

NJ Department of Environmental Protection

Integrated Pest Management (IPM) Prerequisites and Minimum Criteria for Golf Courses

General Definition of IPM:

IPM is a sustainable approach to managing pests by using all appropriate technology and management practices in a way that minimizes health, environmental, and economic risks. IPM includes, but is not limited to, monitoring pest populations, consumer education, and when needed, cultivation practices, sanitation, solid waste management, structural maintenance, physical, mechanical, biological and chemical controls.

Prerequisites for IPM:

Education of the Customer

The golf course superintendent will educate the management and the players about the principles of IPM and the public health and environmental advantages of judicious pesticide use. An overall reduction in chemical controls, along with the appropriate choice of pesticides and application methods through the use of IPM, results in a lower risk and exposure potential for humans, pets and other non-target organisms. Risks and efficacy of both chemical and non-chemical control methods of pest suppression must be considered as part of an overall pest management strategy. The information for educational purposes will also include the importance of monitoring for pest problems, pests, soil condition (reflected in available soil moisture and fertility) plant siting, selection, beneficial insects and maintaining plant vigor to resist diseases and insect damage.

Credentials of the IPM Practitioner

The IPM practitioner should have the following credentials:

- ♣ Completion of the Rutgers Landscape IPM Short Course or other comparable course in scope and duration
- ♣ A valid Commercial Pesticide Applicator License issued by the NJDEP
- ♣ Certification in Category 3B (Turf Pest Control) and other categories relevant to golf course maintenance

Minimum Criteria for IPM:

Monitoring

One of the most critical components to golf course IPM is monitoring.

- ♣ An initial soil sample(s) should be taken at an appropriate location(s) on the property. The results should be analyzed and interpreted by a laboratory to establish a university/research-based schedule for fertilizer, lime, and soil amendments based on specific site conditions, plant material

and management goals. Soil samples should be analyzed on a rotating basis at least once every three years.

- ♣ A well-trained and experienced golf course superintendent will scout to detect symptoms of a pest problem on a daily basis.
- ♣ He/she will consult with other superintendents in the area and specialists in turfgrass management.

Action Thresholds

An action threshold is a level at which some method of control would be initiated. Action thresholds are determined by such factors as severity of the pest problem, impacts on health and safety, economics and aesthetics related to the pest and user needs for the site where the pest is found. The IPM Practitioner and the customer will determine and record tolerance levels for pests and pest damage. This may vary by pest species or type, and site.

Pest Management Methods

Integrated pest management techniques will be used for prevention and suppression of pests. These include:

- ♣ Using certified seed and/or sod grown with certified seed should be considered, as the preferred choice to prevent unwanted weed contamination.
- ♣ Selecting improved grasses that perform well in specific areas and show resistance to pest problems.
- ♣ Use of cultural practices such as aeration, vertical mowing, top dressing, maintenance of proper soil nutrients, sound irrigation management and proper mowing techniques to maintain the turf in the most healthy condition and influence its susceptibility and recovery from pest problems.
- ♣ Cleaning equipment to prevent spreading of diseases and weeds from infected areas.
- ♣ Introduction of natural enemies to compete with the pests where possible.

When the pest level meets or exceeds the pre-determined action threshold and pesticide use becomes necessary:

- ♣ Pests should be reduced to below threshold levels.
- ♣ Preserving beneficial plants and other organisms should be considered when feasible.
- ♣ Consideration should be given to the products and application techniques that lower the level of risk to humans and the environment.
- ♣ Although use can be restricted to curative rather than preventive applications to reduce environmental exposure, exceptions may include pre-emergent herbicides for annual weed control and fungicides for control of *Pythium* and patch diseases.
- ♣ Pesticides should be applied in accordance with label instructions, at or below label rates, and under appropriate environmental conditions (i.e., no spraying on windy days or when rain is in the forecast).
- ♣ Pesticides should be applied through the use of appropriate drift reduction techniques, such as the use of low-pressure sprayers when possible.

- ♣ Pesticides should be rotated in use, when possible, to prevent or slow the development of resistant strains of pests that would then require more frequent or higher application rates.

Documentation & Recordkeeping

Compile a site-specific history of all monitoring observations, pest infestations, cultural procedures, control measures and pesticide treatments made. This should provide information regarding problems associated with each site. In addition, the principles of an IPM program should be written into the contract, if applicable.

Accumulated plant and pest knowledge is used to predict, monitor and detect pest outbreaks. Proactive avoidance of pest problems is desired, followed by early detection and early intervention, once pests reach action thresholds.

- ♣ A written summary of each site visit will be kept, to include any cultural procedures, pests, diseases, or other problems found, control measures, or treatments made, and materials used, as well as recommendations for water or care.
- ♣ The IPM practitioner will keep records of all monitoring observations.
- ♣ Pesticide application records shall be kept as required by the NJDEP pesticide control regulations.

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