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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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August 3, 2007 No. 23

Fall Armyworms and Corn Leaf Aphids on Sorghum

I have received several samples of whorl stage sorghum with fall armyworm and corn leaf aphids. The fall armyworm, *Spodoptera frugiperda*, does not overwinter in Kansas but migrates from more southern latitudes to attack various vegetables and summer field crops at this time of the year. The larva are easily recognizable by their distinctive head capsule (Fig. 1). Later planted sorghum is especially at risk if plants are attacked while still small. Damaged plants have ragged leaves with large holes chewed through them (Fig. 2). Treatment of fall armyworm is usually unjustified at the whorl stage as larvae are protected within the plant and the growing foliage can compensate for substantial damage. However, an average of one or more larvae per panicle during heading (Fig. 3) warrrants treatment.

Larva are easily recognizable by their distinctive head capsule

Damaged plants have ragged leaves with large holes chewed through them.

An average of one or more larvae per panicle during heading warrants treatment.

Corn leaf aphids, *Rhopalosiphum maidis*, can almost be considered a beneficial insect in grain sorghum production. Although large colonies may develop within the whorl (Fig. 4), they have little impact on plant productivity and typically disappear as the foliage matures and the panicle emerges. They attract a wide range of aphid natural enemies that are typically able to complete a generation on the corn leaf aphids. This complex of ladybeetles, syrphid flies, and lacewings then emerge right around the time greenbug colonies (Fig. 5) are being initiated on lower leaves within the sorghum canopy. This

timing is ideal for these beneficial species to prevent establishment of greenbug colonies that are potentially far more damaging to sorghum. It is important that growers recognize the difference between these aphids and not mistake one for the other. Greenbug colonies DO NOT form in the whorl and corn leaf aphids DO NOT colonize the under sides of mature leaves or cause brown spots to develop.

Colonies may develop within the whorl

Greenbug colonies are being initiated on lower leaves

J.P. Michaud

Fall webworms in the summer? .....

Despite their name, in Kansas, fall webworm activities actually begin in spring. Generally speaking, moths of the first generations of the blackheaded race and redheaded race emerge from overwintered pupae in mid-May and mid-June, respectively.

Silken cocoons in ground litter

Abdominal "hairs" conceal egg mass--Fall webworm moth

Exposed eggs

Newly emerged larvae--- Synchronous egg hatch

Blackheaded race--note black head capsules

Redheaded race--note reddish/orangish head capsules

The common name “fall webworm” has more to do with when web masses become most prominent/numerous in the fall, attributable to greater numbers of first generation moths producing egg masses leading to higher populations of second generation larvae.

Very seldom are web masses detected in their early stages of construction. **Currently,** web masses are noticeable in many trees, especially walnut, pecan, sweet gum and flowering crab. And this is as it should be given that the more common red-headed race – showing preference for the aforementioned tree species – began 4-6 weeks ago. (As a side note, less frequently observed and reported smaller and more flimsy web masses in ash, elm, mulberry and Osage-orange are more likely to be those of the blackheaded fall webworm race).

While fall webworms do not pose a threat to the overall health and vigor of established trees, their web masses are often considered aesthetically unacceptable. If webs are considered objectionable, and if they are within arm's reach, simply use your fingers as a hand rake with which to remove the web mass. The dead leaves and fall webworms will be contained within the webbing which can be disposed of. If people have an aversion to touching the web mass, a bristly toilet brush, or pole with a nail driven through one end are suggested as tools-to-twirl-and-remove web masses. While the branch may have a bare appearance, the axillary buds are alive/viable - they will produce next year's foliage restoring the branch's normal appearance. Pruning out web-covered branches is not recommended as a tree's appearance may be compromised.

Web mass

Use fingers as a hand rake

Web ball

Bare branch

If an insecticide is selected to eliminate fall webworms, it is only necessary to treat the foliage immediately adjacent to a current the web mass because that is the foliage which will next be incorporated into/surrounded by an ever-expanding web. Or, thrust the sprayer wand through the protective web mass to deliver the insecticide directly onto the webworms within. In either case, the web mass will remain.

Physically removing and/or applying an insecticide to web masses is dependent on their accessibility. Little can be done if web masses are located in higher portions of

Out-of-reach web masses

tree canopies. However, during the winter and early spring, web masses will deteriorate and disappear. As earlier stated, axillary buds will produce the ensuing season's new foliage and normal tree appearance will be restored.

Determined fall webworm control measures are critical if trees are incapable of absorbing foliar loss due to fall webworm feeding. This requires close monitoring of small trees and the elimination of fall webworms in their early growth stages before they consume a substantial portion of available foliage. In these instances, physically removing small web masses will stop fall webworms in their tracks.

Smaller trees require control of fall webworms

Bob Bauernfeind

The "Other" Flies.

In the Newsletter of two weeks ago I included a discussion of the main flies that affect pastured livestock, namely, stable flies, horn flies, and face flies. Since then, I have received several messages asking for information on the "other" flies, the horse flies and deer flies. Here it is:

The horse flies are large, 5/16 to 1 ¼ inch long, whereas the deer flies are ¼ to 3/8 inch long. They both belong to the family Tabanidae, jointly referred to as tabanids, with 42 species recorded in Kansas. The horse fly species range in color from solid black to diverse shades of gray, brown, and green. The deer flies are brown, black, yellow, or green. Most tabanids have similar life cycle patterns: Eggs are deposited in masses on leaves above the larval habitats which can be semi-aquatic to moist soil in grassland and wooded areas. The larvae are free living, some having predatory habits, others feeding on decaying plant matter; the entire lifecycle lasts one year in some species, and two in others. Adult tabanid activity on any given area is the result of few species prevalent for a few weeks each.

Tabanids posses complex mouthparts used for cutting the host's skin with blade-like structures, then sponging the flowing blood. Their bites are quite painful. During large outbreaks, blood loss can be quite significant. They may cause reduction in milk production and in weight gain. Their feeding habits make them efficient mechanical transmitters of anaplasmosis, equine infectious anemia, tularemia, anthrax.

Tabanids are susceptible to most insecticides used against most flies; however, because of their short visitation time on the host and the relative short life of most formulations, the application of insecticides directly to the animals has not been effective on the long term. Insecticide ear tags have little effect against horse flies. However, in extreme cases of high tabanid populations, spraying the whole body with pyrethroid insecticides (such as permethrin) should give about 5 day control (10 days at best). Permethrin also offers a limited repellent action. Horses can be protected from heavy populations of horse flies by keeping them in screened barns and allowing them to graze at night.

Alberto B. Broce

Diagnostic Report for July 23 – July 31, 2007

The diagnostic lab is reinstating the sample submission updates as part of the Kansas Insect Newsletter. The update lists will include diagnoses made on physical and electronic photo submissions from both the general public and county agents (but will not cover general phone calls and e-mail correspondence).

7/23 – Pottawatomie Co; green June beetle
7/23 – Labette Co; human epidermis believed to be arthropods
7/23 – unknown Co; black swallowtail caterpillar in garden
7/23 – unknown Co; Cecropia moth caterpillar
7/24 – Leavenworth Co; lacebugs on leaves
7/24 – Wabaunsee Co; western corn rootworm beetles
7/26 – Riley Co; cottonwood borer
7/26 – Washington Co; male dobsonfly
7/26 – Pottawatomie Co; lone star tick larvae
7/26 – Haskell Co; human bed bug
7/26 – Barton Co; woolly oak galls (cynipid wasp)
7/27 – Jefferson Co; Japanese longhorned weevils on ornamentals*
7/27 – Pratt Co; Cuterebra bot fly larva from rabbit
7/27 – Crawford Co; sunflower damage, cutworm, corn earworm, tabanid fly larva
7/27 – Thomas Co; stippling on tomatoes, currently undetermined
7/27 – Johnson Co; spruce needleminer damage
7/30 – Gove Co; warehouse beetle
7/30 – unknown Co; Cecropia moth caterpillar
7/31 – Johnson Co; lone star tick nymphs on human (from out-of-state)

Elizabeth Murray, Entomology Diagnostician -- GotBugs@ksu.edu

*Revised 8-06-2007 (Originally reported as twobanded Japanese weevils)

Soybeans:

Soybean aphid populations through the state seems to be static i.e. neither increasing or decreasing. For a good pictorial reference (slide 1, slide 2 and slide 3) relative to soybean aphid sampling, please see the key provided by University of Wisconsin Extension Entomology.

Thanks Jeff and Aqeel

Soybean aphids in various sizes and color

A visual guide to number of Soybean Aphids per leaflet

Would it pay to spray for Soybean Aphids?

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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