Integrated Pest Management For Land Managers

Looking at the Big Picture on a daily basis.

by RON DODSON

The Oregon Golf Club, in West Linn, Oregon, is blessed with a mild environment. This climate has allowed the golf course to make the commitment to not using insecticides, herbicides, or fungicides in their integrated pest management program.

INTEGRATED Pest Management (IPM) is a very common term used in the golf course management business. IPM strategies have been used by golf course superintendents and many other land managers for a long time. For example, IPM principles have been applied in agriculture for more than 30 years. Recently, the U.S. Department of Agriculture launched a plan that would implement IPM methods on 75% of the total crop acreage in the United States by the year 2000.

But what is IPM? The generally accepted definition is "A system of controlling pests in which pests are identified, action thresholds are established, all possible control options are evaluated, and selected controls are implemented. Control options that include biological, chemical, cultural, manual, and mechanical methods are used to prevent or remedy unacceptable pest activity or damage." Put simply, IPM is a land-management practice by which you assess and choose measures to control pest problems in order to maintain healthy turf.

The most effective IPM programs begin with an assessment of the problem, as well as appropriate control measures. To make this assessment, land managers should start by asking the following questions:

- How effective is the proposed control measure?
- What is the environmental impact?
- What are the site characteristics?
- What is the health and safety impact on people?
- What are the economic factors?

After you've considered these questions, the next step is to create your IPM program by using the following six basic components.

1. Monitoring. Establish a schedule to routinely check the course for pest populations and environmental conditions.

2. Determination. Find out the level of damage being created by the pests.

3. Decision Making. Develop and integrate all biological, cultural, and chemical control strategies.

4. Education. Continuously educate yourself and your personnel on all biological and chemical control strategies.

5. Timing and Spot Treatment. Apply all appropriate control measures only when they are needed, where they are needed, and when the state of the environment is appropriate.

6. Evaluation. Monitor your efforts to determine success of the control measures taken to document any problems.

Now that you have the basics for a plan, you need to focus on the following components for protecting turf on a golf course through IPM.

1. Regulatory. Use only certified seed, sod, and sprigs to establish turf.

2. Genetic. Select only turfgrass cultivars that are adapted to the intended use and that are suited for the ecological region in which they will be used.

3. Cultural. Turf is able to resist attacks by pests when it is healthy and strong. Proper turfgrass cultural practices should always be used.

4. Physical. Isolate areas where pests are a problem.

5. Biological. When possible, favor the use of natural predators to control pests.

6. Chemical. Use selectively and only as labeled.

The Ivanhoe Club (Ivanhoe, Illinois) currently is working with Dr. Mike Cole from the University of Illinois and the Green Cycle Corporation to investigate the impacts of compost topdressing on pests and pesticide use.

Old Westbury Golf and Country Club (Old Westbury, New York) has an extensive composting facility on-site. A portion of the composted material is used as topdressing on the golf course to improve soil and turf health.

Audubon Cooperative Sanctuary Program for Golf Courses — Spotlight on IPM

Many fully certified Audubon Cooperative Sanctuaries have outstanding examples of IPM programs. Highlighted below are just a few of the fully certified golf courses that have made exemplary efforts to design and implement not only effective IPM programs, but ones that consider environmental impact an essential part of their plan.

The Oregon Golf Club (West Linn, Oregon)

The Oregon Golf Club has worked hard to show how far you can take a solid integrated pest management program — no pesticides, herbicides, or fungicides are used on the course. A variety of practices have led to this incredible reduction in chemical use at the course. A strong scouting and monitoring program, along with the use of biological controls, such as nematodes, were two key components. Daily scouting, with particular focus on indicator areas, and setting threshold levels also helped in this reduction, leading to a savings of $36,000. Finally, a comprehensive cultural program using soil and tissue samples to determine turf health and aerification, topdressing, vertical mowing, and overseeding programs to maintain good turf health further helped in the elimination of chemical use on the course. Certainly, climate plays a large role in disease and insect pressures at their site, but The Oregon Golf Club is committed to maximizing IPM in its golf course management programs.

Old Westbury Country Club (Old Westbury, New York)

Maintaining a healthy soil is the key to Old Westbury's 50% reduction in chemical use on the course and corresponding $50,000-60,000 savings. Phil Anderson, superintendent at Old Westbury, strongly believes in the philosophy that a healthy, active soil makes it a lot easier to maintain healthy turf that is more pest resistant. A large part of his program focuses on using organic products to help infuse the soil and turf with beneficial microbes. Using chemicals only upsets the natural balance of healthy soil, making the turfgrass system dependent on pesticides rather than stronger and independent of chemicals. Biological controls, such as milky spore and nematodes, are chosen over synthetic chemicals. Old Westbury further shows its commitment to managing in an environmentally sensitive manner through its participation in such programs as "Another Way to Be Green" and Phil's regular radio shows that focus on reducing the golf industry's reliance on pesticides. An extensive composting program is another highlight of Old Westbury's IPM efforts.

The Ivanhoe Club (Ivanhoe, Illinois)

Pete Leuzinger, superintendent at Ivanhoe, successfully reduced insecticide use at the course by 90%. This reduction was achieved by: 1) permitting some insect damage and 2) continually scouting turf conditions to make decisions on spot-spraying versus wholesale broad-spectrum dosages.

Pete gives an example: "If I were concerned about grub damage in my fairways, I would have to make a decision on spraying 45 acres of fairway ground to treat the grub problem. That is one choice. Another choice might be to ignore the problem and hope the damage is only minimal and the quality of the golf course is not sacrificed. My third option would be to find out exactly where the grubs are causing damage and treat those small areas in the fairways, thus reducing the treated area from 45 acres down to perhaps two or three acres. Cutworm damage on a green may occur several times a year. In most cases, the damage can be tolerated because the population of the insect is low enough that only an expert eye can find the damage. Some people like living on the edge. I like the challenge of saving money, saving work, and saving the insects for the birds. To me it's kind of like a game, and the less I mess with insecticides, the better off our golf course is going to be."

The course is also in the midst of researching the impacts of using compost instead of pesticides to reduce pest problems.

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