IPM—We've Been Using It All Along

By Michael Semler

The pest management strategy that is known universally as Integrated Pest Management (IPM) has in recent years become a new buzz word in the golf course superintendent's dictionary.

Golf courses are increasingly coming under fire from some people for the types and amounts of pesticides used to maintain the high turf quality desired by the golfer. Our industry has responded by finally including IPM into our list of responses and management techniques instituted to maintain this turf quality.

I don't know about you, but I never stopped using IPM as my management style. I am certainly glad more is being written about it in the industry.

Superintendents are growing one of the most intensely managed crops known to man—golf course turf. The demand for perfection by golfers, the heavy traffic the turf receives, curveballs by Mother Nature and the unreasonable stresses that are put on turf have put us in this category. We have responded by applying more management techniques and plant protectants than nearly any other crop grown. In essence, we have been using IPM for so long that we just forgot to call it that.

IPM is culmination of all the pest management strategies available and then using all of these tactics in the most efficient and safest way to control the pest. It is not anti-pesticide, but rather emphasizes using pesticides more effectively and efficiently than has been done in the past.

Control measures often referred to in IPM strategies are: cultural, biological, chemical, mechanical and use of resistant varieties. Also included is periodic scouting to determine the levels of pests present. Superintendents are using these techniques everyday without even realizing it.

For golf courses, cultural and chemical control and the use of resistant varieties seem to be the most promising sources for our IPM programs. Mechanical controls (i.e.—the use of traps, barriers, heat and cold) appear to have a limited use on golf courses except in the removal of occasional rodents or animals. Biological control (i.e., the use of natural enemies) is gaining in popularity, but there still is a limited number of golf course pests which have natural predators that are viable control measures. However, research in this area is attempting to increase the types and amounts of control measures available.

This leaves us with the strongest points in our IPM programs. The first is scouting and monitoring pest levels. For example, by consistently monitoring weather data, probing the soil and looking at individual plants, we can determine what pests may pose significant problems in the future and what control measures can be used. The key is knowing what is happening on your golf course and making decisions for controls, if necessary, based upon this knowledge and your knowledge of acceptable pest damage. IPM is based on scouting, monitoring and knowing your golf course environment.

Another of our strong points in IPM is the use of cultural control measures. The list of cultural controls used by golf course superintendents is unsurpassed by any other agricultural commodity.

Water management and the desire to have the perfect soil moisture conditions have put us on the cutting edge of irrigation technology with its precision application and timing. When this technology can't provide the desired moisture levels, we even hand water the localized dry spots. Additionally, we install drainage tile to remove excess moisture and prevent wet areas. In some cases, we even mechanically remove dew in the morning to help relieve disease pressure. All of these help to provide the optimum growing conditions for turf and help to reduce the incidence of disease.

Our fertility programs are based on soil tests and monitoring these levels for optimum growth and minimum

disease incidence. Not only do we make necessary adjustments for major plant nutrients, but for micronutrients and soil pH as well. This maintains plant nutrient availability at adequate levels for proper turf health.

The benefit of aerification on golf courses has been known for a long time and now it has become a critical cultural management tool. These benefits not only include increasing soil porosity and subsequent root density, but a reduction of thatch as well. This thatch reduction diminishes the pest environment and leads to less plant stress and overall increased turf health.

Topdressing on golf courses is another management tool used to promote turf health. In addition to reducing thatch levels, we can change the root zone soil to a more desirable soil in terms of structure, compactability and water holding capacity. These are critical for healthy golf turf because of heavy wear and high traffic the turf receives.

Even most golf course tree maintenance programs are a form of IPM. By pruning or removing specific trees or branches, air circulation is increased with a subsequently reduction in disease pressure. This pruning also increases the sunlight reaching the turf canopy and increases the plants ability to photosynthesize.

One of the most difficult management strategies facing superintendents is the cutting heights we are currently mowing some turf. Let's face it—grass was not meant to be mowed at 1/8 of an inch, or 3/8 of an inch, or mowed at all. It is at its healthiest when left alone. However, it is able to survive frequent cutting because the crown is close to the ground.

The golfers' demand for fast, tight, closely mowed turf has put unrealistic demands on a solid IPM management strategy. However, new technology is coming out which allows higher mowing heights without sacrificing speed and golf turf quality. In addition, new turf types which are able to tolerate close mowing conditions and stay healthy are coming on the market annually.

Along the lines of new turf varieties is the IPM strategy of using resistant varieties. Here again, genetic research is ongoing to produce turf which is hardier and more adaptable to the golf course situation. This research is producing varieties of grass which help our IPM strategies by offering one or more avenues of plant stress reduction.

Finally we come to the use of chemicals for pest control. They are, in fact, an important strategy in IPM. However, in striving for perfection, we need to remember to use the chemicals only as necessary in an overall IPM strategy, and not just to make ourselves "feel good". We certainly should not spray on set schedules which do not warrant their use when pest pressure is not present.

Through our periodic scouting and even after using all other methods of pest control, there often occurs a pest outbreak in which the only means of control is with chemicals. In this case, our IPM strategy includes the application of chemicals in the most reasonable and safest means possible to reduce the pest to acceptable levels.

IPM has been a part of the superintendent's management program since golf turf management began. Chemicals have also played a part in this management strategy. Unfortunately, the emphasis has always focused on the use of chemicals on golf courses, and not on all the other management tools we have been using to reduce and control pest outbreaks.

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