



FLYING INSECTS

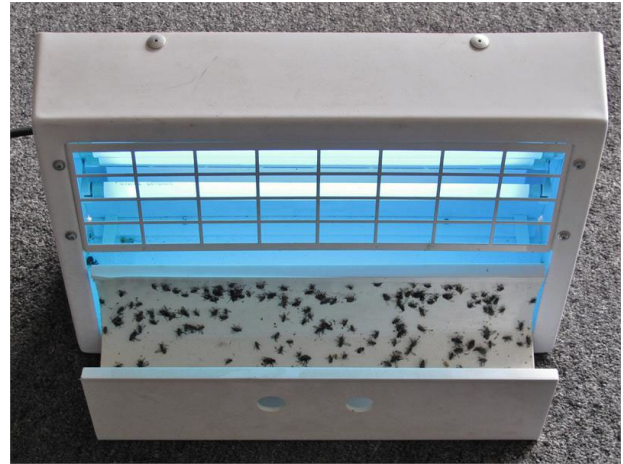
Let's See Some Identification

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Flying Insects

As food plant operators and sanitarians discuss their pest management plans with their Pest Management Professionals (PMP), the term “flying insects” typically is brought up. In meeting FSMA and third party auditing standards, preventing and controlling flying insects in the food supply chain is of the utmost importance. For that reason, the discussion of flying insects is an important, but often daunting one. After all, insects are the only invertebrates that can fly and



though we don't know exactly how many species are capable of flight, there certainly are a lot of them! When implementing integrated pest management strategies to prevent and control flying insects, it's therefore essential that we know exactly which of the dreaded flying insects we are attempting to combat. With so many flying insects, there's rarely a “one size fits all” control measure. Proper identification or categorization provides both the Pest Management Professional (PMP) and the Operations Manager with essential information required for an action plan. Here, we'll discuss the most commonly found “Flying Insects” in a food facility.

Filth Flies: Bottle Flies, House Flies

Filth Flies, as a group, are problematic because they're disease vectors. As their name implies, they prefer a filthy habitat, one where bacteria are prevalent, and as they fly from food to food, they spread these bacteria. They're therefore much more than a nuisance pest, they're a huge food safety risk, and eliminating them in food areas is of high priority. The good news about Filth Flies is that they typically come from the exterior. So, simply shutting windows, sealing doors, or installing screens does the trick. To eliminate the breeding sites on the exterior, sanitation is key, as is carcass and feces removal (commonly an issue if buildings are near parks).



Small Flies: Fruit Flies, Phorid Flies, Drain Flies, Fungus Gnats

The presence of Small Flies typically tells us something completely different from the presence of Filth Flies. Whereas Filth Flies are usually breeding outside and finding a way inside, Small Flies are typically breeding inside. That means simply closing



doors won't eliminate the problem like it might with Filth Flies. Small Flies also tend to have specific habitats. While all Small Flies need moisture in order for their larvae (maggots) to grow, they each have different food preferences, which results in different habitats. Red-Eyed Fruit Flies prefer food that is just starting to ferment. If we find Red-Eyed Fruit Flies, we may want to look in areas where fruit is prepared or stored. Dark-Eyed Fruit Flies and Drain Flies both prefer food that has rotted into something that no longer looks like food. Gunk in drains is often the breeding site for these species. Fungus Gnats are typically found in potted plants. Phorid Flies are often associated with broken drains or sewers.

Stored Product Pests: Indianmeal Moth, Cigarette Beetle, Warehouse Beetle, Red Flour Beetle

Stored Product Pests are a unique group of insects that live in the food they eat. While the food source can vary considerably depending on the species (some will eat anything, including spices, others are very particular), it's



primarily grain-based foods and at least one stage (typically the larval stage) is found living within the food. They can remain undisturbed like this for generations, resulting in flying adults within the facility. While certainly some species can come from the exterior, more commonly they're found in forgotten ingredients or product, tucked away in far off shelves or in accumulated spillage that isn't easily reached by sanitarians.

Cluster Flies

Cluster Flies are part of a larger group often referred to as Fall Invaders. They, as the name implies, typically appear in the fall. But, though they look similar to Filth Flies, their behavior is very different, and that's what dictates this fall appearance. Cluster Flies lay their eggs in soil, and the maggots burrow into earthworms, where they'll live and feed until adulthood. When the cooler temperatures of fall arrive, the adults seek sites to over-winter. While it may be in tree bark or rock crevices, often it's in the cracks, crevices, and voids of buildings. They get their name because they're found clustering together on the sunny side of walls or at windows on sunny days. Unlike Filth Flies, Cluster Flies aren't a symptom of an exterior garbage or carcass issues. Instead, these flies are in our buildings because they're looking for overwintering sites to spend the cooler temperatures in. The solution? Sealing cracks to prevent entry.



Identification Narrows Down the Harborage

The importance of identification is so key for this group of insects. Without it, we could be searching the wrong area for the culprit or using a control strategy that may not even impact it. For example, perhaps Indianmeal Moths are our flying insect. The larvae of the Indianmeal Moth are typically buried in stored product such as pet foods, peanuts, cocoa, or grain-based mixes. While applying a chemical to the walls may be very effective at controlling filth flies, it will not result in much impact of the Indianmeal Moths, which are inside the facility and inside the food. Cleaning the drains sure won't reduce the number of night flyers, because they're coming from the outside. Closing the doors probably won't reduce the number of dark-eyed fruit flies, because they're breeding on the inside of the facility. PMPs are trained to properly identify using hand lenses, microscopes, behavior traits, and picture keys. Identification, along with a strong partnership between a PMP and their client, can allow for quick identification and removal of the harborage and pest.





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About the Author

Anna Berry is training manager at McCloud Services. She is a board-certified entomologist, ServSafe certified and instructor and proctor for the National Restaurant Association and is certified in HACCP. Berry holds a bachelor's degree in biology from the University of Oregon and a master's degree in grain science from Kansas State University.

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