

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel



Department of Entomology
123 West Waters Hall
K-State Research and Extension
Manhattan, Kansas 66506
785-532-5891
<http://www.entomology.ksu.edu/extension>

June 20, 2008 No. 11

Twospotted Spider Mite

The warm weather we have been experiencing throughout the state means it is time to be cognizant of the potential damage caused by the twospotted spider mite, *Tetranychus urticae*. Twospotted spider mite is considered a warm-weather mite since it is mainly active from late spring through early fall. Summer temperatures allow twospotted spider mites to reproduce faster so that they overwhelm natural enemy populations, which under moderate temperatures are able to control them.

Twospotted spider mite has a very broad host range feeding on a wide range of trees and shrubs including ash, azalea, black locust, elm, euonymus, maple, oak, poplar, redbud, and rose. Twospotted spider mite also feeds on many herbaceous annuals and perennials such as marigold, pansy, aquilegia, buddleia, clematis, daylily, delphinium, phlox, rudbeckia, salvia, Shasta daisy, and verbena.

Adults are oval and approximately 1/16-inch long. They vary in color from green-yellow to red-orange. The adults possess two lateral dark spots that are visible when the spider mite is viewed from above. Both adults and nymphs may be found on all plant parts; however, they are often more numerous on older leaves. Twospotted spider mites produce a fine silk, which may be seen between leaves, and the petiole and stem. The webbing produced by twospotted spider mites protects them from predators. Heavy rainfall will disrupt and remove this webbing.

Twospotted spider mites use their stylet-like mouthparts to feed on leaf undersides, within cells, damaging the spongy mesophyll, palisade parenchyma, and chloroplasts, thus reducing chlorophyll and moisture content and the plant's ability to photosynthesize. This leads to the expression of characteristic symptoms such as leaf bleaching, yellow stippling and bronzing of leaves that eventually fall off. Even "low" populations may cause stippling on mature leaves. Extensive populations may cause leaf yellowing, and distortion of terminal buds and flowers. Twospotted spider mites typically feed near the leaf midrib and veins because this is where the highest concentrations of amino acids are located.

The warm and dry conditions of summer favor rapid development of twospotted spider mites, in addition to increased feeding and reproduction. The life cycle from egg to adult occurs within 5 days at 80°F. Twospotted spider mite females don't have to mate to reproduce (=parthenogenesis) laying up to 300 eggs during their 2 to 4 week lifespan. Twospotted spider mites spend the winter as adults in protected places including weeds, leaf litter, and debris, which mean that applications of dormant oil during winter will not be effective against this spider mite species.

Twospotted spider mite management involves sustaining plant health, implementing sanitation practices, and/or using pest control materials (miticides). Avoid exposing plants to any "stress" through proper watering, fertility, and mulching—as this will at least reduce any potential problems with twospotted spider mites. For

Kansas Insect Newsletter

June 20, 2008 No. 11

example, inadequate moisture or overfertilizing plants, particularly with nitrogen-based fertilizers, may result in the development of excessive spider mite populations. It is always recommended to monitor for twospotted spider mites by knocking the spider mites off plant parts such as branches, onto a white sheet of paper. This will allow you to observe the spider mites more easily. Plant-feeding or phytophagous spider mites typically leave a green streak when crushed, whereas predatory mites leave a red streak. A very effective and rapid method of dealing with twospotted spider mites is to apply a hard water spray, which dislodges eggs and any live spider mites. This will also preserve any natural enemies. The removal of plant debris and weeds will eliminate overwintering sites. Additionally, many broadleaf and grassy weeds are hosts for twospotted spider mites.

Pest control materials, in this case insecticides/miticides, recommended for controlling twospotted spider mites in outdoor environments include abamectin (Avid), bifenthrin (Talstar), etoxazole (TetraSan), hexythiazox (Hexygon), acequinocyl (Shuttle), spiromesifen (Forbid), insecticidal soap, and horticultural (=summer) oil. Be sure to make applications before twospotted spider mite populations are “high” and causing aesthetic injury. Many pest control materials used to control other insects such as plant-feeding beetles and caterpillars may be harmful to the natural enemies of twospotted spider mite, thus leading to an inadvertent increase in twospotted spider mite populations.



Raymond A. Cloyd

Bean Leaf Beetle on Soybean

Bean leaf beetles have been actively feeding on seedling soybeans for the past few weeks. These are the adults of the overwintering generation and their feeding activity should start to diminish in the next 7-10 days. These adults will be the springboard of the next generation. Larvae will feed on soybean roots and nodes for 2-4 weeks, pupate, and then emerge as adults, usually in mid-July. Insecticide seed treatments seem to be effective in protecting germinating plants, so if planting (or replanting) this is an option to consider that will protect these plants for 21-28 days post planting. Bean leaf beetle adults (see photos) have two color phases, a red and a tan background with 6 distinct black spots bordered in black. These are very wary insects and usually drop to the ground when approached. Leaf feeding causes round or oval holes but requires considerable feeding before foliar treatment is justified. Early season treatment thresholds are 7 or more beetles per row foot and 25% defoliation on plants with four nodes or less. For additional soybean insect management information please go to:

<http://www.entomology.ksu.edu/DesktopDefault.aspx?tabindex=183&tabid=403>



Jeff Whitworth

Holly Davis

Fall Armyworm

Pheromone traps in Hays have caught large numbers of fall armyworm over the past week. This pest migrates into Kansas every summer from more southern regions, but does not overwinter here. It is rather early to see so many moths this far north, and their numbers may indicate that more are yet to arrive. Crops to watch for damage include corn, sorghum and alfalfa. Plants in early growth stages will be particularly vulnerable. Feeding damage on corn and sorghum appears as irregular perforations in the foliage that become evident as the leaves emerge from the whorl. Fortunately, plants can tolerate a lot of this kind of damage before yield is impacted. Do not consider treatment unless 75% of plants show fresh damage AND there are one or two live larvae per plant. Seedling alfalfa is more at risk from early season infestation and should be treated if there are between one and two larvae per square foot. Management options for corn can be found at: <http://www.entomology.ksu.edu/DesktopDefault.aspx?tabindex=245&tabid=593> for corn; <http://www.entomology.ksu.edu/DesktopDefault.aspx?tabindex=297&tabid=542> for sorghum and <http://www.entomology.ksu.edu/DesktopDefault.aspx?tabindex=189&tabid=518> for alfalfa.



Fig. 1. Larvae vary in color from pale tan to very dark green (photo from Bastiaan (Bart) Drees).



Fig. 2. Close-up of distinctive markings on head of FAW larva (photo from Kelly Cook, University of Illinois).

Kansas Insect Newsletter

June 20, 2008 No. 11



Fig. 3. Adult FAW moth (Bob Patterson).



Fig. 4 FAW larvae feeding on corn (Beverly Sparks, UG).

Phil Sloderbeck and J.P. Michaud

Weekly Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostician Laboratory from June 12th to June 19th.

- June 12 2008: Shawnee County – Lone star tick – male
- June 12 2008: Leavenworth County – Hemipteran nymphs – possibly wheel bugs in tree
- June 16 2008: Marion County – Chrysomelid larvae on crown vetch
- June 17 2008: Riley County – Lone star tick – engorged female
- June 18 2008: Logan County – Pillbugs and centipedes found under bark of Austree
- June 18 2008: Douglas County – Winged ants found inside home
- June 19 2008: Pratt County – Twospotted spider mites on roses and butterfly bush
- June 19 2008: Riley County – Cabbage looper on dill plant

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

Kansas Insect Newsletter

June 20, 2008 No. 11

Sincerely,

Raymond A. Cloyd
Extension Specialist
Ornamental Entomology/Integrated Pest Management
Phone: 785-532-4750
Fax: 785-532-6232
e-mail: rcloyd@ksu.edu

Holly Davis
Insect Diagnostician
Phone: (785) 532-4739
e-mail: holly3@ksu.edu

J. P. Michaud
Integrated Pest Management - Entomology
Agricultural Research Center - Hays, KS
Phone: (785) 625-3425
e-mail: jpmi@ksu.edu

Phil Sloderbeck
Extension Specialist- Entomology
Southwest Research and Extension Center
Garden City, KS
Phone: 620/275-9164
e-mail: psloderb@ksu.edu

Jeff Whitworth
Extension Specialist
Field Crops
phone: 785/532-5656
e-mail: jwhitwor@ksu.edu



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