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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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Beginning of the Bagworm Season

The 2003 bagworm season is underway. Although Kansas residents are familiar with the bagworms, in most instances, it is not until later in the summer after bags are of sufficient size to be noticed (Figure 1) that people "take action" against the larvae/worms (Figure 2) residing in the bags. By that time, bagworms may have caused substantial damage.

Figure 1
Bagworm Infestation

Figure 2
Bagworm larvae

While recognized as a major pest of Juniperus trees and shrubs in landscape and windbreak plantings (Figures 3-5), it should be remembered that many deciduous tree species also serve as suitable hosts for bagworms (Figures 6-9). However, unlike deciduous trees and shrubs which have auxiliary buds from which new foliage is produced, evergreen species lack auxiliary buds. Thus they are slower to recover from the severe feeding damage inflicted by massive bagworm populations.

Figure 3

Figure 4

Figure 5

Figure 6	Figure 7	Figure 8	Figure 9
On willow	On locust	On blackberry	On barberry

Bagworms overwinter as eggs in female bags. Eggs tolerate low temperatures. In addition, they are further protected by the tough outer bag casing which encloses the pupal case inside of which the eggs per se are further cushioned/protected against the cold by fine body hairs which the female used to nestle the eggs after she deposited them. While the time of egg hatch varies from year to year depending on prevailing springtime temperatures, generally speaking, mid- to late May is considered to be when larvae hatch and begin emerging from their protected "home". Geographic location in Kansas is also a factor for the initiation of bagworm hatch, beginning sooner in the southeast as compared to the northwest. It should be noted that not all larvae emerge from the various bags simultaneously, but that eggs may hatch over a 4-6 week period of time.

People who have bagworm concerns should (now) take time to closely inspect/check their trees and shrubs for the presence of small bagworms. At this time of the year, lush foliar growth (Figures 10-12) makes it difficult to easily/casually observe small bagworms. However, with patience and close inspection, small "pencil lead" size bagworms (Figure 13) can be detected. And once a person recognizes the small bagworm, amazingly enough, others seem to magically jump-into-view as they move about while feeding.


Figure 10


Figure 11


Figure 12


Figure 13

The best time to control bagworms is while they are small and most susceptible to insecticide treatments. Another advantage to controlling bagworms early in the season is that they will be eliminated before they reach their larger and more damaging larval stages.

People often ask for an insecticide recommendation to control bagworm. The specific active ingredient/insecticide is probably the least important factor to consider in a bagworm control program. All products labeled for use against bagworms kill bagworms. More important is when and how a product is used.

A two-spray schedule is recommended in situations where the previous season's bagworm activities caused serious damage. Precious regrowth needs to be protected. Therefore, Spray #1 should be applied during the first week or week and a half into June for the purpose of eliminating those bagworms which emerged early during the hatching period. It is essential that Spray #2 be applied 3 to 4 weeks later to eliminate those larvae emerging in the latter part of the hatching period.

Where the previous year's bagworm population caused minimal damage the previous season and where there is ample foliage to support populations of small larvae early in the season, a single spray applied during the first week of July should be adequate for controlling bagworms. While some of the early-emerging bagworms may be a third

grown, they will not have caused noticeable feeding damage, and will be eliminated with the smaller bagworms which emerged late in the hatching period.

Insecticide applications must be thorough. Misperceptions about insecticide efficacy arise when mist-like applications to the outer foliage of infested plantings eliminate only those bagworms feeding on the peripheral fringes. The main portion of the population feeding on inner portions of the plantings go unscathed, and eventually move out to the periphery.

Ease of control is also regulated by the size and number of infested plantings. Thus once they are eliminated on small plantings, bagworm damage is quickly "repaired" (Figure 14 versus Figure 15).

Figure 14 - July 8

Figure 15 - October 11

However on larger trees, or where there are many trees (Figure 16), complete insecticide coverage is more difficult to attain. In these situations with less-than-successful spray programs, whole trees or portions of trees may be killed (Figure 17).

Figure 16

Figure 17

Robert Bauernfeind

Brown Recluse Spiders " Should I panic or should I not"

With warm days, brown recluse spiders (BRS) have become active and started searching for food (insect prey). Therefore, you may find them during times of their activity (evenings, mornings, nights) in your house. Is finding BRS a reason to be scared? Not at all! It is true that BRS are poisonous and their bite can cause serious symptoms (in rare cases and in sensitive people). However, the chances of getting bitten by BRS are very low. And 90% of bites do not result in any serious symptoms. A recent study indicated that considering the large BRS population in Kansas (and other states, including for example Oklahoma, Texas, Tennessee), the number of people getting bitten by these spiders is extremely low. Researchers from UC Riverside detected more than 2000 BRS in a single house in Kansas and no bites were ever reported from that site. The fact is, that the population of BRS in Kansas is so large that every house (even new ones) most likely has a BRS population. However, these spiders do not seek human company, they are not aggressive; in fact, they are shy (recluse) and try to avoid people. So, the only cases when

they bite people is if the spider is surprised, does not have time to run away and hide (e.g. they accidentally crawl into a bed and get squeezed or someone accidentally steps on them. During the day, BRS hide in cracks and crevices in the floor, walls, sealing, door or window frames.

Brown recluse spider - photos by Wade A. Payne, University of Kansas.

How to protect yourself: The best way to control BRS is through a non-chemical approach and prevention, including good housekeeping, sealing indoor and outdoor cracks and crevices (expandable foam works very well), frequent cleaning and removing clutter. Moving the bed, so it does not touch the wall, is a good idea. I also recommend that bedclothes do not touch the floor, and shaking clothing that has been not been use for longer time before its put on. The next step can be setting up sticky traps (the Catchmaster brand works well) into areas where you expect spiders to come to (under the bed, space under the furniture, dark corners etc.). Spraying insecticides does not offer good control of brown recluse spiders, that's because there is not enough body contact of the spider with the treated surface (spiders "tiptoe"). Dust form of an insecticide is little better that liquids.

What to do if you get bitten: Try to save the spider. Many bites are mis-diagnosed! Clean the wound with cold water, apply an ice pack and elevate the bite area (to restrict the blood flow). If you are sure or you think you were bitten by BRS, see your doctor immediately. Different people react to the bite differently. In some cases, there is no immediate pain associated with the bite. The symptoms usually appear within 6 to 12 hours after the bite. The severity of symptoms will also depend on the amount of venom that was actually injected by the spider. The common symptom in sensitive victims is a tissue reaction around the bite area, that includes blisters, swelling, in rare cases tissues peeling and ulcer formation. In some cases, other symptoms, including chills, fever, nausea, vomiting, rash, and stiffness may occur. The spider bite is typically characterized by two marks (from two spiders fangs); one mark means you may have been bitten by a biting fly or bedbug but not by BRS.

Ludek Zurek

Blister Beetles

Several alfalfa producers have inquired recently about the possibility of having hay certified "blister-beetle free". Most are especially interested in the first cutting and have heard this is usually harvested prior to blister beetle adult emergence. Thus, this is a good time to refresh our memory relative to blister beetle biology. First, to answer the question about certifying hay as "blister-beetle free": this is probably not a good idea for a couple of reasons. 1) Adult blister beetles have been detected during early May in alfalfa fields. However, populations usually peak from mid- June to mid- July so there is greater risk of picking them up in your alfalfa during the second- forth cuttings. 2) Even though there aren't many adults in alfalfa in May, when most alfalfa is cut for the first time, it doesn't take very many to adversely affect the health of livestock, especially horses (cattle apparently are much less susceptible). Some studies have indicated that it only takes between 25-300 beetles to kill a horse during one feeding. This depends, of course, upon the species of beetle, cantharidin content, and size and health of the horse. Since blister beetles are difficult to detect in alfalfa fields and it doesn't take very many to adversely effect the health of any livestock which ingest the beetles (or the cantharidin produced by them) it is risky to certify any cutting as "blister-beetle free". For more information please refer to Extension publication "Blister Beetles in Alfalfa", MF- 959.

Bean Leaf Beetles

The cool spring has slowed the growth of all crops. Thus, you need to monitor any insect pests present as the plants are not "outgrowing" some of the feeding damage as they normally would under warmer conditions. We have received several calls relative to bean leaf beetles in soybeans and have visited several fields. All soybean fields checked do have beetles and feeding is evident. As these beans are growing slowly they do exhibit more damage then is normally associated with the infestation levels encountered (highest level was 2 beetles/row foot). In all fields, the beetles were mostly evident only along the borders and ends of the fields. Again, you probably need to monitor these on a weekly basis. But, when warmer weather arrives and unless you have populations of 7 or more per row foot and they're actually skeletonizing the small plants or destroying the growing point, treatment is probably not justified.

Jeff Whitworth

WATCH COTTON FOR THRIPS

Over the past few years, probably the most consistent insect problem for Kansas cotton growers has been caused by thrips migrating from wheat as it matures in the spring. This may cause a burst of thrips activity that is particularly bad during certain years especially if it occurs just as the young cotton plants are emerging from the soil. These tiny, barely visible, splinter-like insects may be important pests during the first couple of weeks after plant emergence. They can set growth back, but they are also sometimes blamed for more damage than they cause.

Thrips are tiny insects usually less than 2 mm in length that can vary in color from yellow to brown to gray. Adults have two pairs of narrow wings fringed with long hairs. They have rasping-sucking mouthparts, so they rasp the plant tissue, and suck up the liquids.

Thrips cause most damage to seedling cotton. They rasp tender leaves and terminal buds with their sharp mouth- parts and feed on the escaping juices. Leaves may turn brown on the edges, develop a silvery color, or may become distorted and curl upward. Light thrips infestations tend to delay plant growth and retard maturity. Heavy infestations may kill terminal buds or even entire plants. Damaged terminal buds result in abnormal branching patterns. The duration and intensity of thrips infestations vary greatly according to season and geographic location. Once cotton plants are 4 to 6 weeks old, they usually outgrow thrips damage and begin to recover.

In some states thrips are not considered to be a major pest since cotton can usually out grow the problem, however since we have an early frost date in comparison with other Cotton Belt states, economic damage may occur when plants avg. 3 or more thrips per plant before the 4-leaf stage. Later in the season, control is rarely necessary.

Looking for these little critters is not always the easiest thing to do. You want to catch a problem before damage occurs. Start looking for thrips as soon as the plants begin to emerge. Look for thrips in the newest growth. Work on hands & knees. Sometimes you can shake plants over a piece of white paper and if you see small long, slender objects crawling, they are usually thrips. If there is residue of sand or soil on the plants, the thrips will be harder to see. And if it is windy, pull some plants, put them in a zip lock bag, take them to the truck then examine for thrips in the terminals and on the under side of the first two leaves. Also look for early signs of damage; thrips feeding in the terminal tissue cause the new leaves to appear ratty looking.

Options for Thrips control after planting include: acephate (Address & Orthene), dimethoate (Dimate, Dimethoate, & Cygon), endosulfan (Phaser & Thiodan) and thiamethoxam (Centric).

Phil Sloderbeck

CORN ROOT APHIDS

Two samples were received this week from southwest Kansas containing tiny aphids said to be feeding on corn roots. In both cases ants were also found in the sample. Some reported patches in the field with dying or wilting or stressed plants and the other reported that the damage was along a field border.

A one person indicated that it looked like they had Russian wheat aphids on the roots. And reported that when they dug up the plants they noticed ants quickly devouring the aphids as they were exposed. Another thought the damage in the field reminded him of chinch bugs.

It turns out that in both cases the plants were infested with corn root aphids. These are small bluish-green to grayish-green aphids that feed on the roots of corn. Symptoms of corn root aphid damage are usually limited to smaller plants (3 to 10 inches tall) and include yellow-purple coloring, stunting, wilting and dying leaves. Under favorable growing conditions plants are able to make fair growth even with heavy aphid populations. But in dry years light infestations can greatly retard growth. The aphids suck

juices from the roots and generally compromise the root system. They generally occur in spots with fields.

It turns out these aphids are tended by the cornfield ant. These are the ants that build the small mounds that are often common in fields and lawns. Actually without the ants corn root aphids could not exist. The aphid spends the winter as eggs in the nest of cornfield ants. The ants protect the aphids so they can feed off of the sweet, sticky honeydew that the aphids produce. (Thus, the ants were not feeding on the aphids, they were trying to rescue them as the aphid colonies were disturbed.)

The question that seemed to be on the minds of both callers was; "I have grown corn for several years and have never see this problem before?" I can't really remember seeing a problem with these aphids in southwest Kansas either. The textbooks indicate that they are common throughout the corn growing areas east of the Rocky Mountains. Possibly getting two calls in a few days is a result of this year's cool weather, which may have increased the time where corn plants were susceptible to these aphids, and if growing conditions had been more favorable the aphids would have never been noticed. On the other hand, one of the references I found indicated that there are no rescue treatments for this pest, but that soil insecticides should provide some control when applied at planting. This makes me wonder if this might be one of the secondary pests that may be increasing as we are moving away from soil insecticides for corn rootworm control. Another reference indicated that one option to control the corn root aphid was heavy tillage during the early spring to disrupt the ant colonies and reduce aphid numbers. Thus, the continuing shift to reduced tillage may be another factor playing into this being more than just an isolated problem.

Only time will tell, but if you are seeing stunted wilted plants in patches in your field, and noticeable ant activity, maybe it is time to do some checking for aphids feeding on the roots and take some notes on insecticide usage and field history to see if this problem will be a rare event or a sign of a potentially increasing problem.

Phil Sloderbeck

The following samples were submitted to the Insect Diagnostic Laboratory for the week of May 26- May 30, 2003:

5-27-2003, Cheyenne County: Bark Beetle from Elm and Locust Trees.
5-27-2003, Rice County: Ladybird Beetle pupa, larval skin on pine.
5-28-2003, Sherman County: Wolf Spider from home.
5-28-2003, Leavenworth County: Aphids on Apple leaves.
5-28-2003, Cowley County: Tortoise Leaf Beetles on Potatoes.
5-29-2003, Johnson County: 3 Lone Star Tick nymphs off person.
5-30-2003, Cheyenne County: Aphids from flowers.
5-30-2003, Leavenworth County: Muscid flies killed by fungus.

If there are any questions regarding these samples or about the identification of any arthropod please contact the Insect Diagnostician (Bobby Brown) at 785-532-4739 or bbrown@oznet.ksu.edu .

Brand names appearing in this publication are for product identification purposes only. No endorsement is intended, nor is criticism implied of similar products not mentioned.

Sincerely,

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