Technical Bulletin

Setting the Standard for Food Safety and Pest Management Solutions

March 2019 Volume 9, Issue 3

Listeria Species

Listeria in the food industry is a scary thing, but not all Listeria is bad listeria. Dr. Everitt Murray originally named the pathogen as Bacterium monocytogenes. Later it was renamed as Listeria monocytogenes to honor Dr. Joseph Lister, the doctor who discovered the importance for surgeons to sterilize their instruments before operations in order to prevent infection. Listeria, until 1992, contained 10 known species. As of 2019, 17 species have been identified. Only two of these species, ***L. monocytogenes*** and ***L. ivanovii,*** are considered pathogens.

Listeria species are Gram-positive, rod-shaped, and facultatively anaerobic (requiring an absence of free oxygen). The major human pathogen in the genus Listeria is L. monocytogenes. It is usually the causative agent of the relatively rare bacterial disease listeriosis, an infection caused by eating food contaminated with the bacteria. Listeriosis can cause serious illness in pregnant women, newborns, adults with weakened immune systems and the elderly, and may cause gastroenteritis in others who have been severely infected. Not everyone will get sick or show symptoms of Listeriosis.

Submitted by: Rich Gibson, ACE, CHA

The Hairy Fungus Beetle

Order: Diptera **Family:** Sciaridae **Species:** Lycoriella and Bradysia

Fungus gnats are small, dark, short-lived flies that may be mistaken for phorid or fruit flies. Adults are 1/8 inch long, delicate, black flies with long legs and antennae. There is a distinct "Y-shaped" pattern on the forewings. The larvae are wormlike and translucent, with a black head capsule. The fungus gnat goes through complete metamorphosis: Egg, 3 instar larval development, pupae and adult. Adults live about 1week, during which time each female will deposit 100 to 150 eggs.

Adults, while annoying, feed on water and plant nectar and pose no harm to humans. The control of fungus gnats is theoretically simple; get rid of their source of attraction. Fungus gnats are historically associated with houseplants. While it is not typical to find houseplants in a food manufacturing or storage environment, it is common for office personnel to maintain ornamental plants in the office areas. If there are complaints of 'gnats' in an office, seek out houseplants and inspect the soil for larvae. Replacing the soil (and adding 1-2" of sterile sand to the plant) is ideal if the owner wishes to not remove the plant altogether. In addition to houseplants, fungus gnats are known to breed in decaying vegetation and organic matter that can be found in retail food establishments, mushroom houses and the like. Chemical control is not often utilized as traditional IPM methodologies are typically enough. Space treatments are effective against adults but little is effective against the burrowing larvae.

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Dark, Damp & Warm

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A corrugated box manufacturer had received a complaint of a silverfish in the corrugate of a carton sent to a food manufacturer. "Luckily", the carton was secondary packaging and would not have contacted any food directly. The RK Environmental Services (RKE) Regional Operations Manager was contacted and a Service Specialist dispatched to investigate.

The Service Specialist was familiar with the location but had never noticed any silverfish during past services or inspections so an investigation was completed with help from the plant QA Manager. Archived reports were reviewed and there was no record of silverfish being identified or treated in the previous few years (150+ services). While discussing the issue in the employee break room, one of the few quiet areas of the plant, a maintenance employee overheard the conversation and stated that he sees silverfish "all the time" in the boiler room. The Service Specialist was unaware of the boiler room as it was nestled deep in the building, behind a large blast door labeled "Authorized Personnel Only" so it wasn't accessible and essentially off limits for safety reasons.

When entering the boiler room with the maintenance personnel it was dark, extremely warm and very humid, ideal conditions for many pests, especially silverfish. As soon as the lights were turned on dozens of silverfish were observed, along with a few Oriental Cockroaches, scattered into open floor/wall junctures and the floor drains.

The Service Specialist wasted no time in getting to work treating the areas. A mixture of an Insect Growth Regulator (IGR) and Suspension Concentrate residual insecticide were applied in all cracks and crevices throughout the boiler room. The residual insecticide was labeled for control of both the silverfish and Oriental Cockroaches. A dozen glue boards were also placed in various locations in the room to allow for monitoring of additional activity.

To ensure regular inspections could be undertaken, the Service Specialist was provided a key to the room and given full access. Weekly inspections of the area showed a decline in activity and the maintenance personnel caulked all of the open cracks and crevices to remove potential harborage and/or entry points.

How the rogue silverfish made it into a carton remains a mystery.

Take Away Tips:

- Talking to employees is a great source of informaiton
- Customer complaints are a useful tool for identification of issues
- Not all areas are exempt from inspection
- The more secluded, the liklihood of activity increases
- Not all insects are common
- Record all activity

Submitted by: Rich Gibson, ACE, CHA