Integrated Pest Management Plan

Penn State University – University Park Campus

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# I. Introduction

 Integrated Pest Management, or IPM, is a decision-making process that seeks to address pest problems by prevention, emphasizing practices such as sanitation, exclusion, and non-chemical devices/practices. Thus, IPM quite often leads to an overall decrease in the amount and/or specific types of pesticides used while more effectively suppressing pests.  Enhancement of IPM strengthens Penn State’s sustainability initiatives and will lead to improved health and safety for both people and the environment.

There are many reasons to use IPM. It is cost-effective, reduces hazards due to pests and pesticides, and is less polluting. Many of these benefits come about through pesticide use reduction, and/or more considered choices of pesticides when needed. Although many pesticides today are much less harmful than those used many years ago, they still are poisons that are meant to kill weeds, insects, fungi, and rodents.  Pesticides can present risks not only to the applicators, but also to people who may come in contact with them on food, inside buildings, on lawns, and on athletic fields. At Penn State we have a few employees/students who are hypersensitive to pesticides, and applications can cause them immediate illness. National-scale studies by the U.S. Centers for Disease Control show that our bodies already carry numerous pesticide residues. The U.S. Geological Survey of 20 large watersheds and groundwater across the nation reveal widespread contamination by pesticides. Reducing hazardous pesticide use on our campus can help lessen all types of exposure to these compounds.

IPM strongly relies on preventative actions to *eliminate conditions conducive* to weeds, insects, rodents, and other pests, whenever possible. Once a pest situation has been identified, an IPM approach offers a range of options and tools for pest control including physical, cultural, biological, and chemical – including the judicious use of selected pesticides, if needed. The process begins with a full understanding of pest biology and determining which pests pose actionable problems in specific areas. This can be different for different areas, and management zones can be established.  For example, food service establishments have zero tolerance for pests while there may be some tolerance while implementing structural changes to address pests in an academic building.

Successful IPM relies on the collaboration of all stakeholders from PSU management through clients such as faculty, students, and visitors. An awareness and education program will inform these stakeholders and explain their roles and responsibilities in IPM. Moreover, the Campus IPM Program provides an excellent platform for demonstration of biological, management and social principles learned in the classroom by Penn State students.

In most areas on our campuses, we know what the problem pests are because we keep meticulous records over the years. Using this knowledge, we can take the first step in implementing IPM – establishing routine inspections and environmental assessments.  The goal is to identify conditions conducive to pests and remedy them *before* pests can colonize and thrive.  For indoor pests, prevention may involve structural changes (e.g., fixing a broken screen, caulking cracks and crevices) or performing better sanitation. An important part of IPM is to monitor regularly for pest presence in order to “nip them in the bud” and provide clues as to the sources of an infestation.  Actions to control pests can include anything from structural/physical controls to biological controls to least hazardous pesticides.  Our goal is to start with prevention, and then if needed, to work up the list, using pesticides only after other means have been exhausted.  In some cases, pesticides may be the only means to control a pest, and then it is important to make sure that the timing of the pesticide application considers the life cycle of the pest and that the pesticide used is the least hazardous, most targeted for the situation.

# II. Scope

While IPM can be implemented anywhere and in any situation, this plan applies to the core area of the University Park campus. It addresses pests inside the buildings and in the areas immediately adjacent to each. It does not apply to landscaped areas; a separate IPM Plan has been established for these areas that is administered by the Office of Physical Plant’s Landscape group.

Recognizing initially that it would be difficult to implement this plan at all locations immediately, the Business Building was used as a pilot. However, as the benefits of the plan became clear, it was quickly expanded to cover the University Park campus.

This plan forms the basis for actions taken in response to pest issues in any buildings. Pests include any organisms causing harm to humans or their property and include vertebrates, invertebrates, insects, fungi, etc. any that are detrimental to the property, a nuisance to building occupants, a health risk, or unwanted on the building grounds for other reasons.

# III. Goals

Penn State has embraced sustainability as a core value and uses the following definition: the simultaneous pursuit of human health & happiness, environmental quality, and economic well-being for current and future generations. This IPM plan conforms to these values to provide our building occupants with a safe and healthy environment, while ensuring that pest problems are addressed effectively and economically. IPM tactics should be considered at all points in a building’s lifecycle from design and construction to routine maintenance procedures.

## Design for Exclusion

Prevention of pest problems begins with building design. Many of the buildings on the Penn State University Park campus are old and were decidedly not built with pest prevention in mind. Today we know that relatively simple design features can substantially reduce pest control needs and costs in buildings and landscapes. In addition, many of these features, like proper door sweeps and windows that close tightly, also save energy.

Rarely have pest preventive tactics been included comprehensively at the design stage of buildings. In an attempt to provide a manual of best design practices, SF Environment produced “Pest Prevention by Design -Authoritative Guidelines for Designing Pests out of Structures.” This document will serve to guide Penn State on design features that should and should not be included in our new buildings, and will assist in providing solutions to problems in existing buildings, with the goal of pest exclusion. In addition, new buildings are designed to LEED standards – this closely aligns with the goals of IPM, which include reduced use of pesticides. We recognize that incorporating these standards will be a process and we commit to beginning it with the adoption of this IPM Plan.

## Education

Everyone (employees, faculty, students) has a role to play in IPM, so community awareness about the causes of pest problems and participation in the IPM approach is a key element. It is a goal of the IPM Plan to provide everyone with the information that they need to understand how their actions have a role in pest prevention. In addition, specific training will be provided for key personnel.

Faculty, staff, and students need to understand their role in reducing pest problems. They need to:

* Report pest issues through the Work Control Center, their Facility Coordinator, their supervisor, or through Residence Life;
* Report pest conducive issues such as broken windows, screens, etc. to their Facility Coordinator, their supervisor, or through Residence Life;
* Ensure that food is properly stored so it is not attractive to pests; and
* Reduce clutter and practice good sanitation.

Facility staff provide a more focused approach to pest control than building occupants. They need to:

* Understand their role in recognizing and reporting pest problems;
* Understand the relationship between building maintenance needs and pest problems;
* Modify their activities to include pest prevention and exclusion in building maintenance;
* Report building issues that are allowing pests entry in their work areas;
* Be aware of pest problems in their buildings and report any to the Work Control Center; and
* Work with the Campus IPM Program to ensure IPM approaches are used in daily activities.

Penn State Administration provides support for the IPM Plan. They need to:

* Recognize the Campus IPM Program as an integral part of campus management;
* Ensure the integration of the Campus IPM Program with other campus facilities management efforts; and
* Ensure the IPM activities are part of campus strategic planning activities.

In return the Campus IPM Program will provide up to date information and education for all of these stakeholders.

## Indoor Pest Exclusion

Prevention of the movement of indoor pests through proper maintenance of our buildings is the most important step in pest control, and in the long run is the most cost effective. Movement prevention excludes pests from uninfested areas, minimizing the scope of pest control activities. A variety of inspection checklists are used by PSU staff to identify problem areas in their workplaces. See Section V, Standard Operating Procedures and Implementation Strategies, for more detail on these procedures.

When repeat or significant pest problems have been identified to our pest control vendor, they will identify any issues to the IPM Committee that are contributing to the pest problem. These issues will be disseminated to the Penn State entity responsible for the repair/correction.

Pest exclusion has other benefits because activities such as sealing against pest entry also improve building energy efficiency.

## Outdoor Pests

With the exception of vertebrate pests and insects that may enter buildings, outdoor pest issues are the responsibility of the Physical Plant Landscape Services, who have a separate IPM Plan. However, management of outdoor pests can affect indoor pests, so the indoor and outdoor IPM plans are coordinated. A meeting of the two groups is held periodically.

# IV. Roles and Responsibilities

## Integrated Pest Management Committee

The Integrated Pest Management Committee (formed in 2010) is made up representatives of the Physical Plant, Housing and Food Services, Environmental Health and Safety, and academia, and it is responsible for the overall implementation of IPM at the University Park Campus. The IPM Committee meets monthly during the academic year. The IPM Committee is responsible to evaluating performance and making updates to this plan as necessary.

Members of the IPM Committee and their roles and responsibilities are provided in the table below:

| **Title/Name** | **Responsibilities** |
| --- | --- |
| IPM Coordinator/ Lysa Holland | * Ensure that this plan is executed * Coordinate meetings of the IPM Committee * Triage pest issues that are not easily resolved through standard protocols * Ensure that hypersensitive people are identified to pesticide applicators for proper notification * Approve the use of pesticides other than Tier III when necessary * Provide proper notification to occupants through the Safety Officer when non-least toxic pesticides are applied |
| Custodial Programs Manager/Erik Cagle; Facilities Supervisor/Todd Morgan & Dave Coleman | * Serve as Physical Plant point of contact * Oversee pest control contracts * Oversee work performed by the pest control vendors * Ensure that the contracted pest control vendors are fully trained on this plan and adhere to the plan procedures * Coordinate site visits by the vendor for regular inspections and as needed for implementation of pest controls |
| Assistant Directors Housing/  Dave Manos & James Ellis | * Serve as point of contact for housing pest issues * Lead IPM initiatives for bed bugs * Ensure students living in housing, and housing and residence life staff, are educated on their roles in implementing IPM |
| Assistant Director Food Services/  Geno Corradetti | * Serve as point of contact for food service pest issues * Ensure food service staff are educated on their roles in implementing IPM |
| Pest Control Vendor | * Adhere to the procedures outlined in this plan * Identify pests during site visits and inspections * Report the results of site visits and inspections to the Work Reception Center or other reporting entities for Housing and Food Services * Notify the IPM Coordinator when pest action thresholds are reached or exceeded that require other than a Tier III pesticide |
| Professor of Entomology/  Ed Rajotte; Asst. Professor of Entomology/Sara Hermann | * Serve as subject matter expert for IPM Committee * Integrate PSU IPM Program into classes; provide students with the opportunity to participate in IPM endeavors on campus |

## Facility Staff

Facility staff are the frontline personnel in our buildings and they play a critical role in implementing IPM by ensuring that pest entry points and harborage points are identified and corrected. These maintenance and custodial staff use a variety of checklists to identify problem areas in their workplaces. These staff include food service workers, custodians, housing maintenance staff, and building preventative maintenance staff.

## Pest Control Vendor

The pest control vendor is responsible for adhering to the procedures outlined in this IPM plan and reporting the results of site inspections to the IPM Committee. IPM principles have been embedded in the service contract agreed to by Penn State and the vendor. If at any time integrated and alternative pest control methods fail and chemical pesticides other than Tier III are necessary, the pest control vendor must notify the IPM Coordinator prior to using these pesticides.

The pest control vendor who is responsible for indoor applications is required to be either Green Shield certified or GreenPro certified. These certifications ensure that the vendor is adequately trained in Integrated Pest Management.

## Penn State Community

Everyone is responsible for reporting pest issues. Each occupant can do this through the Work Control Center, their Safety Officer, their supervisor, or through Residence Life. When the use of non-least toxic pesticides is necessary, the IPM Coordinator will notify the Safety Officer for the area, who in turn is responsible to notify the area occupants in that space.

# V. Standard Operating Procedures and Implementation Strategies

## Pest Control Strategies

### Building Design Criteria

As discussed in Section III, Goals, our first pest control goal in our buildings is exclusion by design. The Penn State Design and Construction Standards are being reviewed with the goal to incorporate strategies identified in the “Pest Prevention by Design” manual. Recognizing that this will be an evolving process, this plan begins by identifying the top ten design criteria based on the known pest problems on campus. The Office of Physical Plant’s Design and Construction division will help to ensure that those design elements are incorporated into our standards.

### Facilities Personnel

The buildings’ interiors and exteriors are periodically inspected for both pests and the presence of conditions which allow pests to enter or establish themselves within the buildings. Preventive and corrective measures will be taken in response to these inspections by either action by the inspector or the submittal of a work order for repairs. Custodians, Food Service staff, Housing staff, and Physical Plant staff will be trained to include pest inspection into their normal area inspections.

During these inspections, the following items are reviewed:

| **Inspection Item** | **Why?** | **What to check** |
| --- | --- | --- |
| Door sweeps and door seals | Any space that can fit a pencil can allow a mouse entry | * Ensure weather stripping and door sweeps are present and maintained in good condition * Ensure doors close fully |
| Clutter, general cleanliness | Pests can take harborage in these areas and clutter can make it difficult to treat pest problems | * Sweep under and behind shelves and appliances * Minimize cardboard boxes * Maintain inspection aisles around bulk stored items, and if possible, stack them off the ground * Ensure packing and shipping trash (bags, boxes, pallets) is promptly and properly disposed of or recycled |
| Floor drains | Cockroaches enter buildings from sewer lines through dry traps; dirty floor drains provide food for pests | * Ensure that water is poured down every drain at least weekly * Ensure leaking traps are repaired * Clean drains in food service areas weekly; others as needed |
| Leaking pipes; moisture build up | Pests need moisture to survive; cockroaches enter buildings from cracked or broken sewer lines | * Ensure that all leaking pipes and sewer lines are repaired * Ensure adequate ventilation for areas where condensation forms frequently |
| Windows and screens | Pests can enter buildings through windows and broken screens | * Ensure broken windows are repaired * Ensure all windows close properly * Ensure torn or ineffective screens are repaired * Close all windows without screens when rooms are unoccupied |
| Pipe penetrations and vents; holes in the building structure | Openings around pipe penetrations are potential insect and rodent runways; open vents allow pest entry | * Ensure all pipe penetrations (electrical conduits, heating ducts, plumbing pipes) are sealed * Ensure any vent to the building exterior is screened * Ensure holes in the building that can allow pests entry are sealed |
| Food storage areas | Rodents are attracted to any area where they can access food; pests such as pantry moths can get into dry goods | * Ensure bulk stored products are not in direct contact with walls or floors * Check that non-absorbent open shelving is used in accordance with HACCP (hazard analysis critical control point) * Check that pest proof storage containers are used where possible * Remove excess cardboard * Ensure floors are free of spillage |
| Waste materials | Items such as food waste and empty soda bottles can attract pests such as rodents and fruit flies | * Ensure that waste is properly disposed * Ensure that waste containers are in good condition * Ensure that compost containers are clean and close properly; replace as needed |
| Loading docks/ dumpster areas | Spilled food is attractive to rodents; open dumpsters frequently attract yellow jackets | * Sweep these areas as needed * Report leaking dumpsters or other trash containers * Ensure these areas are as far from building entrances as practical * Compost containers are to be cleaned by Physical Plant at least twice a year at Food Service areas * Ensure that cooking oil containment structures are cleaned at least twice a year |
| Vegetation | Vertebrate pests can easily jump from tree branches to buildings; mulch next to buildings is inviting to termites, ants, mice, and rats | * Ensure that vegetation, shrubs, and wood mulch are kept >12 in. away from structures * Keep tree limbs and branches away from structures; contact Landscape as needed to address |
| Food preparation areas | These are critical areas to keep clean to prevent health issues associated with pest presence (e.g., cockroaches, rodents) | * Clean surfaces of grease deposits in food preparation and serving areas regularly * Ensure trash and compost is removed daily * Thoroughly clean around and under appliances and furnishings in areas that are rarely moved (e.g., refrigerators, freezers, shelve units) to remove accumulated grease, dust, etc., at least monthly |
| Custodial closets and break rooms | Moisture in these areas is attractive to pests | * Ensure mops are clean when stored * Properly store wet mops and mop buckets (i.e., mops hung upside down to dry, buckets emptied) * Ensure open shelving is used in these areas * Ensure that drains in these locations are addressed (see above section on floor drains) |
| Attics/Penthouses | Small entry points can allow bat roosting or bird nesting | * Inspect at least twice a year for signs of pest entry |
| New construction | New construction should be free of conditions that allow pest entry from the day they open | * Request the Pest Vendor to inspect all new construction for conditions conducive to pests (e.g., unsealed pipe chases or electrical conduits; potential bird roosts or nesting areas, etc.) at the completion of construction |

### Pest Vendor

If any pests are detected, integrated (nonchemical) methods will be implemented as the first control step, including sanitation measures, exclusion measures, and the use of traps.

For insects and rodents, non-chemical baits (such as peanut butter) will be used to trap pests. No chemical baits for rodents are used in areas normally occupied by people, however they may be used in barns or other animal facilities. If chemical rodent baits are necessary, they will only be used as solid blocks places in locked dispensers. No second-generation (single-feed) rodent baits will be used.

If non-chemical pest control measures are unable to resolve the problem, least toxic pesticides will be used prior to resorting to the use of non-least toxic pesticides. The San Francisco Pesticide Hazard Screening List Products have been ranked by hazard (toxicity) and exposure potential (human or environmental) by staff in the City of San Francisco. Those that are considered to be Tier I or Tier II have high or moderate hazards or exposure potential, respectively. Least toxic pesticides include those ranked as Tier III products. The tier ranking of any pesticide can be found at the following website:

<https://www.pesticideresearch.com/site/pestsmart/>

If a pesticide is not listed on San Francisco’s Pesticide Hazard Screening List, the San Francisco Pesticide Hazard Review Process (which can also be found at the link above) will be used to determine whether the pesticide is Tier III (least toxic).

Products that are not regulated as pesticides by the EPA because they primarily contain low-risk ingredients, such as garlic oil, may also be considered least toxic options, even if they are not listed as Tier III. Non-rodent pesticides that exceed the Tier III criteria are considered least toxic if they are used in self-contained baits and placed in locations that are inaccessible to occupants. Rodent baits are not considered least toxic under any circumstances.

Below is the current list of Tier III products that have been approved for use at Penn State:

| **Pest** | **Product** |
| --- | --- |
| Cockroaches | Advion Roach Gel  Advion Roach Bait Arena  Gentrol Point Source |
| Ants | Advion Ant Gel  Advion Ant Bait Arena |
| General Pests | Eco PCO ACU  Eco Exempt D Dust  Intice Granules  Gentrol Point Source |
| Stinging Insects | Eco Jet |
| Termites | Sentricon Baiting System |
| Drain Treatment | Gentrol aerosol |

Non-least toxic pesticides include all chemical rodent baits, any product classified as a Tier I or II pesticide on the San Francisco Pesticide Hazard Screening list, or any product that meets the Tier I or II criteria according to the San Francisco Hazard Review Process (which can also be found at the link above). Non-least toxic pesticides may only be used under the following circumstances:

1. Alternative, integrated, and least toxic pest control measures have been exhausted and the pest action threshold is still exceeded. In this situation, notification (according to the procedures below) must be given to building occupants at least 24 hours before the pesticide is applied to the building or grounds.
2. The emergency action threshold has been exceeded. In this situation, notification (according to the procedures below) must be given to building occupants no more than 24 hours after the pesticide is applied to the building or grounds.

## Pesticide Application Notification

In the event of a non-Tier III pesticide application, the IPM Coordinator will notify the building Safety Officer via email or telephone of the pesticide application, including the pesticide name, the EPA registration number, the treatment location, and the date of the application. The Safety Officer is then responsible for distributing the notification to the occupants in their space. If the area will remain accessible to occupants following the pesticide application, the Safety Officer will post a sign at the application site, such that an occupant reading the sign can choose to avoid the application area (for example, if the pesticide is applied in a break room, all entrances to the break room shall have a sign posted). The sign will also include the pesticide name, the EPA registration number, the treatment location, and the date of the application, and will remain in place for 24 hours. Alternatively, the area will be closed to access for a period of 24-hours.

The Pennsylvania Department of Agriculture (PDA) has instituted a pesticide hypersensitivity registry. All persons listed on the registry are provided with information about pesticide applications that will occur within 500 feet of their residence/office/work area prior to the application. At University Park, a “courtesy” list is also maintained which includes those students, faculty, and staff that are not on the registry but desire notification of pesticide applications in their buildings due to health issues associated with these materials. Anyone with health issues related to pesticides is encouraged to register with the PDA, however if they would like to be included on the courtesy list that can contact the IPM Coordinator; notification of a pesticide application is usually made by email.

## Building Occupants Communication Plan

Information flow is the core of an IPM approach and consists of pest discovery and identification, threat assessment, treatment, and follow-up. Pest discovery can come from routine inspections or reports from building occupants. Building occupants will be encouraged to report pest problems through awareness campaigns.

If pests are observed in a building, it is the responsibility of the occupants to notify the Work Reception Center. They can do this by contacting their supervisor, facility coordinator, safety officer, or by calling the Work Reception Center (814-865-4731) directly. Within one business day, the pest control vendor will inspect the situation and determine whether the regular action threshold or the emergency action threshold has been met. The pest control vendor will then take the appropriate actions.

## Action Thresholds

Pest reports will be assessed as to their potential impact on infrastructure and human health. If pest populations exceed pre-established levels, or thresholds, then action should be taken. For those situations requiring regular treatment, *the first line of defense will be 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 is the situation is still not resolved.

Emergency treatment includes the use of the most effective control method as a first step, which may be non-least toxic.

| **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 or there is evidence of a large number of ants in the facility. |
| Cockroaches | Emergency treatment may be used if the presence of cockroaches is confirmed in the building. |
| Bed bugs | Emergency treatment may be used if the presence of bed bugs is confirmed in the building. Bed bugs are generally treated using a thermal system. |
| 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 within a two-day period or there is evidence of a large number of the specific pest in the facility. |
| Rats, Mice | Regular treatment will be performed if rats or mice are noted in the building and their presence is confirmed through monitoring. |
| Bats | Bats are to be removed from any buildings immediately and released. |
| Groundhogs | Groundhogs are captured with non-lethal traps in non-farm areas and are euthanized, as they are rabies vector species. |
| Skunks | Skunks are captured with non-lethal traps in non-farm areas and are euthanized, as they are rabies vector species. |
| Other occasional invaders | If the pests pose a threat to occupants’ health, emergency treatment may be sought. Otherwise, regular treatment will be performed. |

## Follow-up

Subsequent inspections will determine if the intervention was successful, or further action is required. Records of pest occurrence, control activities and follow-up assessments will be kept to help determine patterns in pest infestations (see below).

## Food Service and Residence Halls Special Provisions

We recognize that in food service facilities and residence halls that there is zero tolerance for pests. In an effort to minimize pest problems at these locations, extra efforts are expended. Cleaning is performed at a higher frequency and pest conducive conditions are corrected proactively. However, a single cockroach in a food service area is unacceptable. Therefore, this plan allows for baits to be used on a continuous basis along with regular monitoring at facilities where these pests are persistent problems. In these cases, baits may be used as cracks and crevices treatment (applied directly in holes, cracks, crevices, and other openings) and/or in tamper-resistant bait stations which insects can readily access. Baits must meet the following requirements:

* Baits are not applied to surfaces that exceed 120-130 degrees Fahrenheit (e.g., hoods, grills, ovens, toasters, steam tables, etc.);
* Baits are not applied to areas that are routinely washed such as cracks and crevices of tabletops, prep areas, food holding surfaces, etc.;
* Baits are not applied to areas where food, food utensils, or food processes may come in contact with them;
* Baits that are applied to exposed surfaces are wiped down with warm soapy water to prevent contact;
* Baits located in tamper-resistant stations are placed in areas inaccessible or off-limits to children;
* Bait tamper-resistant stations are distinctively marked containers designed specifically for holding baits and constructed of metal, plastic, or wood; and
* Baits will consist only of Tier III pesticides.

## Bed bugs

Unfortunately, bed bugs are a reality in colleges and communities now. As bed bug occurrences cannot be prevented, Penn State provides training and awareness on these pests to both our student population and our housing staff. Education and early detection are the only deterrents from bringing a bed bug population home; there is currently no way to prevent bed bugs from spreading other than through, education, vigilance, early detection, and effective treatment.

Our housekeeping staff have been trained to look for bed bugs; at Penn State residence halls, this occurs every time rooms are cleaned (after spring semester and after every summer conference). In addition, in the residence halls, there is a bed bug awareness program which includes bed bug posters on every floor of our residence halls (see Appendix). Out of necessity, due to their “hitchhiking” ability, cryptic nature, and pervasiveness in society, part of our detection protocol is to educate students and residence hall conference guests to be vigilant in watching for bed bugs. We ask that if students even think they have bed bugs in their room to contact the Housing Office in their area immediately. On occasion, we may use bed bug sniffing dogs pre-emptively to help identify bed bug locations.

In the event a residence hall occupant believes they may have a bed bug issue, Penn State has our licensed pest control company perform an inspection. If a bed bug is found in the room, we will affect a whole-room heat treatment of the room including all of the student’s personal belongings.

## Termites

Termites are present throughout Pennsylvania and are occasionally found in Penn State buildings. Termites feed on wood and can cause structural damage to timbers in buildings, it is important that they be addressed. Even if termites are feeding in a building, they maintain contact with the ground by building mud tubes between the ground and their feeding sites. Termites make these earth-colored tubes for a number of reasons, primarily as a protected runway from the earth to the wood they feed on. These tubes also may serve as swarming exits for the winged termites. Tubes may be found on basement walls, on wooden posts, wall studs, mudsills, and door and window trim. Wood embedded in earth or in concrete cellar floors is especially susceptible to termites.

Frequently, a termite infestation is discovered when swarms of the winged reproductive stages of the insects emerge en masse between February and June. The vast majority of termites in a colony are wingless. Termites swarm only after the colony reaches a certain size and weather conditions become optimal for flight. When swarming termites venture out of a nest inside a building, they will try to squeeze through cracks and crevices in the walls and foundation to reach open air for the first time. Since swarming termites are attracted to light, they often can be found near windows or light fixtures. Swarming termites disperse and try to establish new colonies, shedding their wings when they land.

Termite damage is usually the result of years of infestation, and not a sudden onslaught that will cause a building to collapse in a few days. The presence of swarming termites or their wings alone, however, is a sure sign that termites are working in a building. Because this occurs in spring, that is the ideal time for treatment.

Treatment typically consists of underground bait systems. Baiting involves the use of an attractant (wood stakes, cardboard, or other cellulose-based material) to establish termite feeding inside a plastic container sunk into the soil around the infested building. After feeding is established, the bait is replaced with a piece of wood containing a slow-acting pesticide. The baits are periodically checked and replenished as needed. Treatment systems have annual warranties, where the system remains in the ground and continues to be periodically checked.

IPM Committee Termite Summary and Recommendations:

* Ideal time for treatment is in the spring of the year.
* Termite control agreements are to be set up to have the warranty extended for three years.
* Funding:
  + Funding of termite control for Education and General (E&G) buildings is through the building maintenance fund.
  + Self-funded units are responsible for these costs in non-E&G buildings.

# VI. Performance Measurement and Schedule for Reassessment

All pest control activity, including inspections, will be recorded in the IPM tracking tool. The following items will be tracked:

* Work Order number
* Contact name and phone number
* Date of service
* Building name
* Building number
* Room or area
* Pest problem
* Monitoring? (Yes/No)
* Intervention
* If intervention is a non-Tier III pesticide, toxicity level (SF Tier level)
* Preventive or corrective measures needed
* If treatment is a Tier I or II pesticide, date, time, and name of Safety Officer notified

The pest control vendor will record all of this information in the records of service.

# VII. Quality Assurance/Quality Control Processes

On an annual basis, all pest control requests for service will be compiled by the IPM Coordinator and the data will be reviewed by the IPM committee. Problem pests and problem buildings will be identified to determine if a revised approach is needed. The IPM Committee will evaluate performance against the goals specified earlier in this plan. If the goals are not being met, adjustments will be made to this plan in order to facilitate goal achievement, and the pest vendor and Penn State community will be educated on the adjustments made to the plan.

# VIII. Record of Revision

|  |  |
| --- | --- |
| Date | Revision Summary |
| 5/27/2015 | Initial Plan |
| 1/24/2016 | Revised Committee members |
| 3/5/2018 | Revised Committee members |
| 5/18/2022 | Revised Committee members |
| 10/25/2022 | Removed Hospitality Services, added EHS Document Number |

# VIII. Appendix

