



Facilities Management Services (FMS) – Integrated Pest Management (IPM) Plan

Purpose and Goals:

As the first impression for visitors and prospective students, Carnegie Mellon's landscape is a critical asset for the University. The beauty of the campus' well maintained grounds serve as a strong first impression and continuing comfort to those considering attending school here as well as those students already enrolled at the University. The FMS grounds staff is responsible for ensuring that the campus landscape is protected, maintained and enhanced in ways that are both sustainable and responsible. With those goals in mind, these policies and procedures have been developed.

Policy Statement:

Integrated pest management is a decision-making process which FMS Grounds employs in its sustainable approach to controlling insects, weeds, plant pathogens and other pests within the landscape through the use of biological, physical and chemical means. This methodology minimizes the risk from pesticides to human health and the surrounding environment. FMS utilizes a system of regular inspection and maintenance of its grounds, along with appropriate chemical selection methodologies, to minimize both the quantity and toxicity of chemicals on the campus landscape.

- Conduct regular inspection of plant resources for early detection of pests and other maladies to limit scale of any needed treatments
- Actively engage in preventative measures to reduce chemical use

- Conduct ongoing evaluation of chemicals used on the landscape to minimize applications and maximize effectiveness of applications as well as identification of new options.
- Schedule treatments to minimize potential impacts on campus activities
- Use only certified and/or trained staff in accordance with PA Dept. of Agriculture; Bureau of Plant Industry regulations to make needed treatment applications.

The IPM plan at Carnegie Mellon University consists of two major campus categories

- 1 Turf and Grasses
- 2 Trees and Woody ornamentals

Identification of Pests:

For each pest that has been encountered in the recent past, or that has a likelihood of impacting the campus landscape in the future, a Pest Profile Sheet will be maintained. Pest information profiles will be collected and maintained by the FMS Grounds shop. These pest profiles will include common name, scientific name, species affected, description of symptoms, biology of life cycle, favorable environmental conditions, threshold levels and scouting program. These profiles will be reviewed as new information becomes available but at least reviewed annually.

Pest Scouting - Inspection Program

Carnegie Mellon University must know which pests are presently in the campus landscape or what pests are expected given the past grounds maintenance history, environmental conditions or weather.

For turf and grasses in the growing season scouting will be conducted on a monthly basis and will be increased as dictated by weather or when pest populations require closer monitoring. Records of Scouting will be maintained as part of the IPM. This scouting activity will help to better determine if and when a pesticide application is needed or if other cultural control methods are viable.

For woody ornamentals and trees, the scouting program will be broken down into three time periods: **1)** Pre-bud break in early spring **2)** bud break in late spring /early summer **3)** early fall before dormancy. This scouting will reveal what, if any, pests are present and if the level of pest populations would warrant any further treatments.

Prioritizing the Campus

The Campus landscape is organized into three grounds maintenance zones and each of these zones:

East/West Zone (comprises most of the main campus academic building areas)

Mellon/Housing Zone (comprises housing building areas and all satellite properties)

Central Zone (comprises main campus large turf grass panels and athletic field areas)

Each campus grounds maintenance zone will have its plant material evaluated and designated as being within three threshold levels: Level A, Level B, and Level C. These levels will define the IPM response priority

Turf and Grasses

Level A is considered high priority and will be managed to minimize any reduction in their quality. These areas will receive the most significant attention and resources.

Level A turf areas include:

- 1) The Cut
- 2) The Mall
- 3) CFA Lawn

Level B is considered a medium priority. Minor pest problems will be acceptable in these areas and will require less maintenance but will be monitored to prevent pest populations from reaching levels that might threaten Level A turf grass. Level B turf areas include:

- 1) Building perimeter turf grass panels
- 2) CFA lawn

Level C is considered a low priority. Pest problems will be monitored but FMs will treat only the most serious of pest problems. Level C turf areas include:

- 1) Woodland edge turf panels
- 2) Right-of-Way (Road) turf panels

Woody Ornamentals and Trees

Level A is considered a high priority and includes trees and shrubs in the main trunk of the university campus, complex landscape sites and at the primary entrance landscape to campus buildings.

Level B is considered a medium priority and includes trees and shrubs that are planted at building perimeters and at off-campus properties.

Level C is considered a low priority and includes any undeveloped university properties and woodland areas. These areas are undeveloped and largely natural and require little maintenance: however they bear watching for indicators that would indicate the buildup of serious pest problem that could migrate into another level (area) of plant material.

Selection Criteria

When the results of scouting or inspections indicate a pest that meets the threshold for treatment, non-chemical methods must be considered and implemented, as appropriate, before chemical treatments are employed. These include but are not limited to the following:

Turf

- Adjust mowing heights
- Adjust mowing frequencies
- Changing frequency of irrigation
- Changing time or duration of irrigation
- Adjustments to plant nutrients (fertilizer/minerals/etc.)
- Aeration of soil
- Limiting soil compaction
- Mechanical removal of pests

Woody Ornamentals and Trees

- Pruning
- Mechanical removal of pests
- Limiting soil compaction
- Changing frequency and duration of irrigation
- Adjustments to plant nutrients (fertilizer/minerals/etc.)
- Culling or removal of dead/diseased plant material

Each area of the Carnegie Mellon University campus landscape has unique characteristics such as proximity to ledge, parking areas containing impervious surfaces, soil types, grades and slopes, ground drainage and photosynthetic exposure. Consideration must be given to special aspects of each campus landscape area when choosing the appropriate control measure.

If non-chemical controls prove to not be fully successful, then chemical measures may be employed after review of the Pest Profile Sheet. In selecting a pesticide, FMS will use the following references and guidelines to assist in selecting the most appropriate chemical product for the problem being addressed.

Penn State Agricultural Extension Division plant pest fact sheets pertaining to cultural as well as chemical treatments for pest problems found in our climate zone. The PSU Agricultural Extension provides a regional expertise in assessing pest management.

Windows Pesticide Screening Tool (WIN-PST) FMS will compare options for pesticides that is effective on the problem being addressed and select the chemical that provides the lower rating in toxicity categories.

National Organic Program as administered by the U.S. Department of Agriculture. FMS will use this resource to identify pesticide chemicals that are both effective and bear the NOP logo

Chemical Application Protocol:

The focus of these protocols is to promote the safe use of pesticides. The intent of FMS is to limit and reduce our use of chemicals. They are used to manage pests after thresholds have been surpassed and other preventative methods have failed. This includes smaller chemical applications as a preventative measure to minimize the need for broader more intensive chemical treatments at a later date. The following additional safety measures must be incorporated into any chemical application process.

- ✓ Pest information profiles to be consulted to determine proper timing of application and any post-treatment guidelines
- ✓ Use lowest effective chemical rates to achieve pest control
- ✓ Utilize spot treatment of affected pest areas rather than blanket applications

- ✓ When warranted utilize a tackifier (spreader/sticker) additive to chemical application to reduce any chemical run-off
- ✓ Prior to a pesticide application chemical labels and MSDS sheets will be reviewed by applicator and proper protective gear will be used.
- ✓ Safe procedures, as designated by the PDA/EPA, will be used in during mixing and application to prevent any spills or exposure to the applicator, the public or the surrounding environment. Spill response equipment will be available for both mixing and application process
- ✓ All agricultural chemicals will be stored in a PDA/EPA certified and secured storage room located in the FMS maintenance garage area.
- ✓ Annual training in pesticide applications will be conducted with all applicators (gardeners) in accordance with the PDA pest-technician regulations.

The FMS Grounds Manager maintains a Pennsylvania Department of Agriculture: Bureau of Plant Industry commercial pesticide license and CMU maintains a Pennsylvania Dept. of Agriculture pesticide business license. All FMS pesticide applicators are certified and trained as Pesticide Technicians under the guidelines of the PA Dept. of Agriculture. Any contractors that are licensed pesticide applicators making pesticide applications on Carnegie Mellon University campus will be instructed to do so under the guidance of the IPM plan.

Recordkeeping

FMS will maintain pesticide application records in accordance with guidelines setup by the Pennsylvania Dept. of Agriculture: Bureau of Plant Industry. A log of IPM activities conducted throughout the year will be maintained. This information will include, at a minimum,

1. Pest problem encountered
2. Non chemical options implemented
3. Chemical options implemented
4. MSDS for chemicals that have been used

Annual Review of IPM plan

FMS will conduct an annual review of activities that have taken place within the scope of this IPM plan to gauge its effectiveness and will as warranted modify the plan to better accomplish the goals of Integrated Pest Management (IPM) on campus.

Summary

Carnegie Mellon University, Facilities Management Services (FMS) realizes that the university campus is a significant asset to the campus community and is committed to maintaining the campus landscape in an environmentally responsible manner. Towards this end the IPM plan provides a work tool to guide our grounds maintenance process.

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