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PEST SOLUTIONS SINCE 1904

Best Practices for Pest Prevention and Exclusion

Retail Food Stores

Whether it is a big box store or a small box store, there can be similar pest pressures when food is stored and sold in the retail environment.

Although chemical treatments and mechanical traps can be used to help battle these pests, experts agree that the most successful pest management programs will use a combination of techniques aimed at prevention, recognition and suppression. This is often called integrated pest management or IPM. The program requires not only the services of a qualified pest management firm but input and participation from the retail store team. Pest management does not begin with the pest management firm. Pest management begins when the site is selected and continues as part of business operations each and every day.

Site Selection

The neighboring environment and attached structures can impact future pest problems and should be contemplated before the structure is even built, purchased or leased. Pest pressures at the site should be one consideration in determining site suitability for the store. If the building is a quarter of a mile from a landfill or horse stable, you can expect problems with birds, flies and rodents. At the very least, designing the building with those pest pressures in mind should be understood. If problems with pigeons are expected because there is a neighboring landfill, designing signage, and reduction of protective roosting sites can be useful in preventing bird problems in the future.

There are some considerations regarding the leasing of buildings. If the building is old with deteriorating infrastructure, cosmetic re-designs to hide these issues will not prevent pests. Major renovations may be required to prevent structural flaws from allowing pests to prosper. This is especially important when the structure is attached to neighboring businesses and residences. A poorly sealed building will allow their pests to be your pests. There should also be the expectation hat pest defense costs will be hire for structures where pest pressures are greater.

Exclusion Methods

Selecting the right building will help with exclusion. A well designed and constructed building will help prevent pest entry. Maintaining the buildings integrity is required as long as the building is in use. An active program of pest proofing to stop pest entry is required. Many pest management professionals offer pest proofing services and should report areas which require pest proofing when gaps in the building defenses are observed. Pests do not require much space to enter a building. When sealing to prevent pests, keep in mind the target pest and the size opening it can fit through. Although pests like rats and mice may look fairly large, they do not require much space to enter through at the base of a door or at the opening around a pipe/wall juncture. If they can get their heads through the opening, their bodies will compress to fit. Use the following chart as a guide in pest proofing the exterior and interior of the building.

Follow Strict Door Rules

Door seals and keeping doors closed when not in use is one of the most critical areas for pest prevention. Gaps around the door itself can allow pests to enter and pest proofing materials like door sweeps and guards should be used to prevent pest entry when the door is closed or when trucks are backed up for unloading. Automated doors should remain open only as long as necessary for customers to enter and exit. A general rule is for the door to remain open for six seconds, after the pedestrian passes through the range of the electronic door sensor. The proper functioning of the door's sensor should be checked regularly to make sure it is operating properly. Doors that are staying open too long or even worse, sticking open, will allow pests like flies, rodents and even birds to enter the building. Store team members should not be permitted to prop open doors for extended periods of time. Lastly, the same rules for pedestrian and dock doors apply to cart doors. All should be pest proofed and kept closed when not in use.

Air Curtains

Air curtains can be used to supplement a tight fitting door especially in areas where pest pressures from flying insects are high. The air curtain must be properly installed and maintained. Air curtains are not something that can be simply installed and forgotten. Just like an automatic door closure, overtime, they may need readjustment. A poorly functioning air curtain can be worse than no air curtain at all. If improperly installed or adjusted, they may suck insects into the building versus keeping them out. The blade to the air curtain should be angled at a 20 degree angle, so the air flows away from the door. The velocity of the air should be 1600 fpm of air when measured three feet from the floor as a test for proper air curtain operation.

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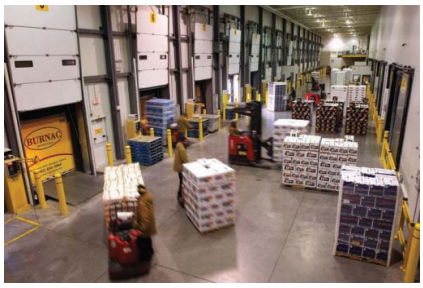
Inspect Incoming Goods

In addition to the exclusionary methods listed above, store staff should check both incoming goods and returned goods for pest activity. If pests are found, their manager should be notified and the products should be isolated for dispatch or disposal. This is one of the most common ways pests like the German cockroach will enter a structure. The second way is hitchhiking on employee personal belongings. Having a designated locker area and break room is helpful in reducing the impact from hitching insects like cockroaches.



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Monitoring Devices

Strategically placed pest monitor and control devices are required on the exterior as part of the exclusion process. Key areas for placement include dumpster/ compactor areas, outdoor storage areas including seasonal displays, outdoor eating areas and vending machines.

Minimize Pest Attractions Outdoors

In addition to pest proofing the structure to deny entry, we want to make the exterior of the structure as unattractive and uninhabitable to pests as possible. Because we cannot keep all doors closed and still conduct business, pests will still have the opportunity to enter the building when doors are opened for customers and commerce.

Eliminate Survival Resources

All animal pests need food, water and shelter for survival. Included in the shelter category are preferred temperatures. Pests like insects are cold blooded and cannot regulate their body temperature. They will seek warmer and cooler temperatures as necessary to maintain a favorable body temperature. This means warmth in the winter and cooler air in the summer. Food and garbage odors, water and favorable indoor temperatures can all provide attractants for pests. Pest proofing for sealing the structure also helps reduce air leaks which may signal to pests a more favorable temperature indoors. Keeping lids closed on dumpsters and trash receptacles is important for reducing access and odor plumes from these areas. Water leaks and proper drainage of areas.

Proper Lighting to Reduce Attraction

In addition to satisfying needs for survival, pests may be attracted to structures due to light. Many insects use light to help navigate and can be attracted by lights. Certain types of lights are more attractive to insects than others. Insects are more attracted to lights in the blue spectrum and less attracted to lights in the yellow range. Selecting lights towards the yellowish spectrum will help reduce the buildings attraction to insects. Mercury vapor lights are a common type of lighting which emits light more in the blue range (450-550 nm). Mercury vapor lighting should be avoided when possible, especially when lights are mounted directly on the building. High pressure sodium vapor lights are preferred (575-600 nm). Mercury vapor lighting can be 112 times more attractive to insects than sodium vapor lights. Many facilities are switching to LED lights because of energy savings. When selecting LED lights, look for lighting in the same spectrum as sodium vapor lights. Due to the amount of window space at the front of a retail store, indoor lights can also be an attractant for insects. Sometimes light filtering films placed on windows are needed to reduce insect attraction when night flying insect pressures are high. This is often the case when stores are located near rivers or lakes where light attracted aquatic insects can arrive in mass numbers.

Reducing Survival Indoors

The same basic needs which may attract pests to the exterior of our structures, contribute to survival indoors. We aim to reduce available food, water and shelter indoors to prevent pest reproduction and development. Key pest prevention methods are as follows:

Food Service Areas

Occasionally retail food stores not only sell food but serve prepared foods to customers. Small flies, filth flies and cockroaches are common visitors to these areas.

- Keep floors and counters clean.
- Seal walls and floors where cockroaches may harbor.
- Periodically clean drains to beverage dispensers. Sugar accumulations in beverage dispenser trays and lines can serve as attractants and breeding sites for small flies.

Produce Displays and Back Rooms

Small fruit flies and other pest flies are the most common pests in the produce area. Often the flies originate on the produce being brought into the store.

- Cull fruit often and quickly discard over-ripened fruits and vegetables which may support flies.
- Keep produce areas clean, including underneath cases and displays to remove food which may have fallen underneath or between displays.
- Keep floor drains in prep areas on a frequent cleaning schedule to reduce organic material accumulations inside the drains. Clean underneath storage areas in back rooms.

Retail Sales Floor

Rodents and stored product pests are the most common issues on the retail sales floor. Keeping areas clean of spillage and designing displays to allow for inspection are important in pest prevention. A few of the best practices in minimizing pest survival in these areas are as follows:

- Use a first in, first out system of stock rotation to make sure that older product is used first. Not only does this potentially impact the quality of the food, it can impact pest activity. The longer products, which are susceptible to stored product insects, remain in storage, the more likely they are to become infested. Rotation of products helps reduce stored product pest infestations.
- Clean shelves and underneath gondolas regularly. It is preferred that kick plates are not in place to help facilitate cleaning and inspection of these areas. Instruct staff to immediately report any findings of insect or rodent evidence to their manager. Certain aisles are going to be more attractive to pests and should receive greater attention from a cleaning and inspection standpoint. The aisles of greatest concern include: pet food, baking mixes, chips, cookie, candy, bread, rice and pasta. These aisles should be inspected by the pest management professional as well and monitors placed in these areas as deemed necessary.
- Avoid sealing off gaps between refrigerated cases and walls for inspection. Rodents often can gain access to these areas through the bases of the cases. It is important to have access for inspection and trapping if a problem occurs.
- If bulk foods like nuts, candy and spices are on display, make sure these areas are kept clean. Spillage tends to be a greater concern in these areas where consumers are allowed to scoop out product from bins. Forgotten spilled product can become infested with stored product pests or provide food for rodents. It can also be more challenging to monitor the first in, first out system of stock rotation as bins are filled.

Cash Registers and Vestibules

Cash register areas can be attractive to rodents and other pests due to the voids created in the cash register counter and neighboring displays. Mice in particular will be attracted to the warmth provided through reach in drink coolers and food from candy and chip displays.

- When designing or remodeling a store, sub floor cash register cables are more susceptible to rodent infestations and should be avoided. If sub floor cash register cables are in place make sure they are accessible for periodic inspection.
- Keep cash register areas clean including voids underneath cash register belts and surrounding food displays.
- Avoid storing food products in pest susceptible packages in vestibule areas. If products must be displayed in a vestibule, restrict it to non-food products or bottled or canned food products.
- Make sure inner vestibule doors are in place and functioning properly. These doors serve as another line of defense in keeping pests from entering the store.
- Keep outdoor displays to a minimum and understand that when seasonal displays such as straw bales, pumpkins and corn stalks are used, mice can be brought in with those products or attracted to those areas. They can then make their way indoors.
- Dairy coolers can be particularly vulnerable to spillage. Keep floors clean of food debris.

Food Prep Areas: Bakery, Deli and Meat

Food odors and open food products can attract pests to these areas, especially flies. The warmth of proofers and ovens can also attract pests and contribute to the survival of pests such as the German cockroach and rodents. Effective sanitation methods and limiting cracks and crevices which can harbor cockroaches are essential in preventing pests in these areas.

- Floor drains can be an area of pest activity in the departments which prepare and process foods.
- Drains must be cleaned regularly to remove organic food deposits and to keep drains flowing properly. Bioremediation products which provide microbes which help digest the organic material can be helpful in supplementing control. There are exclusionary devices which can prevent pests from migrating out of drains into the food preparation area. These drain inserts allow water to flow downward through a valve but do not allow flies or cockroaches to move up from the drain.
- Cracks and crevices in walls and floors, especially around areas of warmth like proofers and ovens should be sealed to exclude pests. Seal around pipe/wall junctures and other areas where if left open, pests may access wall voids for harborage. Insect pests like the German cockroach prefer to live in cracks and crevices. Reducing harborage for this pest can be even more beneficial than reducing food sources.
- Keeping floors and equipment clean of food debris is required, especially in the hard to clean areas like underneath sales cases, underneath ramps to coolers and proofers and behind equipment.
- Floors need to slope properly to allow for proper drainage. Pick up floor mats after cleaning to allow floors to properly dry. Use fans to help dry floor areas where moisture is an issue. Keep tile and epoxy floors in good repair.
- Keep clutter and storage of old items to a minimum. Clutter makes it more difficult to inspect and treat for pests. Any items stored for long periods of time should be placed inside plastic bins versus corrugated cardboard boxes. Corrugated cardboard is difficult to clean and seal. It provides lots of nooks and crannies for pests to harbor.

Back Storage Rooms

Mice, rats and flies tend to be the main pests of concerns when it comes to the rear storage areas. Use these pointers in reducing their access and survival:

- Keep trash chutes and disposal areas as clean as possible. Keep openings around trash chutes sealed.
- Keep doors sealed and closed when not in use. If dock plates are present, they should be sealed as well to prevent pest entry from the dock pit.
- Keep clutter to a minimum. Old displays and equipment if not needed should be discarded. Areas above coolers in particular tend to become depositories for unwanted equipment. It can become a challenge to inspect these areas for pests and treat when clutter is in the way.
- If possible, maintain an area for inspection and trapping along walls behind where there are storage racks and pallets. Rodents often use walls as runways. This is an important area for inspection and trapping.
- Provide access to cooler tops, compressor rooms and sprinkler rooms to your pest management professional. These undisturbed areas can be important areas for pest development since they are more likely not to be disturbed or be detected.
- Keep walls and floors sealed.
- Keep mop sinks clean and organized. Hang brooms and mops on wall mounted racks. Clean prior to returning to storage. Clean wet and dry vacuums and floor scrubbers prior to returning to storage.
- Use the first in/ first out system of stock rotation for the products stored in the back as well as the front of the store.
- Keep the damaged product/ return area cleaned and organized. Try to discard or dispense of materials as quickly as possible and not allow them to sit for long periods of time.
- Keep floor drains in this area clean. Often drains to coolers and freezers are present in the back room which can be collection points for organic matter.
- Keep areas underneath ice machines clean and as dry as possible.
- Make sure exterior vents to compressor rooms are screened.