

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel



April 24, 2009.....No. 6

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Spruce Spider Mite



Fig. 1. Spruce spider mite.



Fig. 2. Spruce spider mite damage.

With the somewhat prevalence of “cool weather” occurring it is time to be aware of the presence of spruce spider mite (*Oligonychus ununguis*), which feeds on conifers including arborvitae, Douglas fir, hemlock, juniper, and spruce, and several species of pines. Spruce spider mite has piercing-sucking mouthparts that are used to remove plant fluids residing in the chlorophyll (green pigment), resulting in injured foliage appearing bronze or brown.

Spruce spider mite adults are oval-shaped and about 1/60th inch in length (Figure 1). They may be black, tan, or reddish in color whereas nymphs vary in color from light gray to green. Eggs, which are the overwintering stage, are round and reddish-brown. The eggs are typically laid underneath bud scales or in the axils of needles from September through November. The eggs hatch into nymphs during spring...like right now!

Spruce spider mite takes between 3 to 6 days to proceed from egg to nymph. The active nymphs feed primarily on needles—preferring the older needles. Their feeding causes stippling and bleaching of affected needles or foliage (Figure 2). These mites produce only slight webbing among damaged needles. How can you tell if spruce spider mites are present? Well, you can knock the mites off branches onto a white sheet of paper, where they will be easy to observe. If

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you “crush” or “squish” spruce spider mites they will leave a greenish streak, in contrast to a red streak, which indicates you just “smashed” a predatory mite.

The best way to manage spruce spider mites is to implement proper cultural practices including irrigation, fertility, and mulching, which avoids stressing susceptible host plants. This will avoid having to deal with abundant populations of spruce spider mite. There are a number of pest control materials with miticidal properties such as bifenthrin (Talstar), fenbutatin-oxide, potassium salts of fatty acids (insecticidal soap), petroleum oil (horticultural or summer oil), and hexythiazox (Hexygon). All these pest control materials have contact activity only—so thorough coverage of all plant parts is imperative in order to obtain sufficient control or “regulation” of spruce spider mite populations. Hexythiazox (Hexygon) is active primarily on mite eggs and larvae with minimal affect on nymphs and adults.

It is important to note that improper use of any of above-mentioned pest control materials may result in outbreaks of spruce spider mite because most of these materials are harmful to the natural enemies (predators) of spruce spider mite. If feasible, applying a “hard water spray” routinely will remove mites from plants; however, remember that water is not a registered pesticide by the Environmental Protection Agency or EPA...yet. These “hard water spray” applications may negate having to apply a pest control material. Furthermore, this strategy is less harmful to natural enemies. Be sure to exercise caution when using horticultural or summer oils on blue-needled conifers because the oil may cause discoloration. As always, be sure to read the product label carefully prior to making an application.

Raymond A. Cloyd

Practice What You Preach (Pine Tip Moth Management)

Extension Entomologists are replete with suggestions related to managing insect pests. Often times, these directions are not based on personal experiences, but rather on information gathered from various literature sources. Do we (Extension Entomologists) follow our own advice?

In August of 2008, a Mugo pine took on (what seemed to be) a sudden burnt appearance (Figure 1). In actuality, the change probably was somewhat gradual but simply went unobserved. With but a slight tug, the damaged terminals were easily detached and found to be hollowed out (Figure 2). This was damage caused by the larvae of Nantucket pine tip moths (NPTM).



Figure 1



Figure 2

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This was a totally unexpected event ---- in its 15 years of existence, there had never been any indication of NPTM presence. Was the damage all that serious? By hand-picking the damaged terminals, the Mugo's overall appearance was greatly improved (Figure 3 versus Figure 4).



Figure 3



Figure 4

Yet it was apparent that if ignored, NPTM would exact a further toll on the Mugo. This became even more apparent in spring as springtime development set in. The damaged Mugo had a very sparse appearance (Figures 5 and 5a) in contrast to an "intact" Mugo (a mere 20-feet away) (Figures 6 and 6a).



Figure 5



Figure 5a

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Figure 6



Figure 6a

In order to implement a control program, it is necessary to have an idea of the seasonal life history of NPTM. They produce 3 generations in Kansas. Overwintering as pupae in pine shoots, adults emerge in early spring. Mating ensues soon after emergence, and eggs are deposited on shoots, bud scales and needles. Larvae hatch within 10-14 days. They may (at first) feed externally at the base of needles and buds, or enter into and mine needles and buds. However, they eventually bore into the shoots where they complete their feeding and development. The first generation adults emerge during June to produce a second generation which matures to produce the third generation (roughly in late July into August) whose larvae form the aforementioned overwintering pupae.

In last year's 2008 Kansas Insect Newsletter #19, it was stated that that the aforementioned situation was caused by second generation NPTM, and that their larvae would be the overwintering 3rd generation pupae. And that if NPTM were to be nipped-in-the-bud in 2009, a management program would be required to help restore the "full appearance" of the Mugo planting. Pheromone lures and sticky traps are a useful tool for detecting the onset of specific pests.

Thus on March 1, a sticky trap baited with the NPTM pheromone was placed adjacent to the Mugo (Figure 7) to detect the onset of the 2009 season.

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Figure 7.

Because the sex attractant is a “female scent”, only males are drawn to the trap. But if males are active, females are soon-to-be, or are already active. Nantucket pine tip moths are colorful “little gems”. However, when mired down in sticky traps, they lose their wing scales and become nondescript in appearance (Figure 8). As seen within the square grids, NPTMs are quite small.

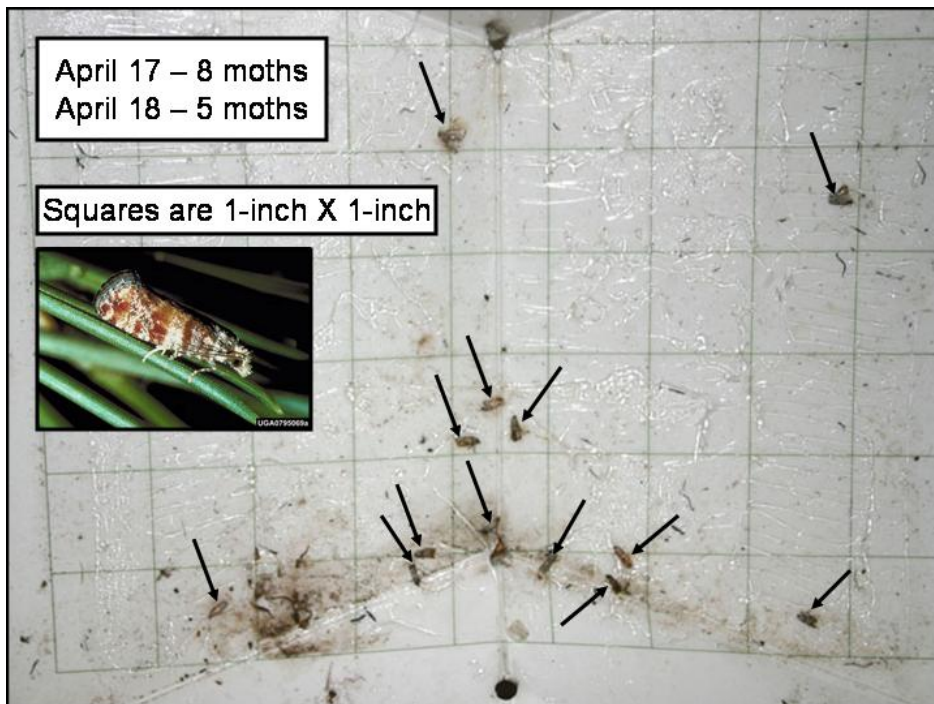


Figure 8.

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The first NPTM was captured during a warm spell on March 19. However, cooler weather followed, and there was no further activity until April 17 and April 18 when 8 and 5 moths were captured (Figure 8). A permethrin insecticide was applied to the Mugo on April 18. The monitoring process will continue for the purposes of recording additional moth activities and the necessity of additional spray treatments. (Other active ingredients against tip moths include acephate, carbaryl, bifenthrin and cyfluthrin).

NPTM activities are (likely) underway throughout the state. Many Christmas tree producers monitor NPTM activities and treat plantations on an individual basis depending on the appearance of trapped moths. For most residential homeowners, NPTM may never strike. But if they do, it will be too late to do anything but set up a monitoring program for future management efforts.

Robert J. Bauernfeind

Emergences of Ash/Lilac Borer Moths

As with NPTM, there is a lure with which to attract several species of clearwinged moths whose larvae are wood borers. The early-season borer-of-concern is the Ash/Lilac Borer (Figure 9).



Figure 9.

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In the Manhattan area, traps are set up in a privet hedge known to be infested with ash/lilac borer (Figure 10). Sticky traps have been replaced with small “baffle” traps with water-filled plastic collection bags ---- moths “stuck” in the water do not flap and batter their wings, thus making them “perfect specimens” for pinning purposes.



Figure 10.

The first ALB was captured Saturday, April 18 with an additional 4, 1 and 3 on April 20, April 22 and April 23, respectively. Thus, for people with ash/lilac borer concerns, the timing of insecticide applications to control ash/lilac borers is **NOW!!**

What has to be taken into consideration is the complexity of the task. That is contingent on the extent/number of susceptible hosts, the history and known presence of the pest and allowable monetary/labor expenditures. Given the profuse sprouting ability of privet and lilac, some people accept the presence of ash/lilac borer activities in established plantings, and periodically prune out old dead wood. It is different, however, for ash trees which are less able to sustain and recover from ash/lilac borer damage. Which trees to treat? Perhaps a better question might be, “Which trees might not be treated?”. There are different views. While nothing is 100% guaranteed, vigorous well established and mature ash are able to withstand ash/lilac borer activities.

Rather, it is newly transplanted trees which require help and assistance. Before making any final purchase, carefully inspect prospective trees for round holes through which ALB moths previously emerged (Figure 11). Reject any showing damage. Purchase only “clean stock”.

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Figure 11.

Refer to Extension Publication MF-402, February, 2007, for proper tree planting procedures. Newly transplanted trees “are weak” and prime targets for the successful survival of ALB larvae. During this period of susceptibility, providing adequate water will enhance the rapid

development of an extensive root system. In ensuing years, it never hurts to provide moisture (especially during droughts) ---- adequate soil moisture allows a surge of water movement within tree vascular systems ---- a natural defense (flushing action) against the survival of small larvae as they attempt to establish themselves. Also a seemingly minor item: avoid lawn mower or string-trimmer damage to the base of trees ---- ash/lilac borer moths are attracted to wound sites.

ALB moths deposit eggs on bare wounds (if available) and on the outer bark. Newly hatched larvae must bore into the tree’s interior. Insecticides applied (primarily) to the tree trunk and larger branches act as a barrier against the aforementioned larvae. Products containing the active ingredients bifenthrin or permethrin are effective against the larvae of clearwinged borer moths.

Robert J. Bauernfeind

The “Buzz” (May/June beetles)

Warm days and comfortable evening temperatures. And with the sun having set and darkness descending, what better time for a casual evening stroll? And our wildlife companions? May/June beetles (Figure 12).



Figure 12.

As soils undergo the springtime warm-up, May/June beetles “awaken” from their overwintering slumber and make their way to the soil surface. Typically from mid- to late April, beetles emerge and take flight. These beetles began their start in life as eggs deposited by their parents in **2006!** In Kansas, most species of May/June beetles have a 3-year life cycle spanning 4 calendar years.

From a blacklight trap operated in the Manhattan since April 1, 3 beetles were caught Monday evening, April 20. The flights have escalated each evening since. This is also accompanied by many beetles being attracted to street lights and crawling on the pavements beneath.

It is too early to tell to what level beetle numbers will ascend. In years under staggering populations, they fulfill the meaning of their “leaf feeder” generic name, *Phyllophaga* (*Phyllo* = leaf, and *phaga* = feeder). Of course, many people **correctly** recognize that the immature stages of May/June beetles are white grubs, but **erroneously** correlate annual grub damage in turf to May/June beetle grubs. In fact, damage to turf is seldom caused by these white grubs. Thus even though we may experience many active May/June beetles, people **should not** panic and purchase/apply grubicides: wrong Genus/species of beetles and grubs. More discussion on “annual grubs” in future newsletters.

Robert J. Bauernfeind

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Alfalfa Weevil

Alfalfa weevils have become very active in the last seven days. Fields sampled in central Kansas yield all stages of larval development (see photo). Actual percentages were: 20% 1st instar; 50% 2nd instar; and 30% 3rd instar. Some prepupae were found in webbing and 2 adults were also collected. Thus, the majority of the feeding / damage will be evident in the next 7 – 14 days depending upon the weather. If treatment is still warranted please make sure to adhere to the insecticide label regarding the pre-harvest interval.



Jeff Whitworth

Holly Davis

Hessian fly

Dr. Gary Cramer, Sedgwick Co. Extension Agent, is utilizing pheromone traps to determine spring Hessian fly adult activity. He has been collecting adults from at least two locations for the past several days. This means the flies are active in south central Kansas, laying eggs and therefore the larvae (maggots) will (have) start hatching and feeding on the wheat. There are no rescue treatments for infested fields but producers that have had past problems with Hessian flies need to examine fields after 2-3 weeks for potential losses due to this wheat pest.

Jeff Whitworth

Holly Davis

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Ants in CRP

A recently burned CRP field in north central Kansas exposed significant colonies of ants. This is not unusual except for the size and number of mounds (see photo). These ants were identified as the Larger Yellow Ant, *Acanthomyops interjectus*. The ants are not an agricultural pest of crops but they can be a nuisance to area residents. The unusual characteristic of these ants is their odor. If crushed they have a lemony odor and therefore are often called "citronella ants".



Jeff Whitworth

Holly Davis



Recent Radio Program -- April 23, 2009 K-State crop entomologist Jeff Whitworth has his latest scouting report on insect activity in Kansas alfalfa, with updated advice on controlling pea aphids and alfalfa weevils. – MP3 – file available at:

<http://www.oznet.ksu.edu/radio/agtoday.htm>

AGRICULTURE TODAY is a daily program hosted by Eric Atkinson and distributed to radio stations throughout the state.

Phil Sloderbeck

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Weekly Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostician Laboratory from April 17th to April 23rd.

April 20 2009 – Leavenworth County – Praying mantid egg cases in shrubs

April 20 2009 – Republic County – Larger yellow ants in field

April 21 2009 – Harvey County – Possible Oriental cockroaches in basement

April 21 2009 – Republic County – Multicolored Asian lady beetle larvae and pupae on greenhouse tomatoes

April 23 2009 – Riley County – Winged termites in home

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

Holly Davis

Sincerely,

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