

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel



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June 1, 2012 No. 12

Genista Caterpillar

If you are growing *Baptisia* spp., in the garden you should be aware of the genista caterpillar (*Uresiphita reversalis*), which can absolutely devastate this plant. I have observed several cases in both Missouri and Kansas of genista caterpillars feeding on this plant, and causing significant damage. About five years ago, there was a major infestation of genista caterpillars at the John C. Pair Horticulture Center (Haysville, KS). It was absolutely beautiful...entomologically speaking.

Adult moths are 1/2 inches in length, triangle-shaped, and light brown in color with a yellow hind wing that contains a brown apex. Female moths lay cream-colored eggs in clusters on leaf undersides. Eggs hatch into caterpillars that are light-orange in color with black and white hairs. They are approximately 1.0 inches long when mature and are light-green in color with white hairs protruding from darkened spots on the body. Damaged leaves appear black or scorched, and oftentimes you will see fecal deposits ("caterpillar poop") mixed in with webbing on plants that are being fed upon. Caterpillars eventually pupate into white cocoons, which may be attached to buildings or vegetation. There is minimal information available on the behavior and biology of genista caterpillar, and outbreaks are very sporadic, which is likely associated with the abundance of host plants present. There may be two generations per year.

Management involves applying forceful water sprays or hand-picking caterpillars and then dropping them into a container of soapy water. *Bacillus thuringiensis* subsp. *kurstaki* (Dipel), spinosad (Conserve), pyrethrin, or any pyrethroid-based insecticide including bifenthrin, permethrin, or lambda-cyhalothrin may be effective in suppressing populations of genista caterpillar. However, applications must be made early before substantial plant damage has occurred and when caterpillars are small, especially if using Dipel.

Kansas Insect Newsletter

June 1, 2012 No. 12



Raymond Cloyd

Twospotted Spider Mite on Roses

The twospotted spider mite (*Tetranychus urticae*) is one of the most destructive arthropod pests of roses; particularly from mid-spring through late fall. Twospotted spider mite is a problem on roses for a number of reasons including 1) their small size makes them difficult to detect; 2) they tend to be located on leaf undersides, which also makes it hard to see them; 3) they have a rapid life cycle (egg to adult), which can lead

Kansas Insect Newsletter

June 1, 2012 No. 12

to outbreaks occurring frequently; and 4) populations may become resistant to commonly used pest control materials (miticides).

Twospotted spider mites are usually a problem on roses when the ambient air temperature is warm and dry, which favors mite development and reproduction. Twospotted spider mite populations are located on the older leaves of roses and feed on leaf undersides within plant cells (palisade and spongy mesophyll cells) removing chlorophyll (green pigment) with their stylet-like mouthparts. They primarily feed near the midrib and plant veins, which generally contain the highest concentrations of amino acids (food source), resulting in damaged leaves appearing “stippled” with small silvery-gray to yellow speckles. Heavily-infested leaves may appear bronzed, turn brown, and fall off rose plants. In addition, mites may create webbing, which provides protection from natural enemies and allows mites to move among plants; especially when roses are spaced close together and leaves are in contact with each other. They may also be moved around via wind currents.

Twospotted spider mites are about 1/16-inches long and oval-shaped. They vary in color from green-yellow to red-orange. Adults have two dark spots (or markings) on both sides of the abdomen. Female adults live about 30 days and can lay up to 200 small, spherical, transparent eggs on leaf undersides. However, females do not have to mate to reproduce. Eggs hatch into six-legged larvae that transition into two eight-legged nymphal stages (referred to as the protonymph and deutonymph) before reaching adulthood. The life cycle from egg to adult takes one to two weeks; however, this is dependent on temperature. For example, the life cycle from egg to adult takes 14 days at 70°F and 7 days at 85°F.

The management of twospotted spider populations on roses involves implementing a combination of cultural practices and the use of pest control materials with miticidal activity. First, avoid over-fertilizing roses, especially with soluble forms of nitrogen, because this leads to the production of soft, succulent tissue that is easier for mites to penetrate with their mouthparts. Second, remove “old” plant material, which may serve as an inoculum source for twospotted spider mite populations. Third, avoid water-stressing roses as this increases susceptibility to twospotted spider mites. Fourth, remove weeds as certain weed species including those in the nightshade family and creeping woodsorrel (*Oxalis corniculata*), which may serve as hosts for twospotted spider mite populations. In addition, mites may overwinter on any weed debris.

Another strategy that may be effective in quickly reducing populations of twospotted spider mites is applying a forceful water spray to roses (targeting the underside of leaves) at least twice per week. This not only dislodges all the mite life stages including eggs but also preserves natural enemies. In addition, the mites will not return to feed on your roses. Be sure to conduct forceful water sprays in the morning so the foliage has time to dry before evening, which will avoid problems with the fungal disease, black spot (*Diplocarpon rosae*).

Scouting or checking your roses regularly is critical in avoiding/reducing the potential of having to deal with outbreak populations of twospotted spider mites during the growing season. One method is to simply look underneath leaves or shake branches over a white sheet of paper. If there are mites present, they will fall onto the paper and start moving around.

Kansas Insect Newsletter

June 1, 2012 No. 12

There are a number of pest control materials commercially available for regulating populations of twospotted spider mite on roses. These have either contact or translaminar properties. When using contact miticides it is important to get the spray to the leaf undersides. Contact materials include bifenthrin (Floramite), hexythiazox (Hexygon), fenpyroximate (Akari), acequinocyl (Shuttle), fenbutatin-oxide (hexakis), insecticidal soap, and horticultural oil. Be careful when using insecticidal soaps (potassium salts of fatty acids) or horticultural oils (petroleum-based) against twospotted spider mites on roses because frequent applications may harm plants. Translaminar means that the active ingredient penetrates the leaf surface and resides or forms a reservoir of active ingredient within the leaf tissues; killing mites that feed on leaf undersides. Pest control materials with miticidal activity that have translaminar properties are abamectin (Avid), spiromesifen (Forbid), and etoxazole (TetraSan).

Always be sure to read the label to determine which mite life stages a product works best on. Also, never apply any pest control material (insecticide, miticide, or fungicide) when the air temperature is greater than 85°F as this may result in plant injury. As for all insect and mite pests that attack roses, it is important to use a combination of different management strategies as opposed to relying only on one such as pest control materials in order to effectively deal with twospotted spider mites.



Kansas Insect Newsletter

June 1, 2012 No. 12



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It's raining, but I'm not getting wet!????

Picture this. You are taking a leisurely stroll through a wooded area. You hear your footsteps crushing the trail litter. You feel the shrubbery/vegetation brush against you on either side of the path. You pause to rest. You close your eyes. And then? You hear and feel rain drops. Yet, you aren't getting wet. Why? Because the "rain shower" is a "poop shower"! (And I know that you are thinking, "There goes that guy writing about poop again).

The situation in this instance has to do with current reports from (at least) the Tonganoxie and Lawrence areas which are experiencing a flurry of activity attributed to hackberry emperor butterflies. After viewing the image posted in the LJ World, the "offending" butterflies were of **Hackberry butterflies**, [*Asterocampa celtis* (Boisduval & Leconte)] (Figure 1). Potato/poetaatoo, tomato/toemaahto, hackberry emperor butterfly/hackberry butterfly ---- one in the same.

Kansas Insect Newsletter

June 1, 2012 No. 12



Figure 1

Outbreaks of various butterfly and moth species are sporadic and unpredictable occurrences. It is not until the larvae of the “offending” species near the completion of their feeding cycle that they ravenously consume any available food/foliage in order to satisfy their nutritional requirements. And in these instances, food in the front end equals excrement/frass/poop out the tail end. Thankfully the fecal pellets are quite dry and odorless, and therefore innocuous.

While hackberry butterflies and their larvae are present every year (and may go unnoticed), “outbreaks” are cause for the aforementioned current concern. Exact reasons to explain outbreaks are elusive/unknown. An often-cited reason offered to explain outbreaks is the mildness/severity of the previous winter. This may breakdown, however, if one looks at the relatively limited geographical area (for instance) experiencing the current spate of hackberry butterflies and their larvae, against the recent mild winter experienced by the entire state ----- which begs the question, “Why here and not there?”

Definitive work done by C. V. Riley in Missouri (1874) documented that hackberry butterflies produced 2 generations per year, with the larvae emerging from the eggs of second generation moths being the overwintering form. Based on this, there would be little reason not to suspect the same 2 generations in Kansas (although I am unaware of any such documentation). Possibly then, given our mild 2011-2012 winter, there would have been a greater percentage of surviving larvae to account for the current situation (although outbreaks are not on record in other seasons following even more mild winters than that which we just

Kansas Insect Newsletter

June 1, 2012 No. 12

experienced). But again as just previously asked, why just in a restricted geographic area as opposed to more reports throughout a greater portion of the state?

So what is the commotion about regarding hackberry caterpillar butterflies? It is the butterflies themselves as well as the impact of larval activities. The presence of the larvae precedes that of the butterflies. The head of the larva has an interesting look: a horned appearance (Figure 2).



Figure 2

In the absence of people, hackberry caterpillars go about their business without causing concern. However when people decide to “invade” the domain of hackberry caterpillars, two situations occur. If (for instance) picnicking beneath hackberry trees in which caterpillars are feeding, the rain-of-frass (Figure 3) can be unappetizing.



Figure 3

Kansas Insect Newsletter

June 1, 2012 No. 12

After caterpillars have completed their feeding up in the canopy of hackberry trees, they descend (Figure 4A) to the ground in search of a site in which they will pupate (Figure 4B). This stream of caterpillars (again in the presence of people) may be disconcerting.

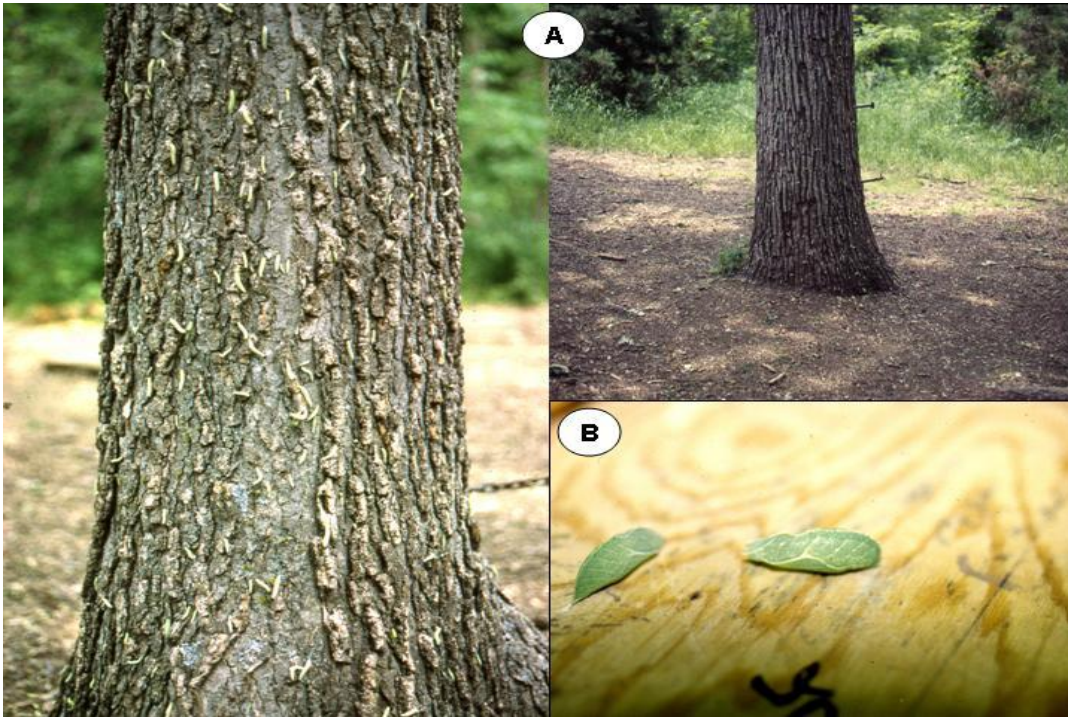


Figure 4

Tremendous numbers of larvae translate into eventual tremendous numbers of butterflies. Thus the “nuisance factor” continues with upon completion of pupation and the emergence of the “new” butterflies (refer back to the second paragraph). Picture yourself walking down a woodland pathway and confronting uncountable numbers of hackberry butterflies (Figure 5). The “nuisance factor” is related to the habit of male hackberry butterflies to unexpectedly dart out from their resting places as people walk by. Not that they will harm a person in any way ---- just the startle factor and the perception that one thinks or feels that he/she is being attacked.

Kansas Insect Newsletter

June 1, 2012 No. 12



Figure 5

Park a vehicle in a wooded area? Hopefully the windows were closed (Figure 6).



Figure 6

Kansas Insect Newsletter

June 1, 2012 No. 12

And the fate of the defoliated hackberry trees? Back in 1998, the defoliation was clearly evident against the skyline (Figure 7). I never thought of taking an “after shot”. And currently that is not possible as this particular location (on Ft. Riley) is now “off limits”.



Figure 7

However, trees at Rock Springs were also defoliated in 1998 (Figure 8).

Kansas Insect Newsletter

June 1, 2012 No. 12



Figure 8

I will be back at Rock Springs next week and will revisit the site. I am sure that now, 14 years later, those trees will be “tall-and-true” ---- and I will have my “after picture” ---- of course, too late for this issue of the Kansas Insect Newsletter.

Bob Bauernfeind

Sincerely,

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