



Protecting Your Brand

A strategic approach to stored product pest infestations helps keep your brand reputation clean

Stored product pest insects are a common concern in the food processing industry within all facilities that incorporate and/or produce a dried ingredient or product.

In general, these insects are not a food safety concern, as they are not typically associated with pathogenic bacteria transmission. However, when it comes to ensuring product integrity, customer satisfaction and protecting brand image, their presence must not be ignored. Stored product pest insects have high reproductive rates (the majority produce hundreds of eggs in their short lifetime), great mobility and dispersal capabilities, and use pheromones for communication, allowing them to take advantage of their environment and thrive. These same qualities make exposed food products and ingredients extremely vulnerable to infestation and contamination.

Some of the most prevalent stored product pest insects include Red and Confused flour beetles, Saw-toothed and Merchant grain beetles, Warehouse beetles, and Indian meal and Mediterranean flour moths. Each insect species has its own food preferences, but in general they'll infest items such as flour, spices, nuts, dried fruit, chocolate, cocoa powder, powdered milk, dried pet foods and cereal. Knowing the specific biology and food preferences of these common species is an important first step in preventing infestations from developing. This knowledge is also critical when trying to eliminate known infestations within the facility.

By working in conjunction with a quality pest control provider, food companies should consider several factors and strategies in order to manage and minimize the potential impact of stored product pest insects. First, identify the ingredients within your production process that are vulnerable to infestation. Your incoming goods and warehouse inspections, inventory practices, and cleaning activities with respect to these items must be enhanced to reduce their risk to your end product. Equipment processing these ingredients must have detailed cleaning procedures with the frequency of cleaning set to disrupt the life cycle of any associated stored product pests.

Next, identify potential sources of insect infestation both within and outside the facility by conducting detailed facility inspections. Shipments from suppliers are a potential source of infestation that can often be identified through a detailed incoming goods inspection. Within the facility, sources of infestation can include inadequately cleaned

equipment, old dried ingredients or food items stored within warehouses, inadequately cleaned surfaces such as overhead pipes, and accumulations within void spaces such as concrete block walls or ceilings. Depending on the stored product pest involved, pheromone traps can be used to help identify hot spots for infestation. Pheromone traps for Warehouse beetles, Indian meal moths and Mediterranean flour moths are highly effective in attracting these insects. These traps will also help producers focus on and improve existing cleaning practices, as well as identify chronic problem areas within the facility over time.

Once the infestation sources have been identified the appropriate action must be taken for elimination. The approach may vary depending on the scale of the infestation and the circumstances involved. For example, infested incoming goods should be rejected prior to unloading into the facility. The supplier should be contacted to discuss the integrity of their product(s), and a new supplier should potentially be investigated. At the same time, infested food items in storage (ingredients or final product) should be evaluated, and those with minimal value should be discarded. If the infested items are to be kept, they must be fumigated in order to kill all life stages of the pest. In conjunction with these measures, the storage area must be thoroughly cleaned to remove all life stages that have emerged from the product. A crack and crevice and possible ultra low volume (ULV) (fogging) insecticide treatment to the storage area should supplement the cleaning action to ensure control.

Infested equipment, silos, specific areas and even the complete facility should be evaluated to determine the level of infestation and the appropriate action. In many instances infested equipment and structures can be heat treated or fumigated for insect control. Depending on the severity of the infestation it may be possible to gain control through intensive cleaning and performing crack and crevice and/or ULV insecticide treatments in the infested area.

Ultimately it may be impossible for some food processors to completely eliminate the presence of stored product pests. However, by implementing these control strategies they can greatly minimize the potential for product adulteration through insect infestation.

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