

**Medical University of South Carolina
Integrated Pest Management Plan
Initial Survey
George Melfi interview**

Integrated Pest Management

According to the United Nations Food and Agriculture Organization Integrated Pest Management (IPM) is an ecosystem-based strategy focusing on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of getting rid of the target organism.

What is a Pest?

Pests are organisms that damage or interfere with desirable plants in our fields and orchards, landscapes, or wildlands, or damage homes or other structures. Pests also include organisms that impact human or animal health. Pests may transmit disease or may be just a nuisance. A pest can be a plant (weed), vertebrate (bird, rodent, or other mammal), invertebrate (insect, tick, mite, or snail), nematode, pathogen (bacteria, virus, or fungus) that causes disease, or other unwanted organism that may harm water quality, animal life, or other parts of the ecosystem.

Objectives

The objective of practicing IPM is to acquire long term equilibrium of pests, and provide ecological habitats for pollinators on campus through a range of integrated methods.

There are a range of IPM principles and practices combined to create IPM programs. While each situation is different, six major components are common to all IPM programs:

1. Pest identification
2. Monitoring and assessing pest numbers and damage
3. Guidelines for when management action is needed
4. Preventing pest problems
5. Using a combination of biological, cultural, physical/mechanical and chemical management tools
6. After action is taken, assessing the effect of pest management

IPM monitoring and Correct Pest Identification

The first step IPM protocol is to log and record the pests after observing them in the gardens, and to then either hand pick them, or to wait for the bugs to equalize.

Maintaining an Integrated Pest Management log would contain information regarding bug populations, infestations, diseases, etc regarding all beds on campus, and our protocol and remedies used to abate them.

What is the current monitoring regime done on campus?

What is the identification and eradication protocol?

What steps are usually taken after identification?

Preventing Pest Problems

Prevention, often called cultural controls, are techniques surrounding the cultivation of plants to maintain plant health. This includes using resistant varieties of plants, natives, plants that are well adapted, as well as practicing proper planting techniques. Other cultural controls include, proper rotation of plants, companion planting, trap cropping. Proper irrigation and good sanitation practices also feed into healthy plants.

Do you take native or well adapted plant varieties into consideration when purchasing plants?

What preventative steps are taken regularly to prevent pests?

Do you use overhead or drip irrigation in beds? Why?

Where do you get your cultivars from? Are your suppliers using chemicals in their growing practice?

Do you grow up your own plant cultivars on site? If so, what are your growing practices?

Biological Controls

Conservation, augmentation, and classical biological control are tactics for harnessing natural enemies' benefits. Often biological controls focus on promoting predators, parasitoids, and pathogens to stimulate the natural food web. Biological control is the beneficial action of parasites, pathogens, and predators in managing pests and their damage. Biocontrol provided by these living organisms, collectively called "natural enemies," is especially important for reducing the numbers of pest insects and mites. As a human partner in this food web augmenting or conserving other creatures through attraction and protection of natural enemies.

Do you currently practice augmentation of other species as a biological control? (purchase or introduction of lady beetles, lace wings, parasitic wasps, etc.)?

Do you practice soil maintenance in a way that encourages plant pathogens and microbial species to establish biological controls of fungus and plant pathogens negatively impacting wanted plant species?

Do you practice pesticide use that does not harm natural pest enemies? (botanical oils, microbials, or botanicals)

Do you work to landscape with plants that are beneficial to beneficial insects and pest parasites?

Mechanical Controls

The use of hands-on techniques, equipment, and devices to protect plants from insects that have reached an unwanted population level, or action threshold.

Controls such as sanitation, physical barriers, mechanical methods and devices are used to control the population. Techniques such as handpicking, traps, attractants, vacuums, coverings, pressure spraying, insecticidal soaps, and diatomaceous earth are all considered forms of mechanical controls.

What mechanical controls do you use?

Chemical Controls:

Chemicals, when used responsibly, fit into a well rounded IPM program. There are many different types of chemical controls used in IPM. Pesticides used in moderation with a low host range, or highly-selective products. Spot treating, utilizing proper Personal Protection Equipment (PPE), as well as the eradication of properly identified pests is critical to proper IPM protocol. Chemicals such as microbial and botanical pesticides, horticultural soaps and oils, insect growth regulators, minerals and metals, and synthetic chemicals all constitute chemical controls. These are best used as a last resort.

At what point do you decide to take chemical action? (Is there an upper limit to an infestation before you use chemical action?)

Do you have a spray regime that seeks to reduce contact with beneficial insects (time of day, application technique, etc.)

Education and Awareness

Providing a source of information about the campus actions helps to inform the public of the steps being taken in a larger picture. This information can be distributed in the form of informational sheets, signage, and interactive workshops. Providing information to promote further IPM actions throughout the community leads to better informed citizens.

Do people on campus inquire about the pest management on campus?

How do you inform people about what you are doing on campus?