http://www.oznet.ksu.edu/entomology/extension/extensio.htm

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

Department of Entomology
239 West Waters Hall
K-State Research and Extension
Manhattan, KS 66506-4027

Tel: 785-532-5891
Fax: 785-532-6258

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Miller Moths

Miller moths are being reported in western Kansas. Though "miller" is a generic term that can apply to a number of different moth species that invade homes, in early spring, the army cutworm is usually the culprit. It is generally gray or light brown and has wavy dark and light markings on the wings. The wing patterns of the moths are quite variable in color and markings.

Miller Moth

Army cutworm has a unique life cycle. Eggs hatch in the fall, and the insect spends the winter as a partially grown larva. High populations of these caterpillars in the spring can cause significant damage to alfalfa, winter wheat and other winter crops. Pupation occurs in mid-spring with the adults emerging two to three weeks later. They then fly west to Colorado and spend the summer in the mountains. This migration can be as long as five to six weeks though most of it is concentrated in a two to three period. While in Colorado, they feed on nectar of summer wild flowers. In late summer or fall they return to the plains to lay eggs completing the cycle.

The problem for Kansas residents usually occurs during migration to Colorado. Miller moths avoid daylight and seek shelter before daybreak. Ideally, a daytime shelter is dark and tight. Small cracks in doorways of homes, garages and cars make perfect hiding spots. Often, many moths may be found sheltered together in particularly good shelters. If they happen to get inside a home, they often cannot find a way back out and can become a nuisance.

Moths do not feed or lay eggs while inside (actually during the entire migratory flight, the moths do not produce or lay eggs). Furthermore, the caterpillar stage would not survive on household furnishings or other foods in the home. However the moths can create some problems while in the home. Moths that have recently emerged from the pupa produce a reddish-brown fluid that often is deposited on windows, walls or other areas where the insects rest. This is called meconia and is the waste product stored during pupal development. Meconia is primarily proteinaceous and is usually not difficult to remove. Follow normal fabric-care instructions on clothing. General household cleaners can remove the spots from walls and other surfaces.

If moths can't find there way out of the home, they will eventually die. Dead moths may serve as food for carpet beetles and other household scavengers unless they are cleaned out. If large numbers die, there may even be a small odor problem.

However, the main thing that people often complain about is just the moths milling around lights both inside and outside the home. Although there is still debate among scientists on this point, most believe moths are attracted to the light because they use the moon to help orient their flights. Such distant points of light allow the insects to fix their flights by maintaining a constant angle to the light source. Artificial lights confuse the insect response, since these lights are so close (an unnatural situation). Trying to maintain the flight angle to these close light sources cause the insects to spiral to the source.

Insecticides have little or no effect in controlling millers. The moths are not very susceptible to insecticides. Furthermore, any moths killed will rapidly be replaced by new moths that migrate into the area nightly. Therefore the key to control is prevention. Seal any obvious openings, particularly around windows and doors. Also, reduce lighting at night in and around the home during flights. This includes turning off all unnecessary lights or substituting non-attractive yellow lights.

Once in the home, the best way to remove the moths is to catch or trap them. A vacuum can be an easy way to catch the moths when they are at rest. A light bulb suspended over a partially filled bucket of water plus detergent can be used to trap them. Moths attracted to the light often will fall into the water and be killed.

The good news is that, the fall migration is much less obvious, since many of the moths die during the summer serving as food for birds and grizzly bears.

Watch for Cutworms and Southern Corn Leaf Beetles on Corn

Black cutworm damage is usually restricted to the first couple weeks after the corn emerges. The appearance of scattered areas of transparent or notched leaves indicates small larvae are present. Frequently, however, this subtle damage goes unnoticed. Larger larvae cause more noticeable damage by chewing through the plant stems causing wilting and actually cutting off the plants. Reductions in plant stand will result if the growing point is above where the plants are severed. Cool temperatures intensify and prolong damage by slowing the rate of corn development relative to that of cutworm development.

Cutworm problems may occur statewide, but usually develop to more serious levels in eastern Kansas. Problems in Kansas are much less frequent than in corn production areas to the east. The following conditions often are associated with cutworm problems: early spring weed cover prior to planting (which often is associated with late wet springs), nearby permanent vegetation, corn following soybeans and reduced tillage. However, if all attractive conditions are available and an adequate egg-laying moth flight does not develop, cutworm problems will be non-existent. This is the major reason why rescue treatments rather than preventative treatments are generally recommended in Kansas.

Corn should be scouted from the start of plant emergence until corn is 6 to 8 inches high. The application of a rescue treatment may be justified if 3 to 5 percent of plants (two-leaf stage) are being cut and the majority of the worms are 1/2 inch or less in length. Each cutworm has the potential to cut from four to six plants at the two-leaf stage of development.

For More Information on Black Cutworms see:

Black Cutworm in Kansas;
http://www.oznet.ksu.edu/library/ENTML2/MF1105.PDF

For control options see Pages 12 and 13 of Corn Insect Management 2003;
http://www.oznet.ksu.edu/library/ENTML2/Mf810.pdf

In northeastern Kansas one needs to also be aware of another early season pest, the southern corn leaf beetle. is. Adults are drab in color (grayish to brownish), 3/16- to 1/5-inch long, and may be covered with soil particles. They climb on the plants, but fall to the ground when disturbed. Feeding damage reduces plants to fragments. The injury can be easily mistaken as having been caused by cutworms.

Southern Corn Leaf Beetle

Southern Corn Leaf Beetle Damage

These beetles destroyed large areas within isolated northeastern Kansas corn fields during 1997 and have been present to some extent every year since. Previous to these reports, the insect had not been found damaging corn in Kansas for more than 80 years.

Control information can be found on page 20 of Corn Insect Management 2003; http://www.oznet.ksu.edu/library/ENTML2/Mf810.pdf

Pine Wilt Disease

For the last 4-5 years, pine wilt disease has been killing scotch pine in windbreaks (Figure 1), residential settings (Figure 2) and Christmas tree plantations (Figure 3). Pine wilt disease is caused by pinewood nematodes.

Figure 1

Figure 2

Figure 3

The larvae of longhorn beetles commonly referred to as “pine sawyers” overwinter in trees which died the previous fall. In the spring, larvae pupate. Newly emerged beetles remain in their pupal chambers for a short period of time, during which dispersal-stage pinewood nematode larvae enter beetle tracheae (breathing) systems. Beetles emerge through round emergence holes (Figure 4) and fly to healthy pines where they feed (Figure 5). At that time, nematodes exit though the spiraclular openings and enter the trees through the feeding site wounds. The “pine sawyers” continue to feed and mate (Figure 6).

Figure 4

Figure 5

Figure 6

Meanwhile, the recently introduced pinewood nematodes mature and enter their reproductive phase. Pinewood nematodes are very prolific and produce many generations in a short period of time. Massive nematode populations obstruct the flow of tree nutrients and water by physically clogging vascular elements. Nematode-stressed trees are selected (by female “pine sawyers”) for egg-laying. Females use their mouthparts to create readily identifiable ovipositional sites (Figure 7). Stressed trees are ideal for “pine sawyer” borer development.

Figure 7

By mid-August, infected pine trees become evident due to their lighter coloration and signs of wilted/dead areas. The wilting process proceeds rapidly as indicated by Figures 8-11).

Figure 8
August 20

Figure 9
August 27

Figure 10
September 3

Figure 11
September 10

As mentioned above, it is in newly killed trees that "pine sawyer" larvae overwinter and pupate in the spring. Therein lies the key for the control recommendation against "pine sawyers" ------ cut (Figure 12) and burn (Figure 13) dead trees.

Figure 12

Figure 13

By destroying the overwintered borer larvae, localized populations of current-season beetles will be reduced. Beetle emergence begins mid-way through May. Therefore, the cut-and-burn activity should be completed by the end of April, well ahead of the upcoming beetle emergence.

Ash/Lilac Borer

After ash trees have leafed out (Figure 14, background), those which remains leafless (Figure 14, foreground) are sure to draw one's attention. Upon close inspection, round holes will likely be seen (Figure 15). Had those same trees been inspected earlier, extruded pupal cases would have been observed (Figure 16). Because ash/lilac moths are delicate and incapable of burrowing out of trees, the extruded pupal cases allow them direct escape to the outside of the tree.

Figure 14

Figure 15

Figure 16

Newly emerged ash/lilac borer moths are commonly referred to as “wasp moths” (Figure 17). In addition to their wasp-like appearance, they are day-time fliers which are most active during the morning hours. Female moths emit a sex pheromone (Figure 18) for the purpose of attracting males. By placing commercially-available lures (containing the sex attractant) in sticky traps (Figure 19), the presence of ensnared males (Figure 20) signals the commencement of current-season ash/lilac borer activities.

Figure 17 Figure 18 Figure 19 Figure 20

Traditionally, ash/lilac borer moths are active from mid-April through June. In the Manhattan area, the first male ash/lilac borer moth was captured April 20. People wishing to protect ash, lilac and privet against ash/lilac borers should immediately begin the 2003 insecticide spray program.

Insecticide treatment residues are intended to kill newly emerged larvae as they attempt to bore into the aforementioned tree and shrub hosts. Because moths prefer to deposit eggs in cracks and crevices, it is essential that insecticides be applied in such a manner as to ensure their penetrating these hidden areas.

Two active ingredients can be considered for use against ash/lilac borers: endosulfan and permethrin. Endosulfan is almost exclusively marketed under the trade name Thiodan. Commercial Thiodan product labels specifically list both dogwood borers on dogwood, and lilac borers on lilac. Unfortunately, companies marketing insecticidal products towards consumers in the public sector have retained only dogwood and dogwood borers on their Thiodan product labels.

Numerous companies purchase permethrin which is marketed under a myriad of trade names. These companies choose to use the generic term “Borers” to reduce the amount of verbiage that consumers must read. Therefore ash/lilac borers (per se) seldom appear on home consumer product labels.

Alfalfa Weevil

This is the insect of interest according to the calls we’ve received this week. From those calls and the fields we’ve visited it seems there are three scenarios right now related to alfalfa weevils: 1) There are a number of alfalfa fields, both new and established, with very few weevil larvae. These still need to be monitored on a

weekly basis but we are probably getting within a couple of weeks of the first cutting. Thus, if it is determined that these fields have weevil infestations at or exceeding treatment thresholds you need to pay close attention to the pre-harvest interval (PHI: time that must elapse between application and harvest) or consider cutting a little early; 2) Fields that have been treated for alfalfa weevils within the last 7-10 days. Control seems to be pretty good. Again, you need to pay attention to the PHI as some of these range from 1 to 15 days depending upon the product, rate, and intended use of the alfalfa; 3) Fields that were treated the last of March or first of April. Some of these fields have less than expected weevil control. After checking some of these fields it seems to me at least, that application timing relative to sub-freezing temperatures soon after is probably the major contributing factor. Some of the fields had foliage that appeared dead or dying probably due to cold temperatures. This probably happened after treatment. There were dead larvae but also live larvae. My guess is sprays were applied, not all eggs had hatched or larvae were protected in terminals, or below the canopy, etc., when cold weather hit. The weevil larvae that survived treatment were protected from the spray, and subsequently the cold weather. As the weather warmed and new growth occurs, new and or surviving larvae feed on the newer tissue not freeze-affected. So the residue activity of the insecticide is negated because it was applied to the canopy that was available at the time but is no longer available or attractive to the larvae because of the freeze damage. Thus, some larvae survived and continue feeding in the newer plant tissue. These fields need to be monitored closely as enough surviving larvae will certainly retard re-growth.

The following samples were submitted to the Insect Diagnostic Laboratory for the week of April 14- 18, 2003:

4-15-2003, Sedgwick County: March Flies in yard.
4-15-2003, Riley County: Male Lone Star tick off person.
4-16-2003, Brown County: Sac Spider in home (bite victim).
4-17-2003, Clark County: March Flies in yard.
4-17-2003, Sedgwick County: Spider Beetles in home.
4-17-2003, Leavenworth County: Clover Mites in yard, barn, home.
4-18-2003, Ottawa County: Carpet Beetles in cotton batting.
4-18-2003, Labette County: Alfalfa Weevil larvae in alfalfa.
4-18-2003, Atchison County: Burrower Bugs in yard.

If there are any questions regarding these samples or about the identification of any arthropod please get in touch with the Insect Diagnostician at 785-532-4739 or bbrown@oznet.ksu.edu

Sincerely,

Phillip E. Sloderbeck
Extension Specialist
Southwest Area Extension Office
Entomology

Robert Bauernfeind
Extension Specialist
Horticultural Entomology
Entomology

Jeff Whitworth
Extension Specialist
Entomology

Bobby Brown
Entomology Diagnostician