

IPM — What Does It Mean?

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Integrated pest management is the selection, integration, and implementation of pest control based on predicted economic, ecological, and sociological consequences. It is not a program that uses strictly biological or organic controls, or is pesticide free, and is not the least or most expensive. I.P.M. is a multi-step approach to controlling soil conditions, pest plants, animals, and pathogens that promote optimal plant health and use effective pest control methods that pose minimal hazards to people and the environment. Inherent to this approach is the understanding that it is neither possible nor practical to eradicate

most pest problems. Thus managed control is the goal, and going one step further, plant man-

the interactions of all the above to maintain healthy turf avoiding pest problems or symptoms.

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agement utilizing knowledge of the complete golf course ecosystem, soil, water, light, temperature, fertility, traffic, and

Every golf course and even every golf hole has different factors that influence turf health. Soils, grass types and cultivars within that type, humidity, sunlight, shade, rainfall, temperature, and traffic patterns are all factors that a turf manager cannot always control. Fertility, mowing frequency and height, aerification, topdressing, drainage, and soil amendments are all factors that we can influence. It is the manipulation, observation, and the understanding of the interactions of these factors, as well as the effect of our inputs (agronomic programs superintendents create)

(continued on page 8)

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IPM — What Does It Mean?

(continued from page 6)

to maintain healthy turf. Determining methods and materials that have a positive effect on our turf ecosystem is what integrated pest management is all about, or more properly named integrated turf management.

I.P.M. can be equated to the holistic approach to health care; problems are avoided by taking care of the causes of problems, not just treating the symptoms. Effective integrated turf management programs treat the turf in the same manner. Disease, turf loss, and damaging insects are all symptoms of other problems or causes. Just spraying chemicals does not cure a problem; it only treats the symptom. For example, a foliar disease problem is caused by the turf being too wet. The symptom is the disease; the problem is poorly drained turf.

Today more than ever, we (superintendents) are asked to maintain better turf conditions for our customer, with increasing scrutiny of our turf management methods and materials and the cost effectiveness of our programs. The current ideology (or reality) of turf management is to create a “sustainable” resource using one pound less chemical and one pound less fertilizer, meaning more cost effective turf maintenance in both methods and materials. Key to this is the education of the turf manager knowing what is available, options, new methods and materials, and also alternative approaches to problems, thus allowing the superintendent to make the best decision for both the turf and the budget.

In practice, integrated pest management is the decision-making process through which one determines if pest suppression is necessary, what tactic or

combination of tactics are needed, when control should be implemented, or where controls should be targeted.

I.P.M. is a change in the paradigm of traditional old-fashioned fertilizer/chemical turf management to an integrated, multidimensional care for the total ecosystem (not just grass) approach to healthy playable turf.

This leads us into the basic principles of an I.P.M. program. First, one must accept that poten-

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tially harmful pests always exist in the turf environment. Knowing these pests, their lifecycles, and habits allows the turf manager to make control, not eradication, decisions. This is based on the best control that is least harmful to the environment, its cost, effects on nontarget organisms and the fact that low levels of a pest may be good for the natural ecosystem.

Second the ecosystem is a management unit. Fertility, plant type, soils, light, water, tempera-

ture, bacteria, fungi, insects, and cultural practices all make up the very complex ecosystem that we must care for. Knowledge of these factors and their interactions is key to maintaining healthy, playable turf and learning to manipulate these factors to the benefit of the turf and the detriment of plant pests. Along these lines, we seek to maximize the use of natural control agents and beneficial organisms. Superintendents seek to use the least disruptive materials and treat only those areas that require treatment. When using any product for turf care, it is important to keep in mind that any control practice may produce unexpected or undesirable results and that as turf managers, we must stay informed on tactics, problems, options and their consequences. Also, turf management is a unit approach, and there are consequences to any action we take in maintaining the turf.

The final and most important principle of I.P.M. is that turf management is multi-disciplinary. Effective programs utilize all experts available. This includes agronomists, entomologists, plant pathologists, extension agents, sales representatives and fellow superintendents. It is not always what you know, it's knowing where to get answers to your questions when you need them.

Creating an integrated plant management plan or policy for your turf site, be it a backyard or a golf course, requires the plant manager to have a thorough knowledge of the key plants, key pests, and the key locations in the managed system; also site assessment, what types of grasses (cultivates) are present and their requirements; identifying microclimates (there can be several within a golf course and even within a single hole) and choosing the proper turf type for each par-

(continued on page 10)

IPM — What Does It Mean?

(continued from page 8)

ticular climate; and understanding these climates and the factors that influence turf quality such as, light (quality and quantity), air movement, soil types, water, humidity, air quality, fertility, cultural practices. Each of these factors can be measured, quantified, and isolated and can affect plant growth and health. Observation of these separate areas and their problems, or lack of, help the turf manager develop a history and allow mapping of problem areas and development of treatment programs for the problem areas. Also, future problems can be prevented or predated by understanding the factors involved and identifying the problems, not just treating the symptoms.

Monitoring, the regular inspection of the turf throughout the site, is key to the success of any good turf program. This includes the entire staff on the golf course, not just the superintendent. We train and educate all of our staff to recognize irregularities in the turf and to alert the management staff for diagnosis and strategies to repair or cure the symptoms that are observed. This approach allows detection of potentially damaging pests, weeds, disease, and adverse environmental conditions before they get out of control and pinpoints problem areas so that timely applications of turf care products can take place. This also allows treatment to occur only in the areas requiring treatment and increases the effectiveness of control materials by being applied when, and as, needed. Also, the effectiveness of a particular treatment can be assessed prior to its use in other areas, allowing comparisons of different control strategies and choosing the best control with the least environmental consequences.

Once a problem has been

detected, the turf manager must go through a decision-making process. Is the problem severe

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enough to cause damage, and is that amount of damage beyond the threshold of our tolerance for damage or customers' expectation

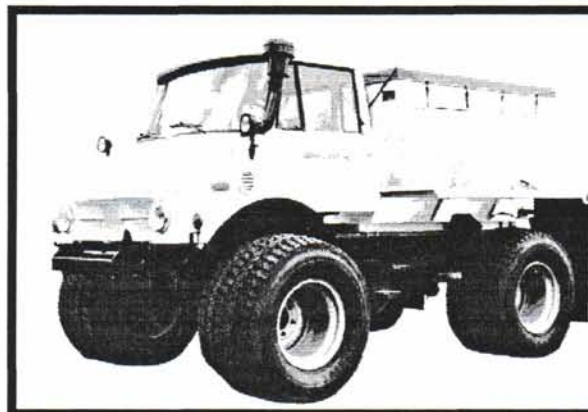
of the turf conditions? If the damage is beyond our tolerance threshold, what is the best control tactic? Is it cultural, chemical, biological, or other? Is this an environmentally sound approach? Are there alternatives that may be less damaging to nontarget organisms, and are they economically sound? Finally, are the problems symptoms of other factors physical, environmental, chemical or other; and what can be done to avoid future problems. Improved drainage, air circulation, sunlight, too much or too little irrigation are all examples of factors that may be manipulated to reduce or eliminate a problem once it has been identified and understood.

The final and most important part of any integrated pest program is the evaluation of your plan, tactics being used, effectiveness of the controls that are being used and the results that have

(continued on page 24)

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A Letter to the MAGCS

n behalf of the Illinois Turfgrass Foundation Board and membership, I am writing to express our sincere appreciation for the 1998 donation of \$12,500 from Midwest Association of Golf Course Superintendents, presented at the recent North Central Turfgrass Exposition.

Your group's continued support of ITF's work to raise turf research and scholarship funds is truly valued and deeply important. We are proud to have been able to award over \$104,000 for turf research and scholarships in Illinois in 1998.

Our 1998 funding awarded \$4,000 in undergraduate scholarships; an additional \$1,500 has been raised by the University of

Illinois Turfgrass Alumni group. The research farms/field plots at the University of Illinois and Southern Illinois University have received \$16,000 and \$5,700 respectively.

ITF funded researchers: Dr. Bruce Branham, Dr. Ken Diesburg, Dr. Tom Fermanian, Dr. Tom Voigt and Dr. Hank Wilkinson each received grants of \$15,500 in support of their ongoing programs. The ITF Board has established a \$10,000 research surplus, which may be awarded competitively in 1999.

We are proud of the research being done which helps to educate the turf professional and leads to improved turf on the golf course, home lawn and public park. We are truly excited about

the future of ITF and committed to building the strength and quality of the Illinois turfgrass industry.

If at any time you have a question about ITF activities or goals, please call me. We would welcome an opportunity meet with your membership or board to discuss mutual interests or needs. Please pass on our deep thanks to your membership for the continuing support of ITF's mission.

Randy Wahler
President
Illinois Turfgrass Foundation




IPM — What Does It Mean?

(continued from page 10)

been achieved over time. A turf manager must determine the biological outcome of the control used both positive and negative. What is the overall value of a particular management program; is it effective, costly? If symptoms have been treated, what are the causes; can they be corrected? Develop a plan for remediation. Can physical or environmental factors be changed, influenced? Map the problems and the results. Does this area have the same problem at the same time or place, and can we determine the cause? Can we seek other interdisciplinary opinions?

Golf turf is part of a complex ecosystem that is influenced by many different factors, both natural and man-made. Understanding these factors, their

influence on turf health and management and the interactions of the many factors are key to maintaining healthy, playable turf. Knowing and measuring these factors allows turf managers a way to learn to manipulate the environment (golf course turf) for our customers' benefit while preserving the habitats and environment around us. Not only are we as managers asked to maintain our turf for quality at all times, we must do so with increasing demand for our product and increasing scrutiny of how we do it. We must stay within certain limits or standards, economically within our budgets, socially within legal limits and societal standards, and environmentally to preserve and protect and possibly improve the ecology of our local surroundings. 

Paying For a College Education . . .

(continued from page 16)

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Plan today for the long term

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