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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

Department of Entomology
239 West Waters Hall
K-State Research and Extension
Manhattan, KS 66506-4027

Tel: 785-532-5891

Fax: 785-532-6258



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Reference of Interest: Illinois Crop Protection Technology Conference:

A great set of resources for subjects of relevance to those engaged in IPM are the Proceedings developed for the above conference. The meeting is generally held in January of each year at the University of Illinois at Urbana-Champaign and features experts from around the country. Topics that may be of interest in the 2005 issue include: how early is too early to plant; information on insecticidal seed treatments and soil insecticides for corn rootworm control; resistance management issues associated with corn rootworm management; efficacy data associated with YieldGard Rootworm; importance of spray droplet size for ground and aerial applications; delivering on the biotech promise; soybean aphid management update: what to select from a variety of pest management tools; expansion of western bean cutworm through the Midwest; troubleshooting pest management challenges in field crops; and secondary insect management. Downloadable copies of the proceedings (including past-year compilations from the current issue back to 1998) are archived at <http://www.ipm.uiuc.edu/education/proceedings/> If you really want a hardcopy, the most recent release can be purchased for \$10 through instructions posted at <http://cptc.ipm.uiuc.edu/> .

-- Randy Higgins

Soybean Aphid Review – Past Experiences of Nearby States:

The PowerPoint presentations employed at a regional soybean aphid workshop that took place during February, 2004, may be of greater interest to Kansas soybean producers and crop consultants now. At the

time they were first released, several hundred people located in heavily infested states such as Illinois, Iowa, Minnesota, and Wisconsin, listened to or directly participated in the program. Relevance to Kansas has increased because last year we experienced our first economic or near-economic infestations of the soybean aphid in a few localized areas. The downloadable presentations are archived at http://www.ipm.uiuc.edu/fieldcrops/insects/soybean_aphids/workshop/download.html .

-- Randy Higgins

Soybean Aphids, Spider Mites, and White Grubs Across the Border in Missouri:

Wayne Bailey, a colleague at the University of Missouri, just sent me an e-mail stating that migratory soybean aphids had been confirmed in very low numbers on July 6, 2005 within his state. Workers in Missouri had previously located limited soybean aphid infestations on the Iowa-Missouri line, about 60 miles away from the Kansas-Nebraska border that were thought to have originated from overwintering sources. A few soybean fields were sprayed, but most populations had not reached threshold levels. Soybean aphid reports within Kansas continue to be negative based on calls that I have received.

Dr. Bailey also wrote that Missouri soybean growers were facing some heavy populations of spider mites that extended almost statewide. In addition, white grubs have damaged soybean bottomland fields near the Missouri river from Hermann to Jefferson City. The worst grub infestations have resulted in up to a 70% reduction in plant stands on sandy soils.

These mite and grub problems are unusual for their geographic breadth. See a copy of our Soybean Insect Management recommendations for 2005 and Issue No. 8, June 10, 2005, of the Kansas Insect Newsletter, for additional information about spider mites.

-- Randy Higgins

Soybean stem borer, *Dectes texanus*:

Sampling has confirmed that soybean stem borer adults are presently emerging in Kansas, with peak emergence somewhat later than normal this year. This small gray, long-antennaed beetle can sometimes be observed within the upper canopy of soybean plants at this time of year. At one site in Republic County, on Wednesday, July 6th, samplers collected a few hundred soybean stem borer beetles in a few hours of sampling with a sweep net. This research plot was unusual in that the new soybean plants were planted in rows interspersed every few yards with undisturbed, but heavily infested stubble from last year's soybean crop. One of the most likely places to find adults of this species during the next few weeks will be to closely examine the edge rows of this year's soybean fields that are located adjacent to last year's stubble. The heavier the infestation in the adjacent field, the greater the likelihood that beetles will be obvious on the new crop's foliage as they emerge from their overwintering sites in the bases of the old stems near the soil line.

Keep in mind that fields in cultivated sunflower the previous year are an equally important source of infestation for soybeans during the current growing season. In fact, sunflower is preferred to soybean by female beetles and larvae are often present in 80% or more of sunflower plants. We have estimated that a single irrigated circle of sunflowers can produce upwards of 5 million beetles the following year. Although the borers can contribute to lodging of sunflowers, their impact is probably much greater on soybean.

Males and females will soon be mating and females will then lay their eggs within leaf petioles. Upon hatching, larvae will tunnel down to the main stem and into the central pith core of the plant. Shortly thereafter, evidence of infestation becomes apparent in the form of wilted and dying leaves on the damaged petioles, but keep in mind that many other factors can cause leaves to wilt. However, larval entry holes into the main stem are usually evident when the wilted leaf is lost or removed. Larvae are highly aggressive toward one another and generally only one will survive within each plant by season's end. At this time, larvae move to the base of the plant where they may girdle the stem from the inside before sealing off their overwintering chamber.

A number of K-State researchers (Larry Buschman, Randy Higgins, Srinu Kambhampati, J. P. Michaud, Phil Sloderbeck, Mike Smith, and Jeff Whitworth, among others) are investigating aspects of this insects' life history and addressing various potential management options for effectiveness against this pest. Basic biology studies are addressing population genetics, female oviposition behavior and host plant preference criteria. Other work is designed to improve our understanding of its yield impact in both soybeans and sunflowers.

Potential management options under evaluation include identification of host plant resistance, suppression with insecticides, and the use of sunflowers as a trap or companion crop for reducing infestations in soybeans. Until other control options are developed, fields should be sampled before maturity for tunneling and live larvae. Fields with high percentages of infested stems should be harvested as soon as possible after plants reach maturity to avoid yield losses associated with the girdling and lodging caused by the larvae.

Some of this work is partially supported through funding provided by the Kansas Soybean Commission, whereas other resources have been contributed by the National Sunflower Association and other multi-state research programs. Virtually all of our research and outreach efforts are supplemented, directly or indirectly, by various K-State Research and Extension programs. Check out our web site at <http://www.oznet.ksu.edu/entomology/extension/insectinfo/sbsb/sbsb2.html> or publication MF-2581, The Soybean Stem Borer, at www.oznet.ksu.edu/library/entml2/MF2581.pdf for more pictures and related information.

-- Randy Higgins, J. P. Michaud, Phil Sloderbeck, and Jeff Whitworth

Weekly Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostic Laboratory from June 29 through July 1, 2005:

6-29-2005, Barton County: Darkwing Fungus Gnats, Collembolans, Frit Fly in home.

6-30-2005, Kiowa County: possible Honeylocust Scurfy Scale.

6-30-2005, Rooks County: Bagworms on arborvitae.

7-1-2005, Shawnee County: Gnaphosid Spider in home.

7-1-2005, Barton County: Click Beetle from home.

7-1-2005, Labette County: Predaceous Diving Beetles in pool.

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 at bbrown@oznet.ksu.edu.

Bobby Brown

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Sincerely,

Randall Higgins
Extension Specialist
Entomology (Crops)

J.P. Michaud
Integrated Pest Management -
Agricultural Research Center - Hays

Phil Sloderbeck
Southwest Research and Extension Center
Extension Specialist
Entomology - Garden City

Bobby Brown
Entomology Diagnostician

Jeff Whitworth
Extension Specialist
Entomology (Crops)