Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel

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Be On The Look-Out For Spruce Spider Mite

Due to the somewhat "cool weather" we have experienced it is time to be cognizant 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, which are used to remove plant fluids from the chlorophyll (green pigment), resulting in injured foliage appearing bronze or brown.

Spruce spider mite adults are oval-shaped and approximately 1/60th inch in length. 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. Eggs are typically laid underneath bud scales or in the axils of needles from September through November. The eggs hatch into nymphs during spring.

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. 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 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 primary means of managing spruce spider mites is to implement proper irrigation, fertility, and mulching practices, which avoids stressing susceptible host plants. This will avoid having to deal with excessive populations of spruce spider mite. There are a number of pesticides with miticidal properties that may be used to suppress spruce spider mite populations including abamectin (Avid), bifenthrin (Talstar), fenbutatin-oxide, potassium salts of fatty acids (insecticidal soap), petroleum oil (horticultural or summer oil), clarified hydrophobic extract of neem oil, and hexythiazox (Hexygon). All these pesticides have contact activity only—so thorough coverage of all plant parts is important 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 should be noted that feeding injury from spruce spider mite may appear during the summer; however, at this time of year it is too late to substantially impact spruce spider mite populations with pesticides. Applications will have to be conducted in late fall.

It is important to understand that improper use of any of above-mentioned pesticides may result in outbreaks of spruce spider mite populations because most of these materials are directly harmful to the natural enemies (e.g., predators) of spruce spider mites. If feasible, applying a "forceful 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 “forceful water spray” applications may negate having to apply pesticides. Furthermore, this strategy may lessen any harmful effects 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.

Voles

There have been a number of inquiries regarding voles, which is likely associated with the prairie vole (*Microtus ochrogaster*), the common species in Kansas. Voles are often referred to as ‘meadow’ or ‘field mice.’ Voles are short-tailed rodents, 4 to 8 inches long (including the tail), with blunt noses, and are gray-brown in color. Voles commonly inhabit shallow burrows in the soil where they nest and from which they forage. Voles are very prolific breeders with a high reproductive capacity with two voles multiplying into 100 voles within a single year. They breed in the spring and summer with females typically producing up to five litters per year with some females possibly having up to 12 litters per year; however, this will vary depending on food quantity and environmental conditions.

Voles typically reside in areas with dense vegetation or mulch inside shallow burrows. They are primarily active during the evening although they may be observed during the day time. Well-defined tunnels or surface runways created by vole activity are 3/4 inch to 2.0 inches in width. Voles travel extensively through these extensive runways during the day and night. They are active throughout the year and move under snow cover during the winter. Voles feed on a variety of sources including seeds, grasses, plant roots, bulbs, hostas, live bark, tree roots, fruit and insects. Voles will also burrow into root systems thus potentially killing trees and shrubs. In addition, voles may damage certain plants when the dense vegetation cover is removed by feeding on roots and bark thus girdling plants. This type of feeding activity usually occurs during fall through winter. Finally, the surface runways created by voles may result in aesthetic damage to lawns.

Vole management involves habitat modification, cultural practices, and the use of baited traps. Habitat modification or cultural practices such as removing weeds, low growing dense vegetation will eliminate covering and expose voles to predators such as birds, large animals, and weather. Mowing frequently around

trees and shrubs will also reduce potential vole damage. In addition, avoid using fine or small sized mulches because this may serve as a protective cover for voles. It has been reported that plastic and landscape fabric barriers may increase vole populations because these provide a suitable habitat for nesting and breeding.

Tree guards made of 1/4-inch galvanized hardware cloth or mesh may be an option in preventing voles from girdling trees and shrubs. The guard must be buried at least 3.0 inches below the soil surface, which will prevent voles from tunneling under the guard; however, since pine voles girdle tree roots this may not be effective against this vole species. It is important to make sure that tree guards are placed to allow for future plant growth.

Baited traps may be used to deal with voles. Snap-back mouse traps may be effective if they are baited with apple slices and/or peanut butter in order to lure voles to the traps. Traps should be placed along the surface runways with one on each side of the runway (back-to-back) so that voles can be trapped regardless in which direction they are coming from. Traps can be reset in the same location.

Poisons (toxicants) used for other rodents such as rats and gophers may be used to deal with voles including anticoagulants. However, rodenticides used for vole control are restricted-use pesticides and must be applied by a licensed pest management professional or applicator. As such, for homeowners, the most appropriate management strategy includes implementing habitat modification and cultural practices, and using baited traps.

Raymond Cloyd

Alfalfa Weevil Update

Alfalfa weevil larval feeding has dramatically decreased in the past two weeks in Central Kansas. There are still a few larvae, but most have pupated and adults have dispersed. Results of efficacy trials conducted in 2010 and again this year have really emphasized the importance of application timing for larval control. In many instances one application was sufficient to reduce populations enough to swath a little early instead of applying a second application. Insecticides applied earlier than mid-April however, probably required two applications for acceptable control. One consideration for growers next year is how many larvae should remain until swathing? One treatment this year did an acceptable job, in my opinion, but there were still live larvae (though populations were drastically reduced) at swathing. When the alfalfa was swathed all remaining larvae and pupae were accumulated in the windrows, which greatly increased the weevil density in these limited areas and provided shelter. Both larvae, prior to pupation, and adults then, were able to feed in these strips for a few days until the hay was removed. This has created many fields with the characteristic striping (see photo) showing the recovering alfalfa which was between the windrows vs. the yellow, retarded growth under the windrows.

Remember to monitor for aphids, especially if good, consistent growing conditions don't return. Beneficial insect populations were decimated by weevil treatments. Aphid populations, primarily pea, spotted, and cowpea, rebound much quicker than lady beetles, etc., and if alfalfa is stressed by unfavorable growing conditions, the aphid feeding will only increase that stress leading to even slower regrowth.

NOTE: Please contact Holly or me if you find alfalfa weevil larvae from late June through August. We are trying to determine if we have Egyptian alfalfa weevil infestations in Kansas.

Jeff Whitworth *Holly Davis*

Brown Dog Ticks

The Insect Diagnostic Lab has received several samples of female brown dog tick nymphs this past week (see photo). These small (1/16th inch long) ticks are being found crawling around on dogs and people. The brown dog tick has four life stages, the egg, larva, nymph, and adult and will feed between each stage. These nymphs are commonly picked up in tall grasses and areas with heavy vegetation. The ticks crawl onto plants and wait for a host to brush against it, and then they climb onto the passerby. While brown dog tick infestations in dog kennels have been associated with canine ehrlichiosis outbreaks, these ticks do not transmit any diseases to humans.

Kansas State Universities Insect Diagnostic lab provides free identification of ticks. Samples should be preserved in vinegar and taken to your local County Extension Office. Samples can also be sent directly to the lab. For more information on how to send a sample, e-mail GotBugs@ksu.edu.

For more information on ticks in Kansas, please visit:

http://www.vet.ksu.edu/DEPTS/VMTH/PDF/mf2653.pdf

Holly Davis

The Unkind Cut ----- Cutworms

On a recent visit to the Manhattan Community Gardens, I asked one of the "garden participants", "How goes the gardening?" He commented that he had to replace a couple of his tomato transplants because they had been cut off at the ground. And one of the replants was also cut off forcing him to replant a third time. But while he was replanting, he found a "big worm" which he killed. So obviously his nemesis was a cutworm.

Much could be written about cutworms. But in short, they are the larvae of various species of noctuid moths. Generally speaking, cutworms which are found in spring gardens actually began/hatched the previous fall. Having overwintered as small partially grown larvae, they resumed feeding activities with the return of warmer (yet cool) late winter/early springtime temperatures, presumably subsisting on "weedy" plants. When garden transplants are set in the ground, they are an attractive alternative food source to roaming cutworms which (of sufficient size) account for "cut" plants.

Because cutworms "hide" during the day and actively feed at night, their presence first becomes known when (upon checking gardens in the morning/afternoon), "cut plants" (from the previous evening's foraging) are found lying on the soil surface (Figure 1A).

Upon close examination of the plant, the point-of-attack (cut) is readily evident (Figure 1B).

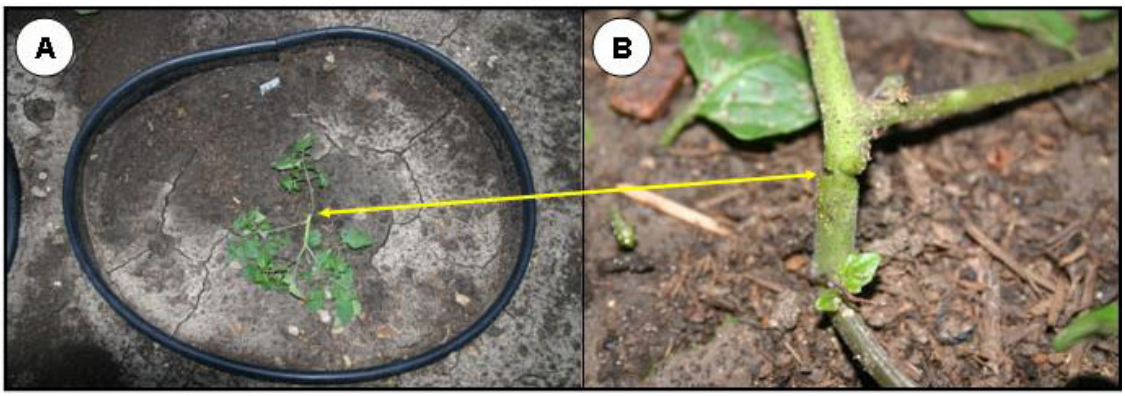

Figure 1

To find the offending cutworm, one should closely examine the ground surface adjacent to the cut plant. Locate the hole/tunnel entrance created where the cutworm burrowed into the soil (Figure 2A – yellow arrow). Preferably using a knife or other pointed instrument, carefully excavate and follow the tunnel's path. At the end of the tunnel, the offending cutworm will be found (Figure 2B).

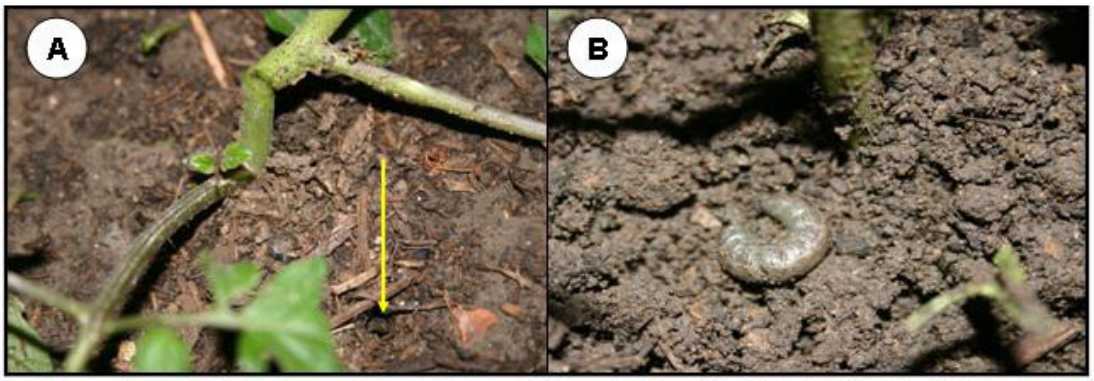

Figure 2

Usually the cutworms will be quickly unearthed near tunnel entrances. However, in this particular instance, the hunt to uncover the cutworm was not quite as simple. Just beyond the entrance, the tunnel immediately angled off. The cutworm's final resting place was 5-inches deep and on the opposite side of the plant (Figure 3).

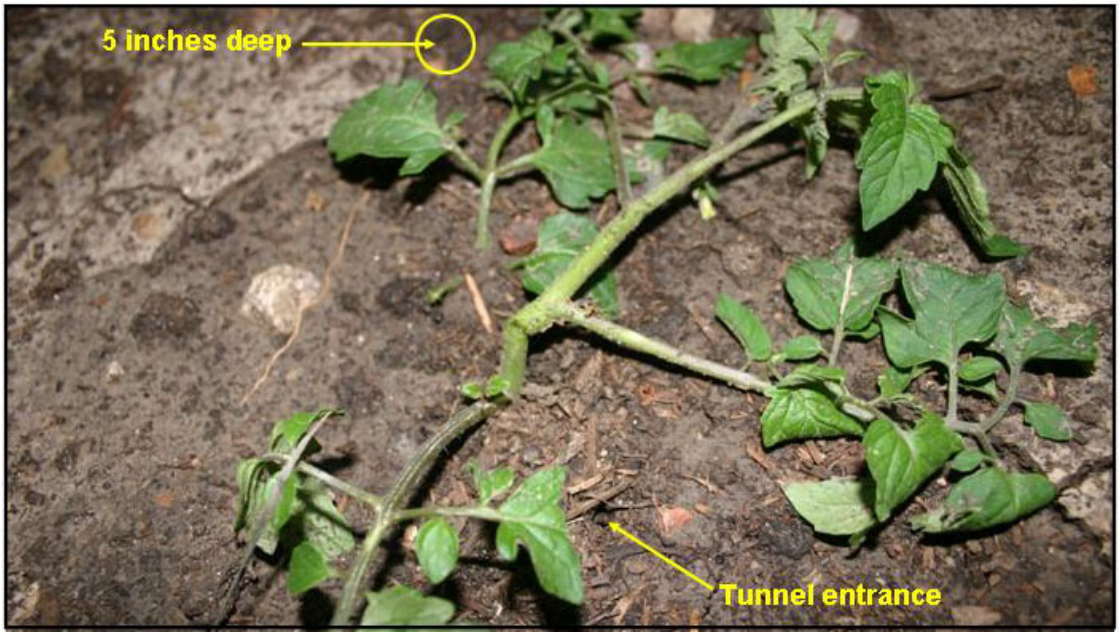

Figure 3

While most garden insecticide products list cutworms on their labels, their use (generally) is unnecessary. Several cut plants may suggest the presence of several cutworms (and that may be the situation). Employing the aforementioned "hunt-and-collect" technique should be sufficient to eliminate offending cutworms from small garden plots. In large scale plantings, the loss of a few plants may be tolerable. But if (in the estimation

of a grower) the number of cut plants is unacceptable, an insecticide application might be the practical control tactic.

Bob Bauernfeind

Sincerely,

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