

APPENDIX 1

INTEGRATED PEST MANAGEMENT PLAN FOR BUILDINGS

1. INTRODUCTION:

- 1.1. This plan applies to all the buildings of UM6P campus and will be consulted prior to any pest management actions within the university buildings.
- 1.2. The plan ensures a four-tiered approach to addressing these pests, minimizing their impact, and maintaining a safe and pleasant environment. It outlines procedures for assessing pest problems inside UM6P buildings, selecting appropriate control measures, and coordinating pest management professionals as needed.

2. FOUR-TIERED APPROACH:

- 2.1. **Set action thresholds:** The first step of this approach required establishing specific pest population levels (thresholds) at which pest control actions will be initiated to prevent unacceptable levels of damage. This step is implemented in this order:
 - 2.1.1. Determine the types of pests common to buildings, such as ants, cockroaches, rodents, spiders, and flies.
 - 2.1.2. Set action thresholds based on the type of area and pest type as the following:
 - ✓ Low Tolerance: Kitchens, food storage areas, and health care facilities (e.g., any presence of cockroaches, rodents, or flies).
 - ✓ Moderate Tolerance: Offices, common areas (e.g., up to 5 ants in a week or 3 spider sightings per week).
 - ✓ High Tolerance: Storage or mechanical rooms (e.g., presence of a few insects or rodents might be acceptable unless signs of infestation are noted).
 - 2.1.3. Clearly define and document thresholds for each pest type and area.
- 2.2. **Monitor and identify pests:** The second step of this approach requires a regular inspection and monitoring of buildings to accurately identify pest species and population levels. This can be done as follows:
 - 2.2.1. Conduct regular inspections of all interior areas, focusing on pest-prone zones such as kitchens, bathrooms, storage areas, and utility rooms.
 - 2.2.2. Place sticky traps, pheromone traps, or bait stations in strategic locations to monitor pest activity. Check traps regularly and document findings.
 - 2.2.3. Accurately identify pests caught in traps or sighted during inspections. This may involve consulting pest identification guides or professionals.

- 2.2.4. Maintain detailed records of pest sightings, trap counts, and identification results to help track pest population trends over time and evaluate the effectiveness of control measures.

2.3. Prevent or Remove Conditions that Attract Pests: The third step of this approach requires implementing measures to reduce the attractiveness of the interior environment to pests and eliminate potential entry points by adhering to the following measures:

2.3.1. Food and Waste Management:

- 2.3.1.1. Store food in sealed containers and keep food preparation and eating areas clean.
- 2.3.1.2. Use sealed trash bins, ensure regular removal of waste, and clean bins frequently.
- 2.3.1.3. Clean up spills, crumbs, and other food residues promptly.

2.3.2. Sanitation:

- 2.3.2.1. Establish routine cleaning schedules for floors, countertops, and equipment.
- 2.3.2.2. Repair leaky faucets and plumbing to eliminate water sources.
- 2.3.2.3. Ensure proper ventilation to reduce humidity.

2.3.3. Structural Maintenance:

- 2.3.3.1. Close gaps, cracks, and other openings in walls, floors, and around pipes.
- 2.3.3.2. Install and maintain door sweeps, and ensure windows and doors close tightly.

2.3.4. Pest Harborage:

- 2.3.4.1. Reduce clutter where pests can hide or build nests.
- 2.3.4.2. Regularly inspect and clean under and behind furniture and equipment.

2.4. Pest control strategies: The last step of this approach is applied when pest populations exceed action thresholds, and it becomes necessary to employ appropriate control measures that are safe, effective, and environmentally responsible.

- 2.4.1. The buildings will be periodically inspected for the presence of pests. After preventive measures, if any pests are detected, integrated (non-chemical) methods will be implemented as the first control step, including sanitation measures, exclusion measures, and the use of traps.

2.4.2. Non-Chemical Control: A variety of non-chemical control methods will be used to manage pests, including physical traps, barriers, and environmental modifications.

2.4.3. Chemical Control: If integrated pest control measures are unable to resolve the problem, less chemical alternatives will be used prior to resorting to toxic pesticides. This approach aims to protect the health, safety, and well-being of the community. Toxic pesticides will only be used when all alternative, integrated, and least toxic pest control measures have been exhausted, and the pest action threshold has still been exceeded. This approach typically includes Rodent control, Insect control, Disinfection and

Reptile control. In such cases, the tenant communication plan outlined below will be implemented to ensure transparency and safety.

3. Tenant Communication plan

- 3.1. When it is determined that a pesticide may need to be used in order to manage pests, the least hazardous material will be chosen. Additionally, prior to treatment, the plan will be shared with Health, Safety and Environment (HSE) staff for approval to proceed with the application.
- 3.2. The overall responsible party will share the typical treatment plan with all tenants once per semester which will include application mode, used products, and Safety Data Sheets (SDS).
- 3.3. The overall responsible party will post a sign at the application site, such that an occupant reading the sign can choose to avoid the application area. For an emergency application of a pesticide, tenants must be notified within 24 hours of the application and given an explanation of the emergency. If pests are observed in a tenant space, it is the responsibility of the tenant to notify the overall responsible party of the pest via email. Within one business day, the overall responsible party will contact the pest control service provider to inspect the situation and determine whether the regular action threshold or the emergency action threshold has been met. The pest control service provider will then take the appropriate actions.

4. Emergency treatment

- 4.1. Regular treatment includes the use of first non-chemical controls (sanitation, exclusion, traps using non-chemical baits), followed by the use of least-toxic control methods if the situation is not resolved, and then non-least toxic control methods if the situation is still not resolved. Even if no pests are detected, preventive measures are implemented to avoid infestation.
- 4.2. Emergency treatment includes the use of the most effective control method as a first step, which may be chemical.

Pest type	Action thresholds
Ants	Regular treatment will be performed if any ants are noted in the building and their presence is confirmed through monitoring. Emergency treatment may be used if there are ten or more reported cases or complaints of ants within a two-day period.
Other insects	Regular treatment will be performed if nuisance insects are noted in the building and their presence is confirmed through monitoring. Emergency treatment may be used if there are ten or more reported cases or complaints of nuisance insects within a two-day period.
Cockroaches	Regular treatment will be performed if any cockroaches are noted in the building and their presence is confirmed through monitoring. Emergency treatment may be used if the presence of cockroaches is confirmed in two different spaces within the building OR if the presence of a large population of cockroaches is confirmed in one space in the building.

Rats, Mice	Emergency treatment may be used if the presence of rats or mice is confirmed in two or more different spaces within the building.
Bed bugs	Emergency treatment may be used if the presence of bed bugs is confirmed in the building.
Other occasional invaders	If the other occasional pests pose a threat to occupants' health, emergency treatment may be sought. Otherwise, regular treatment will be performed.

APPENDIX 2:

INTEGRATED PEST MANAGEMENT PLAN FOR LANDSCAPES

1. Introduction:

- 1.1. As the first impression for visitors and prospective students, UM6P's landscape is a critical asset for the University. The beauty of the campus' well-maintained landscapes 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. In this regard, UM6P is committed to ensuring that the campus landscape is protected, maintained and enhanced in ways that are both sustainable and responsible. With those goals in mind, this protocol has been developed.
- 1.2. This plan applies to all exterior spaces of UM6P campus and will be consulted prior to any pest management actions within the campus grounds. The plan ensures a four-tiered approach to addressing these pests, minimizing their impact, and maintaining a safe and pleasant environment. It outlines procedures for assessing pest problems on UM6P landscapes, selecting appropriate control measures, and coordinating with pest management professionals as needed.

2. Four-tiered approach:

- 2.1. **Set Action Thresholds:** The first step involves establishing specific pest population levels (thresholds) at which pest control actions will be initiated to prevent unacceptable levels of damage. This step is implemented in the following order:

- 2.1.1. Identify Key Pests: Determine the types of pests commonly found in exterior areas and landscapes, such as insects, rodents, ants, snails, and various bird species.
- 2.1.2. Determine Tolerance Levels:
- ✓ Low Tolerance: Sensitive areas like vegetable gardens, flower beds, and outdoor dining areas where any significant pest presence (e.g., rodents, destructive insects) can lead to damage or pose health risks. For this type of area, a high monitoring frequency is recommended—ideally weekly, or even twice a week during high-risk periods (spring/summer)—in order to quickly detect any infestation.
 - ✓ Moderate Tolerance: General landscape areas, such as lawns, trees, and shrubs, where some pest presence is tolerable but significant damage (e.g., defoliation, disease spread) would trigger control measures. For this type of area, a biweekly monitoring frequency is generally sufficient, with an increase to once a week in case of conditions favorable to pest development (high temperatures, humidity, or a history of infestation).
 - ✓ High Tolerance: Areas like naturalized or wild zones, where a higher level of pest presence is acceptable (such as Insect Shelters) unless it threatens ecosystem balance or spreads to more sensitive areas. A monthly monitoring frequency is generally sufficient,

with additional spot checks in case of significant ecological changes or reports of pest spread to low-tolerance areas.

- 2.1.3. Document Thresholds: Clearly define and document thresholds for each pest type and area. For example, note the number of pests per plant or square meter that would trigger intervention.

2.2. *Monitor and Identify Pests:* The second step requires regular inspection and monitoring of exterior spaces and landscapes to accurately identify pest species and population levels. This can be done as follows:

- 2.2.1. Conduct regular bi-weekly or monthly inspections of all landscaped areas, focusing on pest-prone zones such as gardens, lawns, and outdoor structures.
- 2.2.2. Place sticky traps, pheromone traps, and bait stations in strategic locations to monitor pest activity.
- 2.2.3. Accurately identify pests caught in traps or observed during inspections. This may involve consulting pest identification guides or enlisting the help of pest management professionals.
- 2.2.4. Maintain detailed records of pest sightings, trap counts, and identification results to help track pest population trends over time and evaluate the effectiveness of control measures.

2.3. *Prevent or Eliminate Conditions That Attract Pests:* The third step involves implementing measures to reduce the attractiveness of the exterior environment to pests and eliminate potential entry points. The following measures should be adhered to:

- 2.3.1. Landscape and Garden Management:
 - 2.3.1.1. Implement proper irrigation techniques to avoid overwatering or water pooling, which can attract pests like mosquitoes and fungi.
 - 2.3.1.2. Use mulch to suppress weeds and retain soil moisture while avoiding excessive mulch near plant stems. Regularly prune plants to remove dead or diseased branches and improve air circulation.
- 2.3.2. Sanitation:
 - 2.3.2.1. Ensure that outdoor waste bins and trash cans are regularly emptied and kept clean to avoid attracting pests such as rodents and insects.
 - 2.3.2.2. Regularly remove plant debris, fallen leaves, and other organic matter that can serve as breeding grounds or shelter for pests.
- 2.3.3. Structural Maintenance:
 - 2.3.3.1. Seal cracks and gaps in building exteriors, foundations, and walls to prevent pests such as rodents and insects from entering indoor spaces.
 - 2.3.3.2. Regularly inspect and repair outdoor structures (e.g., sheds, greenhouses) to prevent pests from nesting or burrowing.

2.3.4. Habitat Modification:

2.3.4.1. Choose pest-resistant plant varieties and native species that are less susceptible to local pests and diseases.

2.3.4.2. Eliminate standing water sources where pests like mosquitoes can breed, such as birdbaths, gutters, and puddles.

2.4. **Pest Control Strategies:** The fourth step is applied when pest populations exceed action thresholds, and it becomes necessary to employ appropriate control measures that are safe, effective, and environmentally responsible.

2.4.1. Non-Chemical Control:

2.4.1.1. Introduce or encourage natural predators and beneficial insects, such as ladybugs, predatory beetles, or nematodes, to control pest populations naturally.

2.4.1.2. Use barriers such as row covers or netting to protect plants from pests like birds, deer, and rabbits. Use hand-picking or water sprays to remove pests like caterpillars and aphids.

2.4.2. Chemical Control:

2.4.2.1. Apply chemical controls as a last resort and only to affected areas and follow proper application procedures to avoid broad-spectrum use which affects a wide range of organisms, including beneficial ones.

2.4.2.2. Toxic pesticides may only be used under specific circumstances, such as when less chemical and alternative methods have failed, and pest populations continue to exceed action thresholds.

2.4.2.3. Ensure that proper notification is given to relevant staff before applying non-least toxic pesticides. Follow all safety guidelines and label instructions.

3. Emergency treatment

3.1. In cases where an immediate threat to landscape health arises (e.g. rapid infestation or damage to critical plants), emergency treatment may be applied using the most effective control method available right away. This method may include non-least toxic chemicals if they are deemed necessary to quickly control the situation and prevent further damage.

Pest type	Action thresholds
Ants	No treatment necessary
Other insects	Regular treatment will be performed if nuisance insects are noted in landscapes and their presence is confirmed through monitoring. Emergency treatment may be used if there are ten or more reported cases or complaints of nuisance insects within a two-day period.
Cockroaches	Regular treatment will be performed if cockroaches are noted in landscapes, and their presence there is confirmed through monitoring.

	Emergency treatment may be used if a large population of cockroaches is confirmed in one landscape site.
Rats, Mice	Regular treatment will be performed if rats or mice are noted outdoors, and their presence is confirmed through monitoring. Emergency treatment may be used if any noticeable mice burrows or activity exist around buildings.
Crickets	No action unless perceived as causing problems. Emergency treatment: Use appropriate traps (glue traps, pheromone traps, mechanical traps) to quickly reduce the population. Apply specific insecticides or rodenticides, following safety instructions and prioritizing products with low environmental impact. Isolate the affected area: restrict access to people and pets during treatment to avoid any health risks.
Weeds	Regular treatment will be performed if any extreme weed cover is noticed. Emergency treatment may be used if they become aesthetically displeasing, potentially damaging to buildings entry or block visibility needed for security.
Fungal diseases	Regular treatment will be performed based on monitoring and severity. Emergency treatment will be initiated if the spread threatens plant health or nearby structures.
Insect attacks	Regular treatment will be performed based on severity and impact of the attack. Emergency treatment will be used if the attack threatens ecosystem balance or causes widespread damage.
Root System Diseases	Regular treatment will be performed if root system diseases are noted and confirmed through monitoring. Emergency treatment may be applied if plants are dying or showing significant stress.
Other occasional invaders	If the pests pose a health threat, emergency treatment may be sought. Otherwise, regular treatment will be performed.

APPENDIX 3:

INTEGRATED PEST MANAGEMENT ACCIDENT GUIDELINES

- 1.1. The IPM accident guidelines are designed to provide clear protocols for addressing accidents or unintended exposures during pest management activities. These guidelines aim to ensure the safety of UM6P community, and outline steps for prompt response, containment, and reporting of incidents, as well as prevention measures to reduce the likelihood of future accidents.
- 1.2. Facility Management and HSE entities should be notified immediately of all pesticide-related accidents, including those involving a pest control vehicle.
- 1.3. The guidelines for responding to the accident types are as follows:
 - 1.3.1. **Vehicle Accident:** In case a vehicle accident involves a pest control vehicle, first determine if there are any injuries. If there are injuries, immediately call emergency (if the contractor team is injured, HSE needs to be involved, and if it is a community member, Health Center needs to get involved). If a liquid is leaking from a container or the vehicle, contain its spread as much as possible. If the liquid appears to be gasoline or fuel, stay clear and keep others away from the vehicle. Also, do not allow ignition devices in the area, e.g., open flames, lit smoking materials, etc. If the leaking liquid appears to be a pesticide, contain the flow to the extent possible and immediately notify the facility manager.
 - 1.3.2. **Ingestion/Inhalation of Pesticide:** If someone appears to have ingested a pesticide, emergency is to be called immediately. An effort is made to determine what pesticide could have been ingested. After emergency services are notified, the facility manager is contacted.
 - 1.3.3. **Eye Contamination:** If a pesticide or any other harmful liquid or dust gets into someone's eye, rinse it out with clean water referring to any of the restrooms or water fountains located at different areas of campus. The Facility Manager is to be notified of the exposure, and during work hours, the person will be transported to the health center. The Safety Data Sheet (SDS) for all pesticides should be located in the Facility Management Office. The information in the MSDS should be used to determine any medical treatment.
 - 1.3.4. **Dermal Exposure to Pesticides:** In the event of dermal exposure to pesticides, the skin should be washed as soon as possible with plenty of soap and water. The facility manager is to be notified immediately. If clothes are contaminated with a pesticide, they should be removed and stored in a plastic bag until they can be washed. If the exposure is through pesticide-soaked clothing, the affected skin is to be washed immediately. Clothing contaminated with pesticides is washed separately from other clothing. A pesticide-contaminated open cut or wound must be washed thoroughly before seeking medical attention.