

According to the National Pest Management Association, the Indian meal moth is probably the most frequently encountered stored product pest in the United States today. The threat to all our businesses is that these moths typically prefer to feed on, in addition to many other food sources, nuts, chocolates, candies and even cookies and graham crackers, making our stores prime lifecycle attractions. To compound the problem, once infested, it is very difficult to eradicate the pest without some patience and a disciplined approach to the steps that must be taken.

Therefore, we have outlined some recommended preventative procedures, signs to look for, as well as control steps to take if you discover an infestation in your store.

### **Preventative Procedures:**

- ◆ Carefully inspect all deliveries of nut products for signs of infestation.
- ◆ Store all nut products in tightly-sealed plastic containers and freeze for at least 7 days at a minimum of zero degrees F. This will kill all stages. Your nut vendors should also be following this procedure.
- ◆ The Kitchen has started over wrapping all stock boxes with a stretch wrap. However, we recommend that you additionally bag and seal all stock boxes in Zip-Lock bags or in a heavy gauge plastic for storage. All partial cases should be re-bagged/sealed after opening.
- ◆ Routinely empty, thoroughly vacuum and clean with mild bleach or sanitizing agent all candy cases, shelves, display units and stock storage areas.
- ◆ Food sources stored longer than 30 days are most susceptible to infestation so do not overstock products.
- ◆ Promptly remove all packaging material and empty shipping boxes and keep all storage areas clean.
- ◆ Pesticides are of limited value in prevention and control since they do not penetrate stored material which is the source of the moth.
- ◆ The use of sticky traps is helpful to detect the presence of adult moths, but will not control an infestation.
- ◆ Train all employees to wash hands immediately upon reporting for work as the moth is most commonly found in the home in grains, pet food and bird seed.
- ◆ Train all employees about these pests, signs to look for and procedures to follow if pests are found.

### **Signs to look for:**

- Eggs: Microscopic and very difficult to detect. Eggs hatch in 4-8 days and are typically laid on or near food.
- Larvae: When hatched, they are about 1/16” and rarely seen without magnification. Immediately seek food sources and can penetrate cracks and loosely-closed packaging unless sealed with plastic. Grow quickly to 1/2”, are pale yellow to pink with a dark head (see attached photo) and spin a continuous strand of thin webbing. Typically mature in 14 days and leave the food source to pupate.
- Pupation: May take place far from food source. Cocoons are light brown in color and may be found in corners of cabinets, on walls and lighting fixtures, inside machinery and shelving units and in box corners. Adults typically emerge in 30 days.

**Adults:** Six legs and two antennae. About 3/8" long at rest and wing spread is about 5/8"-3/4". Forewing is grayish white and outer wing is copper/bronze in color. (see attached photo) Typically fly at night with only function to reproduce. Female typically lays 40-400 eggs on or near food source. Adult life span is 5-7 days. This is the stage most frequently seen.

**Control:**

- ◆ Control requires locating and eliminating the source of the moth. Patience and a disciplined approach to the control steps outlined below are critical to eradicate the pest. With an average lifecycle of 6-8 weeks, it is possible to have all four stages occurring at one time.
- ◆ Infested item should be immediately logged with date discovered, where located, product number, batch code, date product was received and type of moth stage. Then item should be bagged, sealed, removed from store. Joe Audia should be contacted with this information and he will determine if we would like to see the infested product.
- ◆ All food sources in the store should be immediately inspected starting first with product stored nearest the infested item.
- ◆ Ensure that all food sources in the store are bagged and sealed including partially-used boxes.
- ◆ Empty, thoroughly vacuum and clean with a mild bleach or sanitizing agent all candy cases, shelves, counters, display units, lighting fixtures and stock storage areas on a DAILY basis until there are no signs of additional infestation. This will remove eggs, larvae, pupae and adults but will not provide a residual effect.
- ◆ Remove candy trays from chocolate cases every night and bag/seal. Reinspect these candy trays before returning to the chocolate cases.
- ◆ Remember to wash hands frequently when cleaning as eggs can be transferred to other areas or food sources.
- ◆ Set sticky traps to help monitor the presence of adult moths. Remember that traps will not control an infestation. Eliminating the source of the moth is the only solution.
- ◆ Contacting your local pest control company may be helpful depending on the extent of the infestation.

As always, the key to not having the pest problem is following the prevention steps. Please do not hesitate to call if you have any questions.