

# Integrated Pest Management Policy for Research Laboratories



## Environmental Health & Safety

### I. POLICY

The University of South Carolina's Integrated Pest Management Policy is based on the CDC's *Biosafety in Microbiological and Biomedical Laboratories (BMBL) 5<sup>th</sup> Edition* (Appendix G), and NIH's *Biomedical and Animal Research Facilities Design Policies and Guidelines*.

Pest control is important because insect and rodent pests:

- Carry disease organisms on or in their bodies.
- Cause physical damage to building facilities (by chewing/gnawing).
- Contaminate and compromise the research environment.
- Are unacceptable in the workplace.

In order to provide safe, effective pest control that is compatible with the biomedical research environment, the university has implemented Integrated Pest Management (IPM) programs in all USC design and construction projects and throughout USC workplaces.

Traditionally, pest control consisted of the general application of one or more pesticides. However, there has been a movement away from relying solely on pesticides to solve pest problems in response to public concerns over pesticide use, pesticide resistance, and the possibility that pesticide applications may contaminate the work environment and expose staff to pesticide residues.

The reliance on pesticides as the sole means to correct pest problems is unacceptable in the biomedical research environment. USC strives to implement effective, long term prevention methods and strategies that work in unison with the building design and its use. Prevention of pest infestation in and around USC buildings contributes to creating a better work and research environment.

Pests are dependent upon biotic factors to provide nourishment and moisture and abiotic factors to provide harborage and ingress into buildings. Through proactive steps taken during building planning, design, construction, and commissioning, resources for pests are minimized, thus diminishing pest infestation during the building's functional life cycle.

## II. INFORMATION

### **Integrated Pest Management (IPM):**

To control pests and minimize the use of pesticides, it is necessary to employ a comprehensive program approach that integrates housekeeping, maintenance, and pest control services. This method of pest control is often referred to as IPM. The primary goal of an IPM program is to prevent pest problems by managing the facility environment to make it less conducive to pest infestation. Along with limited applications of pesticides, pest control is achieved through proactive operational and administrative intervention strategies to correct conditions that foster pest problems.

## III. PROCEDURE

Prompt and effective measures are required to deny pest entry into the research facility. Should pests enter the facility, a process must be in place to eliminate this entry.

### **Sanitation and Housekeeping.**

- A. **Storage:** Food and other personal effects that provide food value or harborage for pests must not be stored in the research laboratory. Unused and/or discarded equipment and materials be promptly removed. All unused equipment or material that must be kept on site should be securely stored in a proper storage area and/or in pest resistant containers.
- B. **Trash Can Use:** Food and other personal effects that provide food value or harborage for pests be double bagged before placing into the trash receptacle on days that housekeeping staff picks up trash. Household trash is picked up two times each week. No food or other personal effects can be left in trash cans on days that trash is not picked up, including weekends. This type of trash must be taken out of the research building and disposed of at home by the person generating it. Questions about university staff housekeeping issues should be addressed to the Facility Services Assistant Director for Custodial Services, who may be reached at 777-4223.
- C. **Recycling Material:** Recycling containers are located in identified areas of research facilities. All material offered for recycling must be placed in these properly marked containers. Containers should be clean and available. If not, personnel should contact the Facility Services Environmental Recycle Manager, who may be reached at 803-960-5152.
- D. **Cooperation:** Laboratory directors, in coordination with the Dean or other designated person/research director should solicit cooperation from adjoining laboratories and assist each other in maintaining sanitary laboratory conditions throughout the research facility.

## **Structural Deficiencies and Building Maintenance**

- A. **Harborage:** Buildings and equipment harboring pests must be repaired promptly. Floors, walls, and ceilings must be of approved tight fitting material, which does not permit entrance and breeding places for pests.
- B. **Pest Entry:**
- 1) Broken areas and cracks in walls and ceilings or separations at adjoining surfaces must be sealed with approved material promptly.
  - 2) Areas accessible by rodents must be sealed with concrete, brick or other approved rodent proof material immediately.
  - 3) Floor drain strainers must be effective and kept in place at all times to prevent rodent entry through sewer lines.
  - 4) Windows that open to the outside must be properly screened to prevent insect entry.
- C. **Contact for Building Maintenance Issues:** Please contact the Facility Services Customer Service Call Center who may be reached at 777-9675 to report building maintenance issues.

## **Integrated Pest Management**

- A. **Monitoring:** All Faculty, students and staff who enter the building are expected to report any visual sightings or other evidence of pests to the appropriate research director who is responsible for determining the significance of the pest sighted.
- 1) **Threshold limit values** (THLV) for pests (i.e. what is normal or acceptable in their research environment before some definitive action must be taken to control the pest) must be established by the individual laboratory research director.
  - 2) **Threshold action levels** (THAL) for pests (i.e. what is acceptable in the various parts of the research facility such as offices versus labs) must be established by the Dean or Research Director in Charge of the facility.
  - 3) **Monitoring devices** (glue boards, pheromone traps, etc.) shall be approved by the research director prior to installing.
- B. **Record Keeping:**

- 1) **Visual sightings or other evidence** of any pests reported to the Research Director must be reported to the Facility Services Environmental Services Pest Control staff.
  - 2) **Safety data sheets (SDS)** on pesticides, pesticide labels, treatment records, floor plans, and pest control inspection reports are maintained in the Facility Services Landscape Services Department located at 720 College Street, Columbia, SC 29208. Contact the Facility Services Landscape Services Pest Control Manager (777-8733) to request a copy of the SDS (safety data sheet).
- C. **Inspection:** Laboratory Directors are responsible for inspecting their laboratories and other work places for pests. The Environmental Services' Pest Control unit has two state licensed pest control technicians who have advanced training in insect control available to assist the laboratory director with inspection services for general insects, rodents, wildlife, termites and other wood destroying organisms. The Laboratory Director will maintain inspection results for review.
- D. **Communication:** A staff member of the laboratory will be designated to meet with pest control staff to assist in resolving facility issues that impact on pest management. Reports communicated verbally and in writing concerning pest activity will be recorded and kept on file in the appropriate research facility. Requests for State certified personnel should be directed to the Facility Services Landscape Services Pest Control staff at 777-8733 or to Facility Services Customer Service Call Center at 777-9675.
- E. **Non-pesticide Control:** Pest Control methods such as trapping, exclusion, caulking, washing, freezing, and heat can control most pests effectively and safely when used in conjunction with proper sanitation and structural repair.
- F. **Program Evaluation and Quality Assurance:** Quality assurance and program review must be performed to provide an objective, ongoing evaluation of pest management activities. The research director is responsible for evaluating the effectiveness of all pest control procedures implemented and approving or redirecting efforts to control pest found in their research facility.
- G. **Use of Pesticides in Research Facilities:** The United States Environmental Protection Agency (EPA) is charged with oversight of the Federal Insecticide, Fungicide, and Rodenticide Act which governs the use of pesticides in the environment. EPA has vested their enforcement authority in Clemson University's Department of Pesticide Regulation who in turns administers the South Carolina Pesticide Act. This act in part requires *that any pesticide applied on the property of another be done so by a person licensed by the Department of Pesticide Regulation or by a person working directly under the licensed pesticide applicator*. The University has employees who are certified under this act to apply pesticides.

- 1) **Preventive applications** of pesticides are not encouraged in any Research Facility. As such, pesticide application(s) are restricted to areas where pest populations cannot be controlled by other means.
- 2) **When pesticides are applied:** The research director must approve the pesticide type and date and time of application. Normally the least toxic product that has efficacy against the particular identified pest will be used.
- 3) **Pest identification:** The University has staff trained to identify pests and recommend treatment protocols. From time to time if a unique and/or difficult pest to identify is found, pest control staff has access to Entomologist/Vertebrate Specialist through the Clemson University Entomology Department and/or Local County Extension Agent.
- 4) **Responsible Persons:** The Facility Service Landscape Services Pest Control Management staff are responsible for supervising the actual application of pesticides on University property and may be reached at their work phone 777-8733 or through Facility Services Customer Service Call Center at 777-9675.
- 5) **Storage:** All pesticides are stored at a central location in a designated and posted area. No pesticides may be stored at any other location without the expressed written permission of the Facility Services Landscape Services Pest Control Manager or his staff.
- 6) **Permitted Formulations of Pesticides:** Residual insecticides and some non-residual insecticides are commonly applied as liquid sprays in the form of emulsions, wettable powders, or solutions. They may also be applied as baits, powders or pellets. The research director in consultation with the pest control technician will determine which form of pesticide will be used. The Research Director has final authority on what type of pesticide formulation if any will be used. Licensed pest control technicians or someone acting under their supervision must make the actual application as required under the Pesticide Control Act.
- 7) **Permitted Applications of Pesticides:** The Research Director in coordination with the licensed pest control technicians will determine the safest appropriate method of application in accordance with the pesticide label and safety data sheet. The following methods of application have been permitted under the authority of state and local pesticide regulations.
  - a. Crack and Crevice
  - b. Spot treatment less than 2 square feet
  - c. General surface treatment
  - d. Band or exterior perimeter surfaces

- 8) **Conditions of Use:** The EPA pesticide label governs conditions of use. The following categories further define and govern the use of pesticides in the research setting.
- a. Outside premises include all areas of the research facility within 5 feet of the exterior wall and up the exterior wall 3 feet. Precautions are required to insure that pesticides are not inadvertently transferred to habitable or research areas inside the research facility.
  - b. Research areas of the building include any part of the building where controlled investigations or research is actually being conducted or any area where background recordings of pesticides may jeopardize the research effort.
  - c. Edible product areas include any area where food is prepared or consumed by people or other life forms such as animals are kept and or fed.

**H. Rodenticides:** Rodenticides are not authorized for use in the research facility. Any application of rodenticides on University property must be supervised by a pest control technician licensed in Public Health Pest Control. For information on this topic contact the Facilities Landscape Services Pest Control Manager or his staff at 777-8733 or call Facility Services Customer Service Call Center at 777-9675.

**I. Safety:** Every effort must be made to insure that pesticide application/exposure is held to a minimum to insure the safety and welfare of Faculty, Students, Staff and Research Projects.

#### **IV. FACILITY CONTACTS**

For help with specific pest management issues, contact the following individuals through Facility Services Customer Service Call Center at 777-9675 or at the phone numbers listed below:

- Facility Services Custodial Services Manager
  - Marion Morris: 777-4223
- Facility Services Environmental Services Recycle Manager
  - Rob Rayborn: 803-960-5152
- Facility Services Landscape Services Pest Control Technician
  - David Whitaker: 777-8733 (cell: 803-422-5734)
- Facility Services Landscape Services Spray Technician
  - Curtis Suffridge: 777-8733 (cell: 803-315-3182)
- Facility Services Landscape Services Pest Control Manager
  - Tommy Fallaw: 777-8733 (cell: 803-413-6623)