

**IPM CURRICULUM FOR FACILITY MANAGERS**  
**LOW-RISK INTEGRATED PEST MANAGEMENT TRAINING**

William and Jean Currie, International IPM Institute

**INSTRUCTION UNITS IN THIS LESSON PLAN:**

1. The IPM policy, what it does, what not to do, your role in policy implementation, how to activate pest management help, expectations from Pest Management Technicians.
2. Identify pests.
3. Pest exclusion from site.
4. Sanitation: food, moisture, harborage.
5. Kitchen inspection and monitoring, observation and reporting.
6. Structural and grounds inspection and monitoring, observation and reporting.
7. Low-risk pest management methods.
8. Training objectives.

**PERFORMANCE OBJECTIVES:**

| Unit # | Objective of Performance   | Importance     | Learning Difficulty |
|--------|--|----------------|---------------------|
| 1      | Know the IPM policy, understand roles in policy implementation and know how to get low-risk pest management help.  | Very Important | Moderate            |
| 2      | Be familiar with problem pests and be able to determine if they are incidental or an internal infestation.   | Important      | Moderate            |
| 3      | Recognize entry points for pests and learn how to stop pests from entering.  | Important      | Easy                |
| 4      | Know proper sanitation procedures in food preparation and eating areas.  | Important      | Easy                |
| 5      | Know how to perform a kitchen inspection, monitor for pests and necessary record keeping – homework assignment.  | Important      | Moderate            |
| 6      | Homework assignment review – know how to conduct a thorough and/or routine inspection of a structure. Know how to conduct a thorough and/or routine inspection of grounds. | Important      | Moderate            |
| 7      | Recognize common pests and know low-risk pest management measures that can be implemented without pesticide use – exclusion – sanitation – habitat modification.           | Important      | Easy                |
| 8      | Provide quality training and oversight to enable personnel to transition from reactive to preventive practices for pest management.  | Very Important | Easy to Difficult   |

KEY:

IMPORTANCE: Very important, important, not too important

OBJECTIVE OF PERFORMANCE: Must know, be familiar, have knowledge, understand, perform, demonstrate, etc.

LEARNING DIFFICULTY: Difficult, Moderate, Easy, Moderate to Very Difficult

## FACILITY MANAGERS LESSON PLAN

PREPARATION DATE: May 9, 2008

PREPARED BY: William E. Currie

UNIT OF INSTRUCTION: Low-risk IPM Policy Implementation

TITLE OF LESSON: Policy, roles and pest management help, problem pests, entry points, signs of infestation, exclusion, sanitation, storage, kitchen inspection, monitoring.

INSTRUCTIONAL OBJECTIVE: Facility Managers will know the low-risk IPM policy, their role in implementation, and how to get pest management help. Will become familiar with common pests, readily recognize points of entry, signs of infestation, proper storage practices, good sanitation procedures, how to perform a kitchen inspection and monitor for pests.

TIME ALLOTTED FOR LESSON: 2 hours

METHOD OF INSTRUCTION: Lecture, guided discussion, demonstration

INSTRUCTIONAL RESOURCES: Manual, slides

A/V EQUIPMENT: Flip chart, PPT, slide projector, overhead projector, screen

GENERAL PLAN OF PRESENTATION: Introductions. Attendees will understand the IPM policy and their roles in implementation, how to get pest management help, know the difference between incidental and infestation pests, common pests and how they enter kitchens, exclusion methods, sanitation, how to perform a kitchen inspection, homework assignment.

INTRODUCTION: Names and roles of instructors, student introductions. Why are we here? Reasons for the low-risk pest management policy. What does it do? IPM definition, prevention philosophy, etc.

EXPLANATION/APPLICATION/PRESENTATION:

1. Problem pests – some pests are incidental invaders and others can become an internal infestation.
2. Learn to recognize entry points – any incidence of accidental invasion should immediately trigger a search for possible points of entry. Was it a flying insect? Did it come in through a door left ajar or open too long? Learn to be a detective.
3. Signs of infestation – an established infestation will provide evidence that points to its existence. Cigarette beetles chew holes in cardboard, cellophane and paper. The contents of the package can then spill out onto shelves and floor. Moth larvae leave behind visible webbing or frass, and loose product will “string together. Many pests present themselves in full view. Mites are present when moisture is a problem. They produce a light brown dust that is actually piles of shed skins and dead mites, and the mold will give off a particular scent from the spores. Psocids multiply to high numbers in the presence of moisture and the surface of the product will look “alive.”
4. Proper storage procedures – know the signs of infestation of incoming supplies such as damaged packages, visual signs of pests. Know the importance of keeping storage areas clean and free of clutter, keeping accurate records of any problems. A new infestation will provide much less evidence than an established one, but this is the ideal point of discovery. FIFO is vital as well as accurate record keeping.
5. Proper sanitation – review the importance of eliminating anything that pests such as cockroaches and flies will see as food. Explain why moisture is so vital to insects and why the repair of leaks and the drying out of cleaning equipment is so important. Explain why added effort may be needed to eliminate harborage due to clutter, and remind students why cockroaches love cardboard containers and Pest Management Technicians hate them. The out-of-the-way sites such as corners, floor joints, high shelves, and beneath equipment are the places that escape routine cleaning and often are the source of infestations.

6. Know how to perform a thorough kitchen inspection. Look high and low for signs of pests and the conditions that support them. Be aware of potential entry points and harborage. Good sanitation reduces food and moisture available to pests. Report needed repairs and indications of pest infestations.

CONCLUSIONS/SUMMARY: Low-risk pest management requires dedication and may be tedious and time-consuming when performed correctly. A thorough understanding of why such procedures are so important frequently imparts a degree of significance to even the most mundane task.

HOMEWORK ASSIGNMENT:

1. Read manual.
2. List poor sanitation measures observed.
3. List good storage practices observed.
4. List pests or evidence of pests observed, in detail.

## FACILITY MANAGERS LESSON PLAN UNIT ONE

COURSE DESCRIPTION: Low-Risk Integrated Pest Management Implementation  
 SUBJECT MATTER: Policy, Roles, How to Activate Pest Management Help  
 UNIT OF INSTRUCTION: Unit 1: Lecture, PPT or Overhead Transparencies, 30 minutes

### INSTRUCTIONAL PROCEDURE:

| No. | Instructional Sequence (Tasks)  | Instruction Method (Performance) | Learning Difficulty |
|-----|---|----------------------------------|---------------------|
| 1   | Policy, history, implementation   | Lecture, PPT, overheads          | Easy                |
| 2   | What's different, IPM definition, do's, precautionary principle, approved product list, notification, posting, emergency approval, training | Lecture, PPT, overheads          | Easy                |
| 3   | Don'ts, only licensed Pest Management Technicians apply pesticides, remove harborage (clutter), no BAN, phase out pesticides over time      | Lecture, PPT, overheads          | Moderate            |
| 4   | Roles, sanitation, no food, pest-proof food storage, eliminate clutter, observation and reporting, teach others                             | Lecture, PPT, overheads          | Moderate            |
| 5   | Reportable conditions, pest sighting, pest evidence, droppings, gnawings, webbing, fecal focal points, scattered trash, etc.                | Lecture, PPT, slides, display    | Difficult           |
| 6   | Facilities Manager, point of contact, may examine situation, call to report, information directed to appropriate office                     | Lecture, PPT, overheads          | Easy                |
| 7   | Expectations, Pest Management Technicians respond, emergencies that day, thorough inspection and monitoring                                 | Lecture, PPT, overheads          | Easy                |
| 8   | Low-risk pesticide application, follow-up, repair structural defects, prevent pest access   | Lecture                          | Easy                |
| 9   | Basics of IPM: exclusion, sanitation, habitat modification, inspection, monitoring, low-risk pesticides, records                            | Lecture                          | Moderate            |

INSTRUCTIONAL SEQUENCE: What comes first, chronological order  
 METHOD OF INSTRUCTION: Lecture, demonstration, performance, discussion

FACILITY MANAGER LESSON PLAN UNITS TWO AND THREE

COURSE DESCRIPTION: Low-risk Integrated Pest Management Implementation  
 SUBJECT MATTER: Problem Pests and Signs of Infestation  
 UNIT OF INSTRUCTION: Units 2/3: Lecture, Guided Discussion, Group Performance – 30 minutes

INSTRUCTIONAL PROCEDURE:

| No. | Instructional Sequence (Tasks)  | Instruction Method (Performance) | Learning Difficulty |
|-----|---|----------------------------------|---------------------|
| 1   | Good Bugs/Bad Bugs – every living organism has a role in nature – indoors – low tolerance for critters – unwanted critters and pests – list pests – ants, birds, bats, cats, cockroaches, flies, mice, rats, bees, wasps, spiders, bacteria, virus, molds, fungi, beetles, moths, psocids, etc. | Lecture, PPT, slides, Flip Chart | Easy                |
| 2   | Determine level of importance on list – emergency – urgent – routine – non-essential.   | Guided Discussion                | Moderate            |
| 3   | How do pests get in? Doors – windows – holes in walls – cracks and crevices – vents – drains – deliveries – personnel, etc.   | Guided Discussion                | Easy                |
| 4   | Which pests are incidental? How do we keep them out? Close doors – door sweeps – screens – one-way valves – air doors – clean drains – quarantine deliveries – educate personnel – caulks – repairs, etc. Routine inspection by Cafeteria Manager.  | Guided Discussion                | Moderate            |
| 5   | Which pests are an infestation? Beetles – moths – flies – mice – rats – cockroaches – spilled goods – webbing and frass – pest presence – gnaw marks – urine stains or odors – droppings – water or moisture damage – mold spore odor.  | Lecture, Specimens, PPT, Slides  | Moderate            |

INSTRUCTIONAL SEQUENCE: What comes first, chronological order  
 METHOD OF INSTRUCTION: Lecture, demonstration, performance, discussion

FACILITY MANAGER LESSON PLAN UNIT FOUR

COURSE DESCRIPTION: Low-Risk Integrated Pest Management Implementation  
 SUBJECT MATTER: Deliveries, Storage and Sanitation  
 UNIT OF INSTRUCTION: Unit 4: Lecture, Guided Discussion – 30 minutes

INSTRUCTIONAL PROCEDURE:

| No. | Instructional Sequence (Tasks)   | Instruction Method (Performance)  | Learning Difficulty |
|-----|--|---|---------------------|
| 1   | Know the steps necessary to prevent the introduction of infesting pests – thorough inspection of deliveries – quarantine – return of damaged or infested goods – proper record keeping.  | Lecture, Checklist  | Moderate            |
| 2   | Review procedures for stored products – FIFO, good sanitation (clean shelving and floors), thorough routine inspection to early identify possible problems (check for signs of infestations) – good record keeping                                       | Lecture, Guided Discussion  | Moderate            |
| 3   | Good sanitation means thorough removal of anything pests consider food – accumulated grease on equipment, crumbs, food material in corners of floors and counters, spilled food, damaged bulk containers, dirty floors and walls, etc.                   | Lecture, Guided Discussion  | Moderate            |
| 4   | Moisture management – German cockroaches near dishwashers, sinks and mop closets – leaks – standing water – condensation – also permits mold and fungus.   | Lecture, Guided Discussion, List Moisture Sources                                   | Moderate            |
| 5   | Harborage sites – cracks and crevices – loose flashing – debris beneath equipment – old discarded equipment – clutter – cardboard boxes.   | Lecture, List Harborage Sites   | Moderate            |
| 6   | Consistent sanitation – thorough cleaning prevents pests and preparation for the next day – start each day with a clean facility – preparation tables – floors – corners – under equipment – shelving – walls, etc.                                      | Guided Discussion, List Critical Sanitation Sites                                   | Difficult           |
| 7   | Cleaning equipment must be clean – mops, brushes, rags, brooms, buckets, etc. must be thoroughly cleaned to eliminate accumulated food particles and other debris – equipment must also be stored so it can dry – the storage closet must also be clean. | Guided Discussion, List Equipment and Risks from Using or Storing Unclean Equipment | Moderate            |

INSTRUCTIONAL SEQUENCE: What comes first, chronological order  
 METHOD OF INSTRUCTION: Lecture, demonstration, performance, discussion

FACILITY MANAGER LESSON PLAN UNIT FIVE

COURSE DESCRIPTION: Low-Risk Integrated Pest Management Implementation  
 SUBJECT MATTER: Thorough Inspection of Kitchen  
 UNIT OF INSTRUCTION: Unit 5: Lecture, Guided Discussion – 30 minutes

INSTRUCTIONAL PROCEDURE:

| No. | Instructional Sequence (Tasks)  | Instruction Method (Performance)  | Learning Difficulty   |
|-----|---|---|-----------------------|
| 1   | Proper procedure for inspection – what do pests need? Air, water, food, shelter, temperature, light (plants) – high and low – purpose is to maintain a consistent integrity of the sanitation process. All areas must receive the most thorough cleaning possible. Set a procedure to ensure the same high level of sanitation from day to day. Inspection is a snapshot in time.   | Lecture, Guided Discussion, Inspection Protocol, List Cleaning and Sanitation Practices | Easy                  |
| 2   | Monitoring tells what happens over time – pest presence may need monitoring to determine location of harborage, size of population, species, expanding or contracting, etc. Pest Management Technicians may use sticky traps for crawling insects, pheromone traps for flying insects or snap traps for rodents – specific placement – numbered dots for sticky traps – captures? Make notes – bag – place in other hopper room and call technician to respond. | Lecture, Guided Discussion  | Moderate              |
| 3   | Keep accurate records – inspection reports – pest sighting logs – requests for assistance – responses, etc.   | Lecture, Record Example   | Easy                  |
| 4   | Know Pest Management Technician procedure – respond to trouble calls – ID pest to species if possible – recommend steps to prevent pest (cleaning, clutter removal, structural repair, etc.) – set monitoring traps – may treat with a bait material in cracks and crevices – may recommend repairs by the crafts.  | Lecture, Guided Discussion  | Moderate to Difficult |
| 5   | Homework Assignment:<br>1. Read Manual<br>2. List poor sanitation measures observed<br>3. List good storage practices observed<br>4. List pests or evidence of pests observed in detail   |   |                       |

INSTRUCTIONAL SEQUENCE: What comes first, chronological order  
 METHOD OF INSTRUCTION: Lecture, demonstration, performance, discussion



## FACILITY MANAGERS LESSON PLAN

PREPARATION DATE: May 9, 2008

PREPARED BY: William E. Currie

UNIT OF INSTRUCTION: Low-risk IPM Policy Implementation

TITLE OF LESSON: Structure and grounds inspection, low-risk pest management methods, training objectives

INSTRUCTIONAL OBJECTIVE: Review homework. Know how to conduct a thorough inspection of a structure from the outside to the inside. Know how to conduct a thorough inspection of grounds from the perimeter fence up to the structure. Recognize common pests and know the appropriate low-risk pest management measures – exclusion – sanitation – habitat modification. Know the IPM process – train-the-trainer – instructional objectives – how to change behavior – incentives – demonstration and other techniques.

TIME ALLOTTED FOR LESSON: 4 hours  
METHOD OF INSTRUCTION: Lecture, guided discussion, demonstration  
INSTRUCTIONAL RESOURCES: Manual, inspection tools, inspection form  
A/V EQUIPMENT: Flip chart, PPT, slide projector, overhead projector, screen

GENERAL PLAN OF PRESENTATION: Homework discussion – structural inspection – outside – inside – grounds inspection – fence line – trees and shrubs – turf – low-risk pest management methods – the IPM process – train-the-trainer.

INTRODUCTION: Homework discussion – questions from reading the Manual – poor sanitation practices – good storage practices – pest observations or pest evidence.

### EXPLANATION/APPLICATION/PRESENTATION:

Structure inspection – tools of the trade – flashlight- mirror, knee pads, spatula, screwdriver, notepad, etc. Tools make inspection more thorough and easier. Check for access or bridges to the structure by way of trees, shrubs, vines (roof rats, ants and other pests). Look for possible harborage near or under structures (rodents, cats, opossums, raccoons, insects, etc.) and structural damage. Check for moisture sources (down spouts, puddles, leaks, irrigation spraying walls, etc.) and actual pest presence (molds, mosquitoes, etc.). Window ledges or other level areas on structures may become nesting or roosting sites for pigeons or other pest birds. Look for structural defects (holes, cracks and crevices, peeling paint, etc.) that may provide access to pests. Check for mud tubes, sawdust or other indications of wood infesting or destroying pests. Damaged screens, door sweeps and air doors should also be noted. Indoors look for cleanliness and good sanitation levels. Pest indications can be improperly stored food sources, faucet leaks, clutter, nesting material, droppings, rodent smears, urine marks, fecal focal points, webbing, frass, sawdust or other signs of activity.

Grounds inspection should start at the perimeter fence line and work inward. Look for weeds, animal access, rodent burrows, dead limbs, damaged trees, and shrubs planted too close to structures. Turf observations should check for weeds, animal burrows, compaction, plant turgor, fungi, mowing level, fire ant mounds, yellow jackets, ground covers, trash removal, etc.

Know what pests need – air, water, food, shelter, temperature and light. First line of defense is exclusion – door sweeps – screens – caulks, etc. The second line of defense is sanitation – remove food and water, cleaning, trash removal. The third line of defense is habitat modification – removal of clutter, shelter, physical removal of pests, weeding, pruning, vacuuming, predators and parasites, etc.

The IPM process – roles of occupants, pest managers, decision makers, pest management objectives, action thresholds, inspection and monitoring, habitat modification, exclusion, sanitation, low-risk pest management, baits, etc., evaluating results, record keeping. Train-the-trainer – instructional objective, change behavior from reactive to preventive – provide must-know information first, then good to know, etc. Change behavior – perfect practice makes perfect, success makes more success. Change is easier with incentives and recognition, use guided discussion to get class input and buy-in, use show and tell to illustrate technique, demonstrate, then coach “hands-on performance” by trainees to build proficiency and comfort levels with skill.

CONCLUSIONS/SUMMARY: Low-risk pest management requires dedication and may be tedious and time-consuming when performed correctly. A thorough understanding of why such procedures are so important frequently imparts a degree of significance to even the most mundane task. Teach IPM to others!

FACILITY MANAGERS LESSON PLAN UNIT SIX

COURSE DESCRIPTION: Low-Risk Integrated Pest Management Implementation  
 SUBJECT MATTER: Structure Inspection – Grounds Inspection  
 UNIT OF INSTRUCTION: Unit 6: Lecture, Guided Discussion, Demonstration – 90 minutes

INSTRUCTIONAL PROCEDURE:

| No. | Instructional Sequence (Tasks)   | Instruction Method (Performance)              | Learning Difficulty |
|-----|--|---|---------------------|
| 1   | Homework discussion – Q&A  | Guided Discussion                             | Easy                |
| 2   | Structure inspection – tools of the trade – flashlight, mirror, knee pads, spatula, screwdrivers, note pad, awl, etc.  | Demonstration                                 | Easy                |
| 3   | Inspection – start outside. Check for access (trees, bushes), harborage, structural damage, pest presence, moisture sources (i.e., down spouts, leaks, sprinklers on walls, etc.), pigeon or bird nests and roosts, rodent holes, dirty dumpsters, damaged screens and doors, cracks and crevices, mud tubes, wasp nests, animal harborage (cats).   | Guided Discussion, PPT, Slides, Demonstration | Moderate            |
| 4   | Inspection – indoors. Door sweeps, air doors, screens, moisture leaks, lighting, poor sanitation, clutter, pest signs (droppings, frass, wood rot, rodent smears, gnawing, webbing, insect parts, etc.), exposed food, nesting material, fecal focal points, pest sightings, open holes, cracks and crevices, etc.   | Guided Discussion, PPT, Slides, Demonstration | Moderate            |
| 5   | Grounds Inspection. Perimeter fence line, breaks, weeds, rodent and animal evidence of access. Landscape trees – dead limbs, too close to structures, Shrubs – prune up to prevent rodent harborage. Turf – gophers and ground squirrels, weeds, mowing levels, plant turger, compaction and aeration, fire ant mounds, yellow jackets, slopes, rodent burrows, ground covers, trash removal, etc. | Guided Discussion, PPT, Slides, Demonstration | Moderate            |

INSTRUCTIONAL SEQUENCE: What comes first, chronological order  
 METHOD OF INSTRUCTION: Lecture, demonstration, performance, discussion

FACILITY MANAGER LESSON PLAN UNIT SEVEN

COURSE DESCRIPTION: Low-Risk Integrated Pest Management Implementation  
 SUBJECT MATTER: Pests and Low-Risk Pest Management Methods  
 UNIT OF INSTRUCTION: Unit 7: Lecture, Guided Discussion – 45 minutes

INSTRUCTIONAL PROCEDURE:

| No. | Instructional Sequence (Tasks)  | Instruction Method (Performance)            | Learning Difficulty |
|-----|---|---|---------------------|
| 1   | What is a pest? Interferes with human objectives, list common pests, what do pests need? Air, water, food, shelter, temperature, light.   | Guided Discussion, List Pests on Flip Chart | Easy                |
| 2   | First line of defense – exclusion. Door sweeps, screens, air doors, fences, remove access to site, repairs, close trash containers. If you keep them out, they can't get in!  | Guided Discussion                           | Moderate            |
| 3   | Second line of defense – sanitation. Remove food and water, cleaning, trash removal.  | Guided Discussion                           | Easy                |
| 4   | Third line of defense – habitat modification. Remove clutter, shelter, introduce predators and parasites, change temperature, physical removal, weeding, washing pests from trees and shrubs, pruning, vacuuming, mowing, plant resistant varieties, etc. | Guided Discussion                           | Moderate            |

INSTRUCTIONAL SEQUENCE: What comes first, chronological order  
 METHOD OF INSTRUCTION: Lecture, demonstration, performance, discussion

FACILITY MANAGER LESSON PLAN UNIT EIGHT

COURSE DESCRIPTION: Low-Risk Integrated Pest Management Implementation  
 SUBJECT MATTER: IPM Process, 8 Steps to Success, Training Objectives  
 UNIT OF INSTRUCTION: Unit 8: Lecture, Guided Discussion, Demonstration – 90 minutes

INSTRUCTIONAL PROCEDURE:

| No. | Instructional Sequence (Tasks)   | Instruction Method (Performance) | Learning Difficulty |
|-----|--|----------------------------------|---------------------|
| 1   | The IPM process – roles of occupants, pest manager, decision makers, pest management objectives, action thresholds, inspection and monitoring, habitat modification, exclusion, sanitation, low-risk pest management, baits, etc., evaluating results, record keeping. | Guided Discussion                | Moderate            |
| 2   | Train-The-Trainer – instructional objectives, change behavior from reactive to preventive.   | Lecture                          | Difficult           |
| 3   | Must know information first – then good to know – then nice to know, then background information (if time available).  | Lecture                          | Moderate            |
| 4   | Change behavior – perfect practice makes perfect – success makes more success.   | Lecture, Demonstration           | Moderate            |
| 5   | Change is easier with incentives and recognition – recognize any movement toward the ideal behavior.   | Lecture, Demonstration           | Easy                |
| 6   | Use guided discussion – gets class input and “buy in.”   | Guided Discussion                | Easy                |
| 7   | Use “show and tell” to illustrate technique.   | Demonstration                    | Moderate            |
| 8   | Demonstrate – then coach “hands-on performance” by trainees to build proficiency and comfort levels with skill.  | Demonstration                    | Difficult           |
| 9   | Evaluation – Q&A – Charge: Teach IPM to Others.  |                                  |                     |

INSTRUCTIONAL SEQUENCE: What comes first, chronological order  
 METHOD OF INSTRUCTION: Lecture, demonstration, performance, discussion