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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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Soybeans

Soybean aphids have again arrived in Kansas. They were first discovered on 12 July in a soybean rust/soybean aphid sentinel plot in Lyon Co. by Dr. Doug Jardine, KSU Plant Pathology Dept., and Brian Rees, Lyon Co. Agricultural Extension Agent while conducting weekly sampling for these two pests. Subsequently, they were detected in Riley Co. on 17 July. These are the first reports of soybean aphids in Kansas this year and are somewhat earlier then in past years, although approximately the same time frame as in 2005, but populations that year never really became troublesome.

The soybean aphid, *Aphis glycines*, was first detected in the U.S. in 2000 and 1st detected in Kansas in 2002. We have had soybean aphids every year since 2002 but only in 2004 did they become a problem of economic consequences requiring some fields to be treated with insecticides. Only one county had verified soybean aphid populations in 2006. Soybean aphid populations seem to be sensitive to hot temperatures, specifically temperatures over 95 degrees Fahrenheit. Hot summer temperatures may not actually kill the aphids but it does seem to drastically reduce their ability to reproduce. If they are not rapidly reproducing this gives some of their natural enemies, i.e. predators and parasites, the opportunity to help regulate the aphid populations. Aphid populations can increase very quickly because they reproduce parthenogenically. This means they don't have to mate, lay eggs, etc. Each aphid is a female and thus produces females, which produce females, etc. without any lag time looking for mates and waiting for eggs to hatch. They are born and start feeding and producing young immediately.

Soybean aphids are the only aphids in N. America to colonize and develop large numbers on soybeans. They are relatively small, light green aphids with the distinctive black cornicles or "tail pipes" at the tip of the abdomen. Infestations usually start at the outer canopy on the newer leaves. Aphids can be found throughout the canopy but well-established populations will most often be on the undersides of leaves and on stems and developing pods. This aphid can transmit many viral diseases but can also stress plants and reduce yields by virtue of their feeding which removes nutrients from the plant. Infested plants may have a distorted, yellow appearance and may become covered with a

slick, sticky substance called “honeydew” which often becomes dark and sooty due to molds living on the honeydew. Ants seem to be attracted to this honeydew, thus if you see ants in your soybean canopy it may be an indicator of an aphid infestation.

Aphid populations discovered so far are small and widely scattered. However, the soybean crop generally is a little late in development, i.e. on 17 June 38% of the beans statewide were blooming compared to the average of 99% for the same date in previous years. Soybeans in the late vegetative and early reproductive stages are probably the most susceptible to aphid feeding. Economic thresholds for soybean aphids, from states that have had annual problems, is around 50 per plant in pre-reproductive plants and approximately 250 aphids per plant in R1 (beginning bloom) to R4 (full pod). This takes into account a 7-day lead time between scouting and treatment to make arrangements for treating.

To report soybean aphid infestations or for treatment thresholds, sampling and a new technique of “speed scouting”, and insecticides registered for use against soybean aphids, consult your local County Agricultural Extension Agent, or visit the web at http://www.entomology.ksu.edu/DesktopDefault.aspx?tabid=668 .

Jeff Whitworth and Aqeel Ahmad

Summer Flies on Pastured Cattle

Stable flies, horn flies, and face flies are the fly species of major concern on pastures.

- **Stable flies** (SF) which used to be problematic only in confined animal feeding operations such as feedlots, dairies and horse barns, are now the principal pest fly on pastures
- In the spring they develop in the manure-wasted hay mixtures at winter feeding sites of round bales (cattle waste up to 45% of the hay in round bales)
- SF start to colonize these manure-hay media in early spring, maintaining population levels of economic importance for 6 to 8 weeks during May – June
- Their populations crash in July – August due to high temperatures and dry weather; but a second, although smaller peak may also occur in September – October
- SF traps run on pastures near Manhattan, Kans averaged up to 255 flies/trap/day in late May; the same traps are now in mid-July catching just 2 flies/trap/day
- The host’s legs are the SF favorite feeding site; cattle react to the SF painful bites by tail swishing, leg stamping, bunching, remaining in water for extended periods of time, and tucking the legs under their bodies
- SF feed on cattle 1 – 2 times a day and it is estimated they may cause weight gain reduction in the order of 0.25 kg (0.5 lb)/head/day

- There is no effective chemical treatment against SF on pastured or range cattle because any insecticide applied to the legs is readily removed by vegetation and dew
- Their numbers in the spring and summer can be reduced by avoiding the accumulation of manure-wasted hay residues at winter feeding sites by frequent moving the hay feeders or by unrolling the bales on pastures

- **Horn flies** (HF) which develop in undisturbed cow pats, spend most of their adult time on the back of cattle and feed up to 40 times a day, are about half the size of the common house fly
- In Kansas, they are found on cattle from April through October, showing a population peak in April-May and another, often larger, in early fall
- HF larvae that develop in September - October transform into pupae that will not emerge as adults until April, surviving this way the winter
- Upon emerging, overwintering flies may fly up to 10 miles in search of cattle
- By this time of the year, mid-July, populations of HF should still be above economic levels for another 2 months
- The behavior of being constantly on the back of their hosts, makes HF control rather easy with insecticidal tags, sprays, dust bags, pour ons, and backrubbers
- However, the highly effective method of insecticidal tags has led to the widespread development of populations resistant to the insecticides, especially to the pyrethroids
- Herds that have received some insecticidal treatment this season and are currently showing fly numbers above 150 flies/head should be considered for an additional treatment
- But, as indicated in an earlier Newsletter (May 18, 2007 #12 article: To Rotate Or Not To Roate), because of the specter of insecticide resistance, and the problem with cross-resistance (once a population of insects becomes resistant to one chemical, they become resistant to other chemicals in the same chemical group), the insecticide should be rotated by choosing from a different chemical class
- Here is a list of chemical classes of insecticides

Classes of Insecticides

CLASS	COMMON CHEMICAL NAMES
I	**Pyrethroids :** Pyrethrum(-in), Permethrin, Cypermethrin, Cyfluthrin, Fenvalerate/Esfenvalerate, Lambda-Cyhalothrin
II	**Organophosphates :** Tetrachlorvinphos (Ravap & Rabon), Dichlorvos (DDVP), Malathion, Coumaphos, Dioxathion, Phosmet, Diazinon, Primiphos-methyl

(Source: Wes Watson, North Carolina State University)

- **Face flies** (FF) are very similar to house flies, having also sponging mouthparts, but, like horn flies, they develop only in undisturbed cow pats and follow similar population dynamics
- FF serve as mechanical vectors of the bacteria that causes pinkeye in cattle
- In the process of feeding on eye secretions, FF rasp cattle conjuctiva with sharp mouthparts teeth, thus increasing lacrimation
- FF overwinter as diapausing adults in attics of rural homes and barns and are a component of the attic fly complex
- The best control of FF ever achieved has been with pyrethroid ear tags (75%); but the use of this control method is dependent on the presence of resistant HF populations

Alberto Broce

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Sincerely,

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