

IPM CURRICULUM FOR DELIVERY STAFF

LOW-RISK INTEGRATED PEST MANAGEMENT TRAINING

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INSTRUCTION UNITS IN THIS LESSON PLAN:

1. The IPM policy, what it does, what not to do, roles in policy implementation, how to get pest management help, expectations from Pest Management Technicians.
2. Problem pests – identifying those that are the result of incidental entry vs. those that are the result of a true infestation.
3. Identification of conditions that permit incidental entry and preventative steps for future use.
4. Identification of the signs of infestation.
5. Methods of preventing infestations in cargo areas.
6. Understanding the inspection process and the need for good record keeping.

PERFORMANCE OBJECTIVES:

Unit #	Objective of Performance	Importance	Learning Difficulty
1	Know 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. Be able to determine whether they are originating from the outside or if they are the result of an internal infestation.	Important	Easy
3	Recognize possible points of entry for cargo pests: cracks and crevices, door closures, drains, holes in walls, etc. Steps to correct: routine inspection, proper notification of needed repairs, etc.	Important	Moderate
4	Recognize the signs of infestation: pin-point holes in packaging from beetles, spillage of product from areas of pest damage, webbing and frass from moth larvae, actual pest sightings, gnaw marks, urine stains, droppings and damage from rodents, water or moisture damage, and mold odor that could signal mite or psocid infestation.	Very Important	Moderate to Difficult
5	Proper storage procedures. Inspection of deliveries for pest presence. Good sanitation of cargo areas to identify problems in early stages.	Very Important	Moderate to Difficult
6	Proper sanitation procedures. Remove all possible food, eliminate moisture, remove or eliminate all possible harborage. Proper and thorough cleaning procedures for floors, corners, beneath equipment, drain areas, floor joints. Proper maintenance and storage of cleaning equipment. Know the importance of proper inspection to maintain the integrity of sanitation. Understand monitoring for pests. Know the importance of proper record keeping.	Very Important	Moderate 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

DELIVERY STAFF LESSON PLAN

PREPARATION DATE: May 8, 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, points of entry, signs of infestation, proper procedures for storage and sanitation.

INSTRUCTIONAL OBJECTIVE: Know the IPM policy, roles in implementation and how to get pest management help. Become familiar with common pests, readily recognize points of entry. Know the signs of infestation. Understand the benefits of proper storage and sanitation procedures. Know how to be your own inspector.

TIME ALLOTTED FOR LESSON: 2 hours
METHOD OF INSTRUCTION: Lecture, guided discussion
INSTRUCTIONAL RESOURCES: Manual, overhead transparencies, slides
A/V EQUIPMENT: Flip chart, PPT, slide projector, overhead projector, screen

GENERAL PLAN OF PRESENTATION: Self introduction, student introductions, policy development and features. Attendees will understand roles in implementation and how to get pest management help. Learn to recognize accidental invaders versus pests capable of infesting facilities. They will learn to not only recognize the points of entry but to constantly watch for signs of cargo depreciation. Attendees will understand reporting procedures, learn the signs of infestation by cockroaches, flies and rodent pests. Review the proper cargo sanitation procedures and learn what the inspector looks for during an inspection.

INTRODUCTION: Names and roles of instructors, student introductions. Why are we here? Implementation of low-risk pest management policy. Why a policy? What does it do? Everyone has a role in the policy's implementation.

EXPLANATION/APPLICATION/PRESENTATION:

1. The IPM policy does several innovative things. IPM defined. Precautionary Principle. Approved pesticide list. Notification of parents and staff. Posting of products not on the approved list. Emergency approval process. Low-risk pest management training for staff. Does not ban pesticides, but emphasizes low-risk materials and methods. Delivery staff do not use pesticides – only licensed Pest Management Technicians are authorized. Provides important roles for staff. Reduce clutter – no food (except in authorized sites). Observation and reporting of pest presence or evidence – reportable conditions (Pest Activity Log). Process to get pest management help from the Pest Management Technician. Facility Manager is the site point of contact. Expectations from Pest Management Technicians and maintenance actions.
2. Problem pests. You don't need a degree in Entomology to be able to recognize arthropods which can be identified as the "casual invader" (takes advantage of structural defects to gain entry), and those which are capable of infesting a cargo space.
3. 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.
4. Signs of infestation. An established infestation will provide evidence that points to its existence. Beetles chew holes in cardboard, cellophane and paper. The contents of the package can then spill out onto pallets and the 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."

5. Proper storage procedures. Knowing the signs of infestation of incoming supplies such as damaged packages and visual signs of pests. Know the importance of keeping cargo 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.
6. 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. Know the methods of monitoring and why accurate documentation is important. Learn what to expect when a Pest Management Technician responds to a trouble call.

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. You have an important role in excluding pests and reporting pest evidence you observe. Implement the low-risk pest management policy in delivery vehicles.

DELIVERY STAFF 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 Slides, 40 minutes

INSTRUCTIONAL PROCEDURE:

No.	Instructional Sequence (Tasks)	Instruction Method (Performance)	Learning Difficulty
1	Policy, history, implementation	Lecture	Easy
2	What's different, IPM definition, do's, precautionary principle, approved product list, notification, posting, emergency approval, training	Lecture	Moderate
3	Don'ts, only licensed Pest Management Technicians apply pesticides, remove harborage (clutter), no BAN, phase out pesticides over time	Lecture	Difficult
4	Roles, sanitation, no food, pest-proof food storage, eliminate clutter, observation and reporting, teach others	Lecture	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	Easy
7	Expectations, pest management technicians respond, emergencies that day, thorough inspection and monitoring	Lecture, Demonstration (monitors, traps)	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	Difficult

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

DELIVERY STAFF LESSON PLAN UNIT TWO

COURSE DESCRIPTION: Low-risk Integrated Pest Management Implementation
 SUBJECT MATTER: Problem Pests
 UNIT OF INSTRUCTION: Unit 2: Lecture, Guided Discussion, Group Performance – 15 minutes

INSTRUCTIONAL PROCEDURE:

No.	Instructional Sequence (Tasks)	Instruction Method (Performance)	Learning Difficulty
1	Good bugs/bad bugs. Every living organism in nature has role. Indoors there is less tolerance for critters. Pests need air, water, food, shelter, temperature, light.	Lecture, PPT	Easy
2	List of possible pests.	Guided Discussion, Group Input, List on Flip Chart	Easy
3	From list, determine level of importance: emergency, urgent, routine, non-essential.	Guided Discussion, Group Performance	Moderate

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

DELIVERY STAFF LESSON PLAN UNIT THREE

COURSE DESCRIPTION: Low-Risk Integrated Pest Management Implementation
 SUBJECT MATTER: Recognize Possible Points of Entry for Cargo Pests
 UNIT OF INSTRUCTION: Unit 3: Lecture, Guided Discussion – 15 minutes

INSTRUCTIONAL PROCEDURE:

No.	Instructional Sequence (Tasks)	Instruction Method (Performance)	Learning Difficulty
1	Learn to recognize points of entry for cargo pests: 1. the most obvious is missing or poorly installed/maintained door closures. 2. holes in walls. 3. cracks and crevices. 4. drains, etc.	Lecture, Guided Discussion, List Cargo Pests and Entry Points	Easy
2	Once these sites have been identified, the proper procedure to correct the problems must be followed. Notification of supervisor, proper record keeping to aid in the evaluation of the problem. Routine inspection should also be conducted to maintain structural integrity.	Lecture, Guided Discussion, Who does it? Procedure to get help.	Easy

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

DELIVERY STAFF LESSON PLAN UNIT FOUR

COURSE DESCRIPTION: Low-Risk Integrated Pest Management Implementation
 SUBJECT MATTER: Recognize the Signs of Infestation
 UNIT OF INSTRUCTION: Unit 4: Lecture, Guided Discussion – 15 minutes

INSTRUCTIONAL PROCEDURE:

No.	Instructional Sequence (Tasks)	Instruction Method (Performance)	Learning Difficulty
1	Become familiar with the signs of infestation in stored food products or other cargo. 1. pin-sized holes in packages. 2. spillage from damaged packages. 3. webbing and frass from moth larvae. 4. actual presence of pests such as beetles, moths, psocids or mites. 5. gnaw marks, urine stains or odors, droppings from rodents. 6. water and moisture damage or the odor of mold spores that could signal mite or psocid infestation.	Lecture, Samples, PPT, Guided Discussion, List Signs of Infestation	Moderate
2	Become familiar with those pests that are the result of an infestation within the cargo area: beetles such as drugstore, cigarette, red-flour and confused beetles, moths such as the Indian meal moth, psocids and grain mites. Also cockroaches, ants, flies and rodents that harbor within cargo.	Lecture, Specimens or PPT	Easy

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

DELIVERY STAFF LESSON PLAN UNIT FIVE

COURSE DESCRIPTION: Low-Risk Integrated Pest Management Implementation
 SUBJECT MATTER: Inspection of Deliveries and Proper Cargo Storage Procedures
 UNIT OF INSTRUCTION: Unit 5: Lecture, Guided Discussion – 15 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 for signs of infestation, quarantine and return of damaged or infested items, proper record keeping.	Lecture, Hand out Checklist	Moderate
2	Review the proper procedures for cargo products: FIFO, good sanitation (keeping walls and floors clean), thorough and routine inspection to quickly identify possible problems (looking for signs of infestation), and good record keeping.	Lecture, Guided Discussion	Moderate

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

DELIVERY STAFF LESSON PLAN UNIT SIX

COURSE DESCRIPTION: Low-Risk Integrated Pest Management Implementation
 SUBJECT MATTER: Proper Sanitation and Inspection Procedures
 UNIT OF INSTRUCTION: Unit 6: Lecture, Guided Discussion – 20 minutes

INSTRUCTIONAL PROCEDURE:

No.	Instructional Sequence (Tasks)	Instruction Method (Performance)	Learning Difficulty
1	Realize that good sanitation means thorough removal of anything pests consider as food. This means crumbs and small particles in corners of floors, spilled food from damaged containers, damaged bulk containers that permit pest entry, dirty floors, etc.	Lecture, Guided Discussion, List Potential Food Sources	Moderate
2	Moisture is necessary for many pests to survive. German cockroaches usually congregate in moist areas. It also permits mold and fungus that can support certain pests.	Lecture, List Moisture Sources	Moderate
3	Recognize possible harborage sites: any crack or crevice can serve as harborage for cockroaches, loose flashing, accumulated debris and cardboard boxes.	Lecture, List Harborage Sources	Moderate
4	Be consistent in sanitation. See cleaning not merely as an assignment, but as a means of preventing pests and preparing for the next day's activities. Start the new day with a thoroughly clean cargo area. Clean floors, corners, and under equipment. Spot clean walls as needed.	Guided Discussion, List Critical Sanitation Sites	Difficult
5	The equipment used to clean: mops, brushes, rags, brooms, buckets, etc. must be thoroughly cleaned to eliminate accumulated food particles. Must be stored in such a manner as to permit drying. The storage must also be kept clean.	Guided Discussion, List Cleaning Equipment, List Risks from Using or Storing Unclean Equipment	Moderate
6	Know the proper procedure for inspection. The same effective procedure must be followed routinely to ensure that all areas receive the most thorough cleaning possible. Understand the monitoring process. The Pest Management Technician can set monitoring traps that will determine the type and location of the possible pest. Inform the Technician of any activity or captures in any of the traps. Always keep accurate records such as inspection reports and Pest Sighting Logs.	Lecture, Guided Discussion, Protocol of Inspection, Cleaning Procedures	Moderate

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