Update
NPMA LIBRARY UPDATE

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Value Added Service: PMPs Role in Food Manufacturing Facilities

Pest management is vital in any food manufacturing facility. Operations managers are charged with producing food products in compliance with state and federal food safety standards, but much more importantly, in compliance with corporate quality standards. PMPs play a seldom seen but critical role in the success of food facilities.

Our seldom seen discipline gets undivided attention when there is a pest infestation that must be remedied. Knowledgable technicians are required to minimize or eliminate problems. Prior to any treatments, technicians must conduct thorough inspections.

While maintaining a pest-free environment is frequently left to the food manufacturer's quality assurance personnel, pest management is everyone's business, from the newest employee to the operations manager. When all disciplines work together, pests are no match for the strength of good design and teamwork.

IPM is not Using "Friendly" Products; It's Engineering out Pests through Inspection

If we market our industry as price driven, the perception will evolve that PMPs have no real value in a food facility. Over the past fifteen or so years, our industry has stepped up and presented ourselves as specialists and professionals. The work of PPMA has bolstered this transition. By establishing a relationship at the managerial level and showing that

we are trained in assisting with inspections and eliminating pests, we will achieve greater success and further cement the relationship, so that facilities will have less of a tendency to change service companies.

It is important to let management know that you are ready to provide input on new additions, new lines, and even new equipment, and to provide inspection services for existing facilities.

The most important thing to do is to think like a pest. Pests such as insects and rodents need just three things to survive ... food, water, and harborage or a place to live. Interrupt any one of these necessities, and you put such pressure on the pest that they cannot survive. In this Update, we will focus on the interruption of this life triangle. Interruption is not based upon products we use; it is based upon common sense and observation.

Exterior

The first pest entry on any plant site is the outer perimeter. Look around and see what kinds of neighbors are adjacent and whether you need to step up inspections outside. Exterior perimeter inspections should be done on each visit by the technician. If you are in a suburb, your pest pressures might not be as serious as if you were surrounded by abandoned buildings and warehouses. Recommend that the client set up a defensive line along your perimeter by cutting down weeds to prevent rodent harborage and make sure that there is no standing water on soil and in parking/loading. This will eliminate two of the three requirements of food, water, and harborage for rodent infestation. Retention ponds should aerated or circulated to help keep mosquitoes at bay. Mosquitoes need water, and even though we don't think of mosquitoes as food pests, mosquito or insect parts in food can be a violation of Good Manufacturing Practices. Exterior areas should also have trash receptacles with self-closing lids so that employees can dispose of trash which otherwise may end up on the ground and attract pests.

Dumpsters, shipping and receiving areas should be free from spilled debris. If rodents, for example, are consistently able to feed on spilled chocolate and nuts, they might not be attracted to rodent bait placement as effectively. If materials are loaded and unloaded outside, such as tankers of corn syrup, cleanup stations and drains should be in place to help reduce the number of foraging yellow jackets. Shipping and receiving dock doors should be close fitting and closed when not in use. Mice can jump several feet, seemingly straight up into the air, so guard places above the trailer bumpers will prevent mice from entering through dock doors. Load leveler pits collect trash rather easily and should be on a regular inspection/cleaning schedule. If rail cars go into sheds for unloading, shed doors must fit tightly. Special inexpensive rubberized plugs are available for installing on railroad tracks at shed doors so that rodents cannot follow the tracks under the shed doors.

Lighting on the exterior should be placed *away* from the building where possible and shined onto the building rather than placing the lights on the building, which attracts night fliers. Also, sodium vapor lighting will attract up to 90 percent fewer insects than mercury vapor lamps. Zoning

regulations may restrict the ability to install remote lighting. If lighting must be installed near entrances, self-closing doors should be used to keep out pests.

Doors and windows need to be closed or screened to prevent insects from entering. When doors are closed, no light should be visible around the doorjamb. If a pencil can fit in a crack, a mouse can get in. In this case, weather stripping will help beyond just energy savings. Screens should be sixteen mesh if possible — this will screen out most insects.

Many insects and rodents can harbor in shrubs right next to the buildings. While ornamental shrubs beautify the building, flowering shrubs will increase the numbers of insects attracted to these areas. Technicians should note any flowering plants in their reports. Ideally there would be no shrubs, but if they are used, there should be at least eighteen inches between the factory and the shrubs for inspection and to reduce the chances of rodents burrowing in the area. Mulch can retain moisture, which will help support pests, so any gravel or bare ground will be helpful. Also, when planning landscaping, vase shaped plants give beauty without creating a harborage for rodents.

An area that most people tend to overlook is the roof. The plant roof should properly drain. The structure should contain as little wood as possible to reduce chances of termites. While termites are not stored product pests, they can get into the food and are considered a contaminant just as any stored product pest. Treatment for termite infestation on a flat roof can be disruptive to production, so the best solution is to avoid water, wood, and shelter, all three of which are required for termite survival. Tops of silos and outbuildings should also drain well. Finally, air handlers on the roof should be designed to drain and makeup air should be screened so that outside insects do not enter the plant. At one time, thousands of red flour beetles infested a plant that was traced to a location over a mile away and the insects were blown onto the roof and pulled into the air-handling units and deposited directly onto food lines.

Interior

The interior is an area where technicians can really reduce pest harborages. This is where, if the technician is recognized as the point person for all things pest related, they will be called in as a trusted advisor. Starting at the ceiling, the trusses should not be exposed in dusty areas. Dust will collect and may provide a food source for stored product pests. Food dust is a common source of stored product pest infestation.

Control panels, automation boxes, lockers, and any other surface which can collect dust or food debris which will lead to infestation should have tops that angle at 45 degrees so that any debris falls from the top. It is striking how many infestations are traced to the tops of machinery, storage, equipment, and electrical panels, which nobody ever reaches to inspect or clean. Angling the tops engineers out these threats. Also, these panels should be up off of the

floor on stands so that the floor underneath can be cleaned. In lieu of stands, the panels can be totally sealed to the floor. Gauges, motors, and gearboxes should be sealed to keep pests out. Conveyor belt pulleys should be covered so that no food product falls on these areas.

Flying insect control in food plants is commonly done using insect light traps (ILTs). Most target pests are houseflies and similar pests and these pests rarely fly above five feet. Frequently, in food plants ILTs are commonly installed at the ceiling or hanging from the ceiling so that it takes a massive ladder to get to these traps. Fly traps should be accessible and installed according to the manufacturer's recommendations and to satisfy the purchasing agent's concern about requisitions for many damaged traps, these traps should be installed in protected areas but yet visible to the flies. ILTs should not be installed in areas that may attract flies from the exterior such as next to a glass entry door or dock door. This is another area where you need to think like a pest. In the pest management industry, much work has been done on effective use of ILTs.

Rework areas and return areas should be separated from processing areas. The returned goods area should be physically separated from the plant by a wall with doors, either plastic strips or solid, so that any returned goods that are infested do not infest the plant.

Steel columns should be filled at the bottom with flooring material and angled up so that no food debris can catch in the area. Floor/wall jointures should be covered and sealed to prevent harborage. Any corrugated wall systems should be sealed at the base so that insects and rodents cannot move freely from the voids to the plant. All of the sealing can be time consuming, but it will greatly reduce chances of infestation.

Throughout the entire plant, painting a white or yellow inspection band from the wall to eighteen inches out along all walls, will give a good color contrast to see any pest evidence along walls. As an additional bonus, that inspection band should act as a no-storage zone so that employees are trained that no products block the zone. Horizontal crossbeams on racking should be designed so that food debris cannot collect inside the beam. If a U-shaped beam is used, the U should face downward so that food debris will not accumulate inside it if food debris is spilled from food stored above.

Finally, all exterior doors should be alarmed except main employee entrances. Too many times, a late night visit to the plant will reveal that doors are propped open so employees can enjoy fresh air or as an access for trip outside. Unfortunately, at night many insects and rodents are active, and an open plant door is an open door to infestation considering that most bright lighting in a plant is attractive to insects.

Looking Ahead

Technicians need to be trained on conducting a thorough inspection and technicians of management of pest management firms should be prepared to provide advice to food manufacturing facilities by inspecting current facilities and making recommendations for expansions in order to keep the environment pest free. By following these tips, the PMP will be well on the way to being a vital consultant to the food industry.