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Insec(tc)ure*:
Are you insecure about your insect cures?

A UT Urban IPM Lab Newsletter for the Pest Management Industry

The Meal Moth, *Pyralis farinalis* (L.)

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Sometimes you get it wrong, and this was one of those times. On April 3rd, I was left a plastic bag with a description that "these mounds were on my basement floor. It is concrete, there is some moisture there. It has been undisturbed - vacant for 3 years. The ceiling is the 1st floor joists and wood flooring of the first floor."

Figure 1. "Mound" from a moist, 3-yr vacant basement. Visible under the microscope are feces, silk, seed and a larva near the arrow at the top.

I was surprised by the weight of the plastic bag. Figure 1 shows an image of the “mound” viewed under a microscope. Feces, silk, and seed were visible, and if you look closely at the top of the image near the arrow, a larva was present. The silk interwoven between the feces created a mass that was difficult to dissect. So I separated the larva from the fecal mass, increased magnification and took a few photos (Figure 2). It looked like the larva was starting to decay.

Figure 2. Caterpillar or larva found in fecal mass.

This “mound” submission resembled a previous submission of infested pepitas, a type of pumpkin or squash seed lacking a hull. Indianmeal moth *Plodia interpunctella* (Hübner) larvae had laid down silk that was covered with frass as the larvae chewed the pepitas. The damage looked very similar to the basement “mound”. Alas, I took the evidence presented and concluded that the basement “mound” was also caused by Indianmeal moth larvae. I did not work the taxonomic keys of *Immature Insects* by Fred Stehr, but I did briefly look at the line drawing of the Indianmeal moth larva and decided it looked close enough. I thought the homeowner had either left bird seed in the basement or that mice had stored the seed as a food cache and, unfortunately, the Indianmeal moths had found it. It made perfect sense to me.

Well, a few days ago I went into my lab to photograph a mason bee and noticed I had left the plastic bag of the basement ”mound” near the scope. Moving it out of the way, I noticed adult moths in the bag. Expecting to see Indianmeal moth adults, I was certainly surprised to see another moth species. The wing scales had rubbed off most of the moths as they attempted to escape the bag, so I didn’t see the obvious copper, black and beige scales of the Indianmeal moth. Then I noticed the wings were held differently than the Indianmeal moth. Digging through the bag, I finally found a moth with most of its scales intact (Figure 2).

Figure 3. The meal moth, Pyralis farinalis *(L.).*

Meet the meal moth, *Pyralis farinalis* (L.). Both the Indianmeal moth and the meal moth are in the family Pyralidae so I wasn't too far off in my identification. The scale color and patterns are distinctive in the adult meal moth, with alternating waves of brown and yellow separated by narrow white lines. The wingspan is about an inch. Larvae can grow to about 3/4 inch to an inch in length. Although found throughout the temperate world, this pest is mostly considered a minor pest.

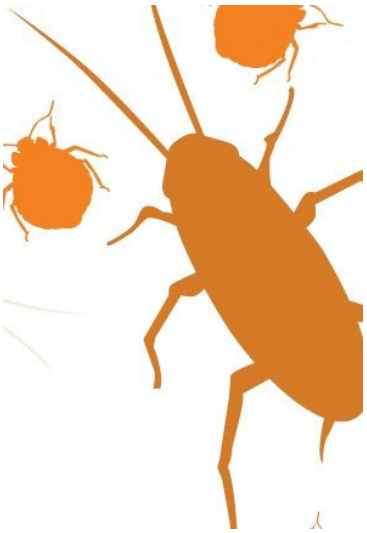
The larva feeds on cereals, damaged grain, flour, seeds, and other objects. Often the flour fed upon is spoiled, and this larva is often found feeding on seeds in damp and cool areas. Well, that description certainly describes our basement "mound". They have also been found feeding on beans in expansion joints, spilled grains in pipe chases, and many other items, but typically food items are in poor condition. The larva's head is dark, the thoracic segments are also darkened and the end of the abdomen appears somewhat orange. Silk tubes are often spun with food material around the larvae and it feeds from the tube opening. Development time is fairly quick with this moth and can be completed within 8 weeks allowing multiple generations to be produced per year.

My assumptions about the Indianmeal moth finding a rodent food cache or bird seed still apply to this pest. Management should include finding and removing all of the seeds and other meal moth larval food materials found in the moist basement. Moisture could be reduced by using fans and demhumidifiers and repairing leaks. The basement should be inspected for signs of rodents. If evidence is detected, traps should be set and potential rodent entryways sealed. And, if necessary, insecticides can be applied to cracks and crevices to kill overlooked larvae or pupae.

Sources:

Weier, J. 2011. Stored Products pests. *In*, Handbook of Pest Control: The Behavior, Life History and Control of Household Pests, ed. dir. Stoy Hedges. Mallis Handbook LLC, pp. 882-967.

Save the date!



GET Educated.

9TH ANNUAL TENNESSEE BED BUG, COCKROACH & RODENT MANAGEMENT MEETING

WEDNESDAY | AUGUST 2, 2023

UNIVERSITY OF TENNESSEE CONFERENCE CENTER | 600 HENLEY STREET | KNOXVILLE, TENNESSEE 37902

Check-in starts at 8:00 AM | Meeting 8:30 – 4:30 EDT

See https://bedbugs.tennessee.edu/resources/events/ for the finalized schedule, CEU assignment and registrationinformation.

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