guideline was designed for scouting sod. It is too early to determine the effects of the effort.

IPM Demonstration Summaries and Highlights

IPM turfgrass demonstrations are under way in many regions in the state. In Rochester, on Long Island and at the Cornell Turfgrass research plots, demonstration trials have been set up to compare different turfgrass management programs. Conventional lawn care programs have relied heavily on pesticides to maintain acceptable turf. In recent years two alternative management programs, organic and integrated pest management, have been promoted to reduce pesticide use while maintaining quality. These demonstration projects will compare conventional, organic, IPM, and no maintenance programs. Overall quality, health, and pesticide usage will be measured. The Long Island demonstrations were initiated in 1993. Preliminary results from the second year Cornell and Rochester demonstrations show that in the spring the conventional program quality was better than the organic and IPM approaches. As the season progressed the IPM and organic plots produced acceptable quality and used less pesticides than the conventional program. A field day was held at the Cornell Turfgrass Research plots in June. The demonstration was a featured segment of the field day program, attended by about 450 turf managers from around the state.

Other demonstrations included a fairway renovation and conversion to endophytically enhanced perennial ryegrass in Western New York. These grasses will be more drought and pest tolerant than the preexisting turf cover. A similar demonstration is set up on the Cornell University golf course.

To reduce the reliance on chemical insecticides three alternative insect controls were tested. Three entomogenous nematodes were tested to control white grubs and cutworms on golf course turf. In small scale plots the nematodes provided

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IPM Corner

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.



and lawns in open (non-shady) areas. A risk assessment scheme was developed based on these factors, allowing turf managers to assess how likely an area is to have high grub populations before deciding to sample (see Table 1). Lawns 5-20 years old had the greatest number of grubs in risk categories 4-9. Lawns older than 20 years had the greatest number of grubs in risk categories 5-9.

This risk assessment system can be used to determine whether a site should be sampled or not. Low risk properties would not require sampling or treatment. Moderate and high risk lawns would be sampled and treatment decisions based on the outcome. Currently, we advocate sampling a minimum of 20 soil cores from these lawns. Samples should be representatively gath-

Table 1. Risk Analysis

Risk Rating*	Shade	Kentucky Bluegrass
1	>60%	<30%
2	>60%	30-60%
3	30-60%	<30%
4	30-60%	30-60%
5	>60%	>60%
6	30-60%	>60%
7	<30%	<30%
8	<30%	30-60%
9	<30%	>60%

*Higher numbers = greater risk of high grub populations

Summer Patch

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varieties of Kentucky bluegrass is perhaps the best strategy for controlling summer patch. Mixtures of these grasses provide the most effective control.

Systemic fungicides are effective in controlling summer patch. They should generally be applied 2-3 times at monthly intervals, beginning in the spring. Late season applications should help turf recover once symptoms appear. Fungicides must be applied with sufficient water so that they are carried down to the root zone where they can be absorbed by the plant. Without this drenching, control is much less effective and more costly. Certain contact fungicides, particularly chlorothalonil, may enhance disease development and should be avoided in sites with a history of severe summer patch problems.

ERIC NELSON
DEPT. OF PLANT PATHOLOGY

ered throughout the lawn. Statistical analysis of our data suggest that an average of 0.25 grubs per 11 cm diameter turf plug could be used as a threshold value for decision making. When mean densities are close to this threshold level, an additional 20 samples should be taken. Use of this sampling scheme and decision rule should result in few treatment errors and could lead to considerable reductions in pesticide use.

Results suggest that grub sampling is an economical alternative to preventative grub treatments for both lawn care companies and homeowners. In 1994, we will be validating the risk assessment model, sampling plan and treatment threshold. These studies will be conducted on 100 lawns located in four sites in the Finger Lakes region. Results will be reported at the annual NYSTA conference and in a future edition of *CUTT*.

JENNIFER GRANT
NYS IPM PROGRAM
MIKE VILLANI
DEPT. OF ENTOMOLOGY/NYSAES
JAN NYROP
DEPT. OF ENTOMOLOGY/NYSAES

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a 58% reduction in Japanese beetle grubs. However, these same nematode species were ineffective in large scale studies. Results of this year's work and similar results from past years suggest that further research needs to be conducted on the interaction and effects of soil type and climate on the nematodes.

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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*.

ROD FERRENTINO,
DEPT. OF FLORICULTURE AND ORNAMENTAL HORTICULTURE

Our research indicates that most prophylactic applications of soil insecticides for European chafer control are wasted because most properties required no treatment.

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