

PEST EXCLUSION

STORED PRODUCT PESTS

Exclusion is the cornerstone of a good integrated pest management program. Simply modifying the environment to make it less inviting or hospitable to pests can be as, if not more, effective than chemical control tools. This is particularly important in sensitive environments, such as food production or warehouse facilities. When discussing exclusion strategies for pests in food facilities, we tend to focus on rodents and filth flies – pests that are predominantly coming from the exterior. However, exclusion strategies can and should be employed for all pests, with stored product pests as no exception.

Reducing Habitats and Accessibility Through Exclusion

Stored product pests live in the food that they eat. Using exclusion tools to minimize food build up is an effective way of minimizing the risk that these pests bring to a food facility. This is particularly true for those facilities working with dry ingredients, such as flour, spices and cocoa. As the dust from these ingredients settles on the floor, the walls, in pieces of equipment, etc., the buildup becomes a conducive condition for stored product pest activity. Through exclusion, however, we can minimize those risks by:

- ✓ **Sealing cracks and crevices in walls and floors:** By applying a food-grade sealant in areas of food processing, facilities can remove the potential for buildup in expansion joints, wall/floor junctions and equipment/floor or equipment/wall junctions.
- ✓ **Building material and design:** Choose materials and design that results in smooth surfaces. A seamless material on the wall prevents the material from building up. For example, a corrugated wall allows for build-up both in the wall and in the seams of the wall. Concrete blocks also allow for build-up as they are porous with voids. Other materials, such as foams, are difficult to clean, so buildup can become a pest harborage.
- ✓ **Equipment and racking design and installation:** Particularly in a dry processing environment, being cognizant of the racking and equipment design can help minimize areas where material can collect. Installing racking to minimize areas of collection (eliminating concave surfaces) and placing covers on racking or parts of equipment to prevent the material from building up has a tremendous impact on stored product pest harborage.

For those facilities that are processing raw grain ingredients, exclusion can be implemented in the processing stage, where commodities are sifted to remove adult and juvenile stages of stored product pests from the food.

Minimizing Development Through Exclusion

While most stored product pests develop inside the food, there are some species that do not. The Indianmeal Moth larvae “wander” away from the food source to pupate. They are looking for cracks and crevices to finish their development. It is vital food facilities seal peg boards and racking to minimize these types of spaces. This not only reduces the chance of product buildup, but also reduces the places where these species can continue their development. Cigarette Beetle larvae also choose voids to pupate in, accessible only through cracks and crevices such as electrical or equipment panels. The same actions we take for removing food harborage are just as effective as removing life stage development potential of stored product pests.

Preventing Entry Through Exclusion

Many species of stored product pests are found on the exterior of a facility, most commonly the Warehouse Beetle and the Indianmeal Moth. For these pests, the same exclusion tools that are effective against flying insects are also successful in excluding stored product pests:

- ✓ **Closing doors and windows:** Employee practices can make or break a solid pest management program. Ensuring doors and windows are closed (or have an air curtain or screen) will keep exterior stored product pests out.
- ✓ **Air curtains and fans:** With air curtains and fans, insects are essentially pushed the opposite way, and are unable to enter a facility even when the door or window is open.
- ✓ **Positive pressure:** When a room or building has positive pressure, air is exiting the building through openings, as opposed to entering the building. This is important for exterior insects. If there is positive pressure, it's more challenging for them to get in. If there's negative pressure, it's much easier for them to enter.
- ✓ **Sealing openings:** While many openings (windows and doors) are necessary, any holes or gaps in the building that may permit entry into a facility should be sealed.
- ✓ **Screening openings:** Not all openings can be sealed or closed. Using screens designed to eliminate flying insects in windows, doors and duct work entry points can limit pest entry.

Exclusion Materials

When choosing exclusion materials in a food processing facility, it is important to be mindful of where the material will be used as well as food safety considerations. For example, in the processing area of a food facility, it is recommended to use only a food-grade sealant. If filling a hole with a steel mesh, such as Xcluder, covering that hole and Xcluder with food-grade patching materials is necessary. Exclusion work that uses the wrong material can put a food facility at risk for chemical or physical contaminants.

McCloud Services is a leader in integrated pest management solutions, protecting more than half of the largest food-related brands in the US. Our highly-trained and experienced service specialists, food safety professionals, and entomologists use an ongoing, flexible approach designed to meet each client's specific needs. Our mission is to protect our customer's health, property, food, and environment while providing the highest level of safety for our employees and the general public.