

CASE STUDY

WRITING A PRESCRIPTION FOR CONTROLLING DRUGSTORE BEETLES

POST-HARVEST LOSS DUE TO INSECT INFESTATIONS HAS BEEN ESTIMATED AT AROUND \$1.25 TO \$2.5 BILLION ANNUALLY IN THE UNITED STATES

When a food processing and storage client called their local Sprague office in a panic about an overwhelming number of insects – believed to be stored product pests – inside their facility, the Sprague pest detectives swung into action.

A food processing facility, including those that use pastas, cocoa, beans and other grains, can be vulnerable to a wide variety of destructive stored product pests including a variety of beetles and moths.

How costly is the damage caused by stored product pests? According to the USDA, post-harvest loss due to insect infestations has been estimated at around \$1.25 to \$2.5 billion annually in the United States wheat and corn markets alone. Insect infestations can reduce weight, nutritional value, and overall quality by introducing odor and mold in stored products.

When Sprague arrived at the facility, the first item on the checklist was to make an accurate identification of the insect. Proper identification is important to locating the root cause of the infestation and developing an effective management strategy.

It was confirmed the facility had drugstore beetles, a commonly encountered pest in food processing and storage facilities. The infestation was so intense that the beetles were getting stuck in the light traps Sprague had installed to monitor for pest activity.

Armed with that knowledge that the Sprague technician and the client's QA team were performing a thorough investigation to locate the source of the infestation. They quickly identified a pallet of pasta in a single storage room as the culprit.

It was determined the pallet had been sitting in the storage room for an extended period – possible a year or two – and it had likely been infested the entire time.

Smaller sized facilities like this one are prone to hanging on to ingredients and finished products longer and have a more random inventory than their larger counterparts due to financial and staffing considerations.

Why hadn't the facility staff or insect monitors picked up on their presence earlier? Drugstore beetles have a longer life cycle than other similar stored product beetles and are more likely to remain inside their food source as they complete the cycle.

GETTING CONTROL

Due to the intensity of infestation the client thought a fumigation would be the only way to effectively eliminate the pests.

The facility, which had not experienced any previous pest issues, was in a multi-unit building and fumigation would require neighboring businesses to be shut down and would be quite costly. An added twist was that portions of the facility were USDA organic certified which restricts what products and treatment methods can be deployed.

Since the infestation was limited to a defined area of the facility where no organic products were stored, the Sprague team determined fogging and crack and crevice treatments – in addition to removal of the infested pallet and a thorough cleaning of the area – would deliver the intended result.

As an additional preventive action, the facility's QA staff inspected every pallet in the warehouse – a time consuming process – to ensure there was no evidence of pests.

This approach, along with the placement of additional insect light traps for monitoring, would provide a less costly solution than fumigating the structure.

LESSONS LEARNED & A PATH FORWARD

After the infestation had been controlled, Sprague sat with the facility management team to review steps on how to prevent future pest issues. The recommendations included the following:

- Develop an inventory management program that follows the first-in, first-out mantra. Avoid over-ordering and if you do not have an immediate use for an ingredient, dispose of it.
- Establish incoming shipment protocols to spot signs of possible pest activity and do not hesitate to reject a shipment of damaged products.
- Create an area in your facility to properly inspect incoming shipments that won't expose potentially infested products to your warehouse or production operations.
- Regardless of the size of the facility, schedule regular risk assessments (twice a year, quarterly or annually) to review your pest management programs and make sure they are getting the job done.

If your facility needs an innovative pest management and food safety partner, look to experts at Sprague Pest Solutions.

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