

## **INTEGRATED PEST MANAGEMENT PROGRAM (IPM)**

An Integrated Pest Management program is an effective and environmentally sensitive approach to pest management that relies on common sense practices. Pests include weeds, insects, and diseases. Most pests can be controlled with proper management practices. Necessary controls must be used when pests breach the economic threshold. The economic threshold is the point where the pest becomes a problem, which can be different for various areas of management. For example, on a golf green, the economic threshold is zero and all pests must be controlled by chemicals immediately. For other areas on-campus, the threshold can be greater than zero and treatment will occur when damage becomes a nuisance or the cost of the replacement plants outweighs recovery of these plants.

A 4-tiered approach to Integrated Pest Management (IPM) will be used wherever possible to have minimal impact and protect the environment. IPM plans will be based on an understanding of biology and ecology, and mechanical methods will be evaluated before pesticides are used.

The four tiers:

**Tier 1:** Identify the Pest and Monitor- Properly identifying the pest and watching the area to see the extent of the damage prior to other steps being performed.

**Tier 2:** Set Action Threshold- Action Based on location and use of area on-campus to determine the economic threshold of next steps are needed.

**Tier 3:** Prevention-. See if steps can be taken to prevent future risk of pests.

**Tier 4:** Control- This is performed culturally, physical/mechanical, biological, and chemical. Chemicals are the last step if no other means of treatment can be taken

Campus is divided into four different areas of maintenance. Area I maintenance is the top-level maintenance on-campus, such as tour routes, golf facilities, and varsity athletic fields. Area II maintenance spaces are still high-profile areas, yet the economic threshold for pests is less. Area III places on campus receive basic maintenance and little to no fertilizer or chemical actions. Area IV receives the least amount of maintenance. These areas may be mowed or maintained once or twice per year or not at all.

If pesticides are used, they will be applied in conformity with state and federal law. Only the most selective pesticide application technique that is deemed effective, and the lowest effective concentration of chemicals will be applied. When a pest breaches the economic threshold, then they will be treated. Spot treating areas will be used whenever possible.

When the decision is made to apply chemicals, the first step is to identify the pest. Once the pest has been identified a pesticide with the lowest toxicity necessary to eliminate the pest is chosen. The treatment is only done to the area with the pest and must be done around the activities to ensure proper safety for the users and campus community. On some occasions, a window of 24 hours of no re-entry in the area of application is required for proper chemical absorption and safety. Signs will be installed to notify individuals to stay out of the area. Misuse of chemicals is harmful to the environment, and they need to be used according to the chemical label. The label on the chemical is the law.

Chemicals are applied as necessary by trained, certified operators throughout the grounds of the university following the guidance of the label on the chemicals being used. Certification for operators is obtained through the state of North Carolina. Pesticide applicators receive training yearly and must maintain enough credits over a five-year period to keep their certification valid. Chemicals are not applied unless the pest is first identified as being a problem. We are advocates of maintaining the landscape and grounds as chemical free as possible.

The current holding facility for all pesticides is located at the Facilities Management building. The Pesticide Shed is inspected annually by the Department of North Carolina Agriculture and Consumer Services to meet regulations. All pesticides that are stored must meet these requirements. As a practice, we do not use pesticides that have a higher rating than “caution” on the label. This is the lowest pesticide rating available in the market, meaning it has the lowest toxicity to the environment and people, and has the least restrictions. The inventory of stored pesticides is updated monthly. Chemicals not used within a year are discarded at the local Department of Agriculture office.