# Integrated Pest Management

# University of Texas at Austin

## What is Integrated Pest Management?

Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common sense practices. IPM programs use current, comprehensive information of the life cycle of pests and their interactions with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. IPM programs take advantage of all pest management options possible including, but not limited to, the judicious use of pesticides.

Understanding pests' needs is essential to implementing IPM effectively. Pests seek habitats that provide basic needs such as air, moisture, food, and shelter. Pest populations can be prevented or controlled by creating inhospitable environments, by removing some of the basic elements pests need to survive, or by simply blocking their access into buildings. Pests may also be managed by other methods such as traps, mechanical removal, or pesticides. An understanding of what pests need in order to survive is essential before action is taken.

## Step 1: Inspecting, Identifying, and Monitoring

Inspect site(s), identify, and monitor pest populations for potential problems.

An IPM program consists of a cycle of inspection, identifying, monitoring, evaluating, and choosing the appropriate method of control. Routine inspecting and accurate identification of pests are vital steps in IPM to ensure that control methods will be effective. Once the pest has been identified and the source of its activity isolated then habitat modifications (primarily exclusion) and repair and sanitation efforts may greatly reduce the prevalence of the pest. Monitoring includes inspection of areas for pest evidence, entry points, food, water, harborage, and estimating pest population levels. The information gained through monitoring is evaluated to determine whether the action threshold has been exceeded and what can be done in the way of prevention.

## Step 2: Set Action Thresholds

These are the levels of pest populations or site environmental conditions that require remedial action: An action threshold is the level at which action is initiated. It is determined based on the sensitivities of building occupants. This is how many pests can be tolerated. The action threshold is set by the pest manager and the occupants and should reflect the pest management objective for the site. The presence of a pest does not, in itself, necessarily require action.

When pest populations exceed pre-set action thresholds, action must be taken. Precise recommendations or actions to achieve specific results are an essential part of an IPM program. Specific recommendations should be based on the evaluation of all available data obtained through inspection, identifying, and monitoring.

**Step 3: Applying IPM Strategies to Control Pests**

These include redesigning and repairing structures, improving sanitation, employing pest-resistant plant varieties, establishing best management practices, and applying pesticides judiciously. Pest prevention measures can be incorporated into existing structures. Such preventative measures reduce the need for pesticide applications. These include sanitation, structural repair, employing physical and mechanical controls such as screens, traps, air doors, etc. Specific IPM strategies for specific building sites are provided below.

**IPM Strategies for Indoor Sites:**

**Typical Pests:** Mice, rats, cockroaches, ants, flies, wasps, hornets, yellow jackets, spiders, microorganisms, termites, carpenter ants, and other wood destroying insects. Although beneficial as predators, wasps, hornets, yellow jackets, and spiders can be troublesome.

**Entryways:** (doorways, overhead doors, windows, holes in exterior walls, openings around pipes, electrical fixtures, or ducts):

- Keep doors shut when not in use.
- Place weather stripping on doors.
- Caulk and seal openings in walls.
- Install or repair screens.
- Keep vegetation, shrubs, and wood mulch at least 1 foot away from structures.

**Classrooms and Offices:** (classrooms, laboratories, administrative offices, auditoriums, gymnasiums, and hallways):

- Allow food and beverages only in designated areas.
- If indoor plants are present, keep them healthy. When small insect infestations appear, remove them manually.
- Keep areas as dry as possible by removing standing water and water damaged or wet materials.
- In science labs, store animal foods in tightly sealed containers and regularly clean cages. In all areas, remove dust and debris.
- Routinely clean lockers and desks.
- Frequently vacuum carpeted areas.

**Food Preparation and Serving Areas:** (dining rooms, kitchens, lounges, snack areas, break rooms, vending machine, and food storage rooms):

- Store food and waste in containers that are inaccessible to pests. Containers must have tight lids and be made of plastic, glass, or metal. Waste should be removed at the end of each day.
- Place screens on vents, windows, and floor drains to prevent pests from using unscreened conduits as pathways.
- Create inhospitable living conditions for pests by reducing availability of food and water; remove food debris, sweep up all crumbs, fix dripping faucets and leaks, and dry out wet areas.
- Improve cleaning practices, including promptly cleaning food preparation equipment after use and removing grease accumulation from vents, ovens, and stoves. Use caulk or paint to seal cracks and crevices.
- Capture rodents by using mechanical or glue traps. (Note: Place traps in areas inaccessible to building occupants. Mechanical traps, including glue boards, used in rodent control must be checked daily. Dispose of dead or trapped rodents within 24 hours.)

**Rooms and Areas with Extensive Plumbing** (bathrooms, rooms with sinks, locker rooms, dishwasher rooms, specialized classrooms and laboratories, enclosed swimming pools, and greenhouses):

- Promptly repair leaks and correct other plumbing problems to deny pests access to water.
- Routinely clean floor drains, strainers, and grates. Seal pipe chases.
- Keep areas dry. Avoid conditions that allow formation of condensation. Areas that never dry out are conducive to molds and fungi. Increasing ventilation may be necessary.
- Store paper products or cardboard boxes away from moist areas and direct contact with floor of walls. This practice also allows ease of inspections.

**IPM Strategies for Outdoor Sites:**

**Typical Pests:** Mice, rats, moles, and other rodents. Turf pests: broad leaf and grassy weeds, insects such as grubs or sod webworms, thrips, aphids, and worms. Diseases: brown patch and other ornamental plant diseases.

**Playgrounds, Parking Lots, Athletic Fields, Loading Docks, and Refuse Dumpsters**

- Maintain healthy turf by selection appropriate turf type best adapted for the area. Check university or AgriLife Extension Service for recommendations on turf types, management practices, and other information.
- Raise mowing heights for turf to enhance competition with weeds and conserve water. Adjust cutting height of mower, depending on turf type. Keep mower blades sharp and vary mowing patterns to help reduce soil compaction.
- Water turf infrequently but sufficiently during early morning hours to allow turf blades to dry before nightfall. Let soil dry between watering.
- Provide good drainage and periodically inspect turf for evidence of pest or disease.
- Allow clippings to remain on the turf. Use mulching mowers or mow often to eliminate the need to collect clippings.
- Have soil tested to determine fertility requirements.

**IPM Program for Child Care Facilities:**

- Adhere to Texas Administrative Code, Title 4, Part 1, Chapter 7, Subchapter H, Division 3, Rule 7.150 – Integrated Pest Management Program for School District - as closely as possible as a best management practice.
- Under the responsibility in (a)(2) each school ... shall appoint an IPM Coordinator to implement the IPM plan. This IPM Coordinator shall be a member of the child care facility team so as to fully understand the health, safety, and special needs of the children in the facility.

Effective date: 5/29/12 (This plan shall be reviewed and revise every 3 years.)

Approved by: _____