http://www.oznet.ksu.edu/entomology/extension/extensio.htm

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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Soybean Aphid Alert:

Reports of soybean aphid have exploded this week with reports coming in from as far east as Johnson County (Missouri border), as far north as Marshall and Nemaha counties (Nebraska border), as far west as Greeley and Wallace Counties (on the Colorado border) and as far south as Meade County in Southwest Kansas (on the Oklahoma border) in all about 29 counties as of Thursday evening. Most reports have been of trace numbers up to a few aphids per plant. However there have been a few reports of higher numbers. One of the first was from Glenn Salsbury who reported 30 to 40 aphids per plant in a field in Meade County on August 20th, which caught our attention since this was higher numbers than what we had heard earlier from eastern Kansas. However this week we have received reports of fields with much higher aphid populations. A small field near Emporia was found to have thousands of aphids per plant and plants were sticky with honeydew and bottom leaves were darkening from sooty mold. We also had a report from a consultant of 500-600 aphids/plant in Nemaha and Jackson counties with a few fields being treated.

The generally accepted action threshold is about 250 aphids per plant if populations are actively increasing. This threshold has reportedly worked well in late vegetative (right at first bloom) to R4 soybeans (full pod). Spraying after R6 (full seed) has not been documented to increase yield, especially if the crop has grown well through the vegetative stages.

Soybean Aphid Management Recommendations for 2004 http://www.planthealth.info/soyaphid/sbamgmt.htm

Reproductive Soybean Development Stages and Soybean Aphid Thresholds http://www.planthealth.info/soyaphid/uwexsoystage.pdf

Insecticides currently labeled for the soybean aphid (or Chinese aphid) include:

Carbofuran (Furadan 4F)
2ee label, apply 0.25 to 0.5 lb. a.i./acre.

Chlorpyrifos (Lorsban 4E, Nufos 4E)
Apply 0.5 to 1.0 lb. a.i./acre.

Cyfluthrin (Baythroid 2)
Is labeled for suppression 0.044 lb. a.i./acre

Esfenvalerate (Asana XL 0.66)
2ee label, apply 0.03 to 0.05 lb. a.i./acre (5.8 to 9.6 fl. oz. of product/acre).

Lambda-cyhalothrin (Warrior with Zeon Technology)
Apply 0.015 to 0.025 lb. a.i./acre (1.92 to 3.20 fl. oz. of product/acre).

Microencapsulated Methyl Parathion (Penncap M)
Apply 0.25 to 0.75 lb. a.i./acre (1 to 3 pt of product/acre).

Permethrin (Pounce3.2 E)
2ee label (Agrisolutions), 0.1 to 0.2 lb. a.i./acre (4 to 8 fl. oz. of product/acre)

Zeta-cypermethrin (Mustang MAX)
Apply 0.0175 to 0.025 lb. a.i./acre (2.8 to 4.0 fl. oz. of product/acre).

Deciding whether to spray or not will not be an easy decision even if aphids exceed the action threshold. We have very little experience with this aphid under Kansas conditions. A lot of beans are rapidly reaching the stage where treatment will not be needed. However, late planted and no-till beans may still be vulnerable for several days. But then there is the question whether some of these late beans are going to mature before we get a freeze. Then there is the question of how well can we control aphids deep in the canopy especially in solid seeded soybeans.

In addition we really don't know how long the aphid populations will remain active. Hot weather is known to slow down aphid development. So most of the time Kansas in August would not be good for soybean aphid development. However the next few days are forecast to be cooler than normal. Aphids can reportedly increase 10 fold in a week under ideal conditions with temperatures around 77 degrees.

Late in the summer, a sexual cycle takes place, producing both male and female winged forms. These aphids migrate back to the woody shrubs where females eventually lay eggs that complete the seasonal cycle. Thus if winged aphids begin to appear populations can decline fairly rapidly.

We will be interested in hearing reports of aphid populations across the state, especially from counties where the aphid has not yet been reported. We are trying to keep an up-to-date map posted on our web site at: http://www.oznet.ksu.edu/entomology/extension/InsectInfo/SoybeanAphid.htm

We will also be interested in hearing reports of any treatments and about how well treatments appear to be working at reducing aphid populations.

One other area that we will be looking at a little more closely especially in southwest Kansas is whether some of the reports of low levels of aphids in some fields might actually be cotton aphids rather than soybean aphids. The cotton aphid reportedly occasionally infests soybeans, and since we have had some reports of light numbers of cotton aphids in the area, there is a possibility that some of the soybean aphid reports in southwest area may be cotton aphids.

Again, note that in most fields aphid numbers are at very low numbers, predator populations appear to be abundant and soybeans are nearing a stage where aphid probably pose little threat. However since we have had a few reports of aphids starting to exceed action thresholds all fields should be checked carefully over the next few days especially fields that are still in the early pod development stages.

More in formation on the basic biology of the soybean aphid can be found at: http://www.oznet.ksu.edu/library/entml2/MF2582.pdf

Soybean Aphids

More Soybean Aphids

Pictures by: R. Higgins ----- Emporia, KS on August 25, 2004

Phil Sloderbeck, Randy Higgins and Jeff Whitworth

Soldier Beetles:

These yellow and black beetles are currently very abundant in blooming sunflower fields and one report of them being abundant in a blooming alfalfa field. Larvae are predators on other insects and adults are attracted to flower nectar or pollen for a food source. They pose no threat to crop production and they may even be beneficial in pollination.

Soldier Beetle

Phil Sloderbeck

Comments on Kermesid Scales:

Scale insects in the taxonomic family Kermesidae are commonly referred to as “gall-like scales” due to the characteristic heavily sclerotized cuticle of post-reproductive females. Accurate identification of kermesid scales is based on cuticular features too small to be observed under a dissecting microscope. Therefore, it is imperative that young females (that have just completed their final molt) be collected and mounted on microscope slides. And then, it would require a scale insect “expert” to make the definitive identification.

Short of precise identification, one can only speculate as to the likely kermesid scale being encountered. Because the pin oak kermes, *Allokermes galliformis* (Riley) reportedly is the most common and widely distributed kermesid, one might “guess” that that is the species currently being encountered in Kansas. (Note of interest: despite its “pin oak” moniker, pin oak kermes is known from at least 40 different species of oak).

Insecticide applications against scale insects are most effective against the crawler stages. This requires a knowledge of the seasonal life history of the scale species in question. Kermesid scales are cited as being the least studied group of scales. However, it is felt that the seasonal life history of the pin oak scale apparently is similar to that of the red oak kermes, *Allokermes kingi* (Cockerell), which was defined for Virginia. In that two-year study, females produced eggs in July. Egg hatch began in September and extended into early November. Crawlers then sought overwintering sites in the cracks and crevices of twigs and branches. It is always risky to apply a sequence-of-events from one region to another, especially when widely separated geographically.

Based on dissecting scope observations of pin oak kermes collected Wednesday, August 25, in Manhattan area, there are differing developmental stages. Some females have yet to produce eggs. Others have recently produced “fresh eggs” — white in color (Figure 1). Eggs in some instances have turned orangish-yellow (Figure 2) indicating that their development is underway. In one instance, crawlers were seen, but they were still contained within the female’s brood chamber. No active crawlers were observed on the collected twigs.

Figure 1

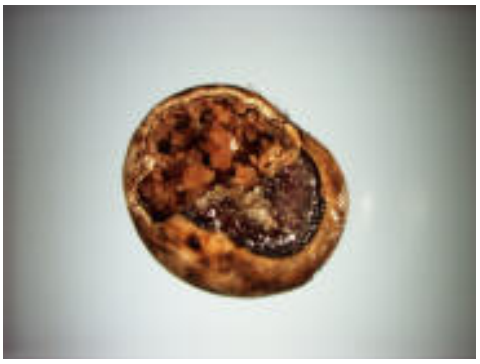

Figure 2

So the response to the question, “Should I begin to spray for pin oak kermes?”, is, “Not yet”?

Another question, “Will one spray application be sufficient?” Given the above described crawler emergence spanning 2 months, it would seem that a couple to several sprays might be required to provide complete control. The number of sprays may be dependent on the residual effectiveness of the individual insecticides for which data against scale crawlers has not been established.

Three additional factors will effect the success of spray treatments. (1) Crawler populations are staggering. Consider that the recorded average number of eggs produced by each female was 2820 (range was from 1390 - 5789). (2) Crawlers are very small — cannot be easily observed with the naked eye. That size works in their favor as the are secreted away in small cracks and crevices, and therefore may escape contact from the insecticide. (3) Large trees and thick foliage complicate treatment coverage, again working in favor of the scale.

Updates on the status of pin oak kermes crawlers will appear in subsequent issues of the Kansas Insect Newsletter.

Bob Bauernfeind

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Sincerely,

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