

# Pests: Everyday Threats to the Human Food Supply



*The consequences of lax pest management can be devastating*

According to 2010 estimates from the U.S. Centers for Disease Control and Prevention, about 48 million people get sick, 128,000 are hospitalized and more than 3,000 die each year from food poisoning in the United States.

Although food can become contaminated at any point during production, unsanitary conditions coupled with disease-carrying pests in food facilities can cause widespread outbreaks. Pest management can be challenging even on a small scale and may seem overwhelming in larger instances such as in food processing facilities, warehouses and the like. Regardless of operation size, the consequences of lax pest management can be devastating.

## **Negligence and Consequences**

Many people inside the food manufacturing and safety industry, as well as the average consumer, are all too familiar with the recent spate of food contamination events, illnesses, deaths and recalls.

One of the largest and most expensive food recalls in the history of the United States occurred in January 2009, when officials from the U.S. Food and Drug Administration learned that Peanut Corporation of America (PCA), headquartered in Lynchburg, VA, had shipped peanut-based products contaminated with *Salmonella* bacteria 12 times in 2007 and 2008 from its Blakely, GA, facility.

These actions represented a clear and significant violation of food processing standards.

Plant inspections revealed mold growing on ceilings, rainwater leaking into the production areas, large gaps providing easy access for rodents and the presence of dead cockroaches throughout the plant. What made the case even worse is that federal investigators discovered e-mails between company executives that revealed their knowledge of these conditions and the positive tests for *Salmonella* within products over a 2-year period. Both cockroaches and rodents are known vectors of *Salmonella*, which can be found in rodent droppings and on the legs and bodies of cockroaches, easily contaminating areas around them.

PCA's actions led to a major national *Salmonella* outbreak that ultimately caused more than 700 cases of *Salmonella* poisoning in 46 states, resulting in nine deaths. As this nightmare unfolded, PCA filed for bankruptcy amid a series of lawsuits.

## **Pest Threats in Food Processing and Storage Environments**

Managers of food and beverage processing facilities and warehouses are required to adhere to a number of health codes, but pest management is among the most important and most challenging. These types of facilities provide the perfect conditions for a variety of pests, offering rodents, flies, cockroaches and stored product pests such as beetles and Indian meal moths plenty of food, water and hiding spots for nesting. Since these pests tend to be the primary culprits behind the adulteration of the food supply, the managers of food processing and storage facilities must be fully aware of the hazards posed by each pest.

### *Rodents*

Rodents, including mice, Norway and roof rats, present the biggest problem

in food processing and storage facilities. The frequency with which mice and rats urinate and defecate allows for accumulation of excrement, which easily spreads bacteria and contaminates food. These rodent droppings are known to transmit pathogens that cause diseases including hantavirus and salmonellosis. In addition to numerous health risks, rodents can chew through wallboard, cardboard, wood and even electrical wiring, causing expensive damage and posing a fire hazard. Each year, rats contaminate and destroy enough food worldwide to feed 200 million people.

### Flies

The common house fly has been found to carry more than 100 kinds of disease-causing germs, including *Salmonella* and *Listeria*. The house

fly and its cousin, aptly named the filth fly, breed in moist or decaying garbage or excrement. By moving from garbage and excrement to fresh food, processing equipment and other surfaces, flies have ample opportunities to transmit disease-causing bacteria and contaminate everything they contact.

### Cockroaches

Cockroaches are easily the most reviled pest and with good reason. They are known to spread at least 33 kinds of bacteria, 6 kinds of parasitic worms and at least 7 other kinds of human pathogens, including *Salmonella*, *Vibrio cholerae* and *Staphylococcus aureus*. They can also pick up germs and debris on their legs while crawling through sewage and debris, which can be transferred to food, food surfaces and processing equipment.

### Stored Product Pests

This category of pests includes Indian meal moths, flour beetles and weevils, which can infest plant equipment and

contaminate food by leaving body parts and cast skins inside. Another concern is that these pests may accidentally be ground up into food products or infest flour, grains and cereals that are then shipped to grocery stores, restaurants and eventually homes.

The presence of pests—dead or alive—poses significant health risks. No matter the size or severity of an infestation, a pest problem is not a situation to be taken lightly.

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### Pest Management: An Absolute Necessity

In food manufacturing and storage facilities, pest management is accepted as a necessity. However, in practice, when every penny and every moment must be spent strategically, the necessary financial and time commitment given to

proper pest management tends to fluctuate. The critical importance of pest management can sometimes be minimized and even rationalized away when there are budgetary decisions to be made regarding day-to-day operations. Yet a consistent focus upon developing a strong pest management program—one that includes regular inspections and audits, proactive pest-proofing measures and an immediate action plan to put in place when faced with a potential infestation—is essential for providing consumers with safe and healthy food products.

Corporate executives and food facility managers must ensure that all links within the food safety chain are properly maintained, with pest management a very important link. Strong pest management practices can often lay the foundation for overall best practices. When food facilities understand the threats posed by pests, acknowledge the significant contamination risks and fully recognize the value of being proactive in pest management, they can then achieve the benefits of operating at their safest

and ultimately most efficient production levels.

### Pest Management: Best Practices

Pest prevention works best when facility management and a pest management company form a partnership with one goal—keep the facility pest-free and ensure that the food produced or stored there is safe.

The National Pest Management Association (NPMA) is currently revising its manual, *Pest Management Standards For Food Plants*, with a new edition expected in October 2012. The standards do not preempt local, state, provincial and/or federal regulations, but instead offer a road map for those pest professionals who service food processing and storage facilities. Any service provided must comply with government regulations or statutes governing pest management, safety and food protection. In addition, food plants may have requirements more stringent than these standards alone.

Since facility managers are the first line of defense as they monitor potential entry points and signs of infestation, NPMA offers the following advice:

- Ensure the facility has adequate waste management systems inside and outside. Improper garbage disposal and overflowing and dirty dumpsters are sure ways to attract and breed pests.
- Seal all pest entry points around pipes, the foundation, loading docks and others. Ensure there are no leaks in the facility roof.
- Institute a "no-prop" door policy for employees. Install air curtains and/or screens to keep flying insects out.
- Install a gravel or rock perimeter around the facility to discourage vegetation growth that could invite and harbor pests.
- Maintain an 18-inch inspection aisle inside the facility. Keep pallets away from the walls and paint the aisle white so that pests and their droppings are easily visible.
- Eliminate clutter that pests could hide and nest in.
- Assess the type of outdoor lighting used. Consider the use of sodium

vapor lights to discourage pests that are attracted to light.

- Perform regular inspections of storage areas, equipment, drop ceilings, processing areas, locker rooms, windows and ventilation and laboratories for signs of insect or rodent infestations.

Pest infestations that arise after companies forgo proactive prevention measures tend to wreak far more havoc, and they cost more to treat than the prevention program that may have staved off such pest problems.

## The Bottom Line

While there is no guarantee against future outbreaks and product recalls, the *Salmonella* outbreak of 2009 offers a serious lesson for food manufacturers and for consumers. As food processing facilities reevaluate what safety means for their consumers and their business, pest management must be an important factor in the safety of both. No longer can pest management be relegated to a secondary priority, nor can it fall through the cracks of misunderstood standards, putting the lives and health of consumers at risk. Focusing on proper pest management programs will go a long way in keeping the company's reputation intact and its products safe for consumers. ■

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National Pest Management Association. The NPMA, a nonprofit organization with more than 7,000 members, was established in 1933 to support

the pest management industry's commitment to the protection of public health, food and property. For more information about pests and prevention tips, please visit [www.PestWorld.org](http://www.PestWorld.org).

For more information on pest control in food facilities, please visit [www.foodsafetymagazine.com/signature.asp](http://www.foodsafetymagazine.com/signature.asp).