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

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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Passing of Dr. Randy Higgins:

In case you've not yet heard, Dr. Randy Higgins passed away last week. Randy had been associated with all aspects of Entomology, but especially with Extension Entomology. He has been a great asset to Entomology and Kansas State University. He was highly productive and held in high esteem by all that associated with him. Randy always did his best and demanded the same of others which helped improve everything he was involved in. Randy will be missed, as a friend and trusted colleague, and his contributions will not be forgotten as we continue our service and commitment to Entomology and Kansas State University.

Jeff Whitworth

Come and Done … OR … Where Are They Now?

Although the active 2006 European pine sawfly and eastern tent caterpillar presence began approximately a week later than expected, both have completed their larval feeding activities “on time”.


Mature Eastern Tent Caterpillar


Eastern Tent Caterpillar Cocoons


Eastern Tent Caterpillar Moth

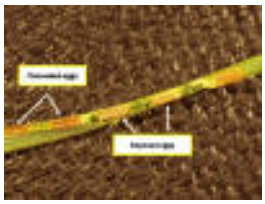
Eastern Tent Caterpillar Egg Masses

Mature eastern tent caterpillars have wandered away from their host plant and sought a secluded site to form the “yellow cocoons” inside of which they immediately form pupae. By late May and through mid-June, eastern tent caterpillar moths will emerge and mate. Females will then deposit their characteristic egg masses around twigs of their preferred hosts where they will remain for the remainder of the season and through the winter.

Debris-covered cocoons

Adult European Pine Sawfly

Female European Pine Sawfly



Concealed and Exposed Eggs

European pine sawfly larvae have formed cocoons under soil debris (usually) at the base of their hosts. Larvae undergo a summer resting period within their cocoons. In late summer, they finally transformation themselves into the pupal stage. Sawfly adults will emerge in the fall, mate and then insert eggs into pine needles where they will overwinter.

What’s current?.....

Euonymus scales

Overwintered female Euonymus scales produce eggs in the early spring. Crawler activities typically begin in early to mid-May. Thus now is the time to consider insecticide applications against crawlers.

Euonymus scales are somewhat difficult to control. In Kansas, they produce (at least) two “overlapping” generations per year. Also, for each generation, egg hatch and crawler emergences occur over a two to three week period. Control procedures against first generation crawlers thus require an initial spray plus a follow-up treatment.

Insecticide coverage is difficult. Scales prefer the bottom sides of leaves. Therefore sprays must be concentrated on lower leaf surfaces. The lush growth nature of Euonymus plantings further complicates spray coverage. The last impediment to total spray coverage is that (in severe infestations) woody stems/ branches (down to the soil line) may be covered with scale.

Numerous products have labeled use against scale insects. Some possibilities include: Ortho Systemic Insect Killer, Ortho Rose and Flower Insect Killer, Sevin sprays, Rose and Flower Insect Killer II, Power Force Multi-Insect Killer Concentrate, Triazicide and Hi-Yield Indoor/Outdoor Broad Use Insecticide.

“Honey Dew”……..

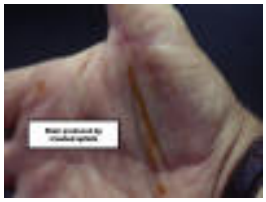

Sticky Honey dew


Sooty Mold Deposits

Incidents of cars, sidewalks/walkways, patio equipment, swing sets, etc. (anything setting beneath large trees) being covered with “sticky-stuff” are typically reported at this time of year. The “sticky-stuff” is honey dew, the sugary liquid excrement produced most commonly by insects which feed on plant sap ---- notably **aphids** and **scale insects**. Honey dew also is an excellent medium supporting the growth of the grey to black sooty mold fungus.


Wooly Briar Aphid


Fully Wooly Aphids


Stain Produced by Crushed Aphids

No signs of damage to infested tree

Populations of “tree aphids” rapidly build in the spring. Among the many possible species, wooly briar aphids can be quite spectacular in appearance, entirely covering twigs and branches of their tree host. In addition to their production of excessive amounts of honey dew, they will cause a stain on anything which crushes their bodies. Other than the inconvenience/annoyance attributed to accumulated deposits of honey dew, the aphids cause no damage to tree hosts. Insecticide treatments are not recommended because the aphid masses will (seemingly overnight) disappear when the aphids fly to their very specific “briar” alternate hosts.


Lecanium scale


Chorosis foliage


Dead branches

The most common scale insects associated with massive honey dew production are the lecanium scales. In particular, the European fruit lecanium scale infests a wide range of deciduous tree species. Naturally occurring populations of predators and parasites provide effective biological control of lecanium scales. With the reduction or elimination of beneficial insects due to natural and/or manmade disruptions, lecanium scale populations rapidly escalate.

Due to their relative immobility, scale populations remain “in place”. Unlike aphids which do not harm to their tree hosts, lecanuim scale can be detrimental. Tree foliage may become chloroatic. And, after several consecutive seasons under heavy scale pressure, branch dieback can occur. The darkened appearance of dead branches is due to the sooty mold buildups on those branches.

There is no quick-fix against lecanium scale. Contact sprays are not recommended because homeowners do not have the equipment necessary to provide adequate coverage to large trees. Whereas commercial sprayers might have the necessary equipment, applications would have to be timed with crawler activities which may vary from locale to locale as well as within a locale. Also, broadcast sprays are detrimental to predators and parasites attempting to build their population levels. **IN FACT, SCALE OUTBREAKS ARE OFTEN IN SITUATIONS WHERE INSECTICIDE APPLICATIONS, TARGETED AGAINST SCALES, INADVERTANTLY ELIMINATE EXISTING POPULATIONS OF BENEFICIALS. REPEATED SPRAYING, WHEN ATTEMPTING TO ELIMINATE UNCHECKED SCALE POPULATIONS, CONTINUALLY ELIMINATE PREDATORS AND PARASITES ATTEMPTING TO REESTABLISH THEIR POPULATIONS**. Often, normalcy is restored only after insecticide treatments have been withheld and populations of beneficials allowed to grow and exert biological control.

Consideration might be given towards applying homeowner-available systemic products such as Expert Gardener Tree and Shrub Insect Control and Bayer Advanced Tree and Shrub Insect Control, both of which contain the active ingredient imidacloprid. Bear in mind that, especially in larger trees, an extended period of time (perhaps 2 to 3 months) may be required for the distribution of product throughout the tree. Thus

again reemphasizing that there is no quick-fix against existing scale populations, but rather an eventual population reduction. And again, expect no miracles that “dead branches” will come back to life: **DEAD IS DEAD**.

Lastly, systemic insecticides “are friendly” towards non-target organisms. Because systemic insecticides are contained within the tree/shrub vascular elements including the phloem tissues from whence lecanium scales derive their nourishment, beneficial predators and parasites are spared.

Bob Bauernfeind

Hessian Fly:

Producers, consultants and insurance adjusters need to remember that this pest, in addition to the other common culprits of hail, wind and early freeze injury, can be the cause of lodged wheat this time of the year. Keys to pinning lodging damage to Hessian fly are, tillers lodging just above a joint, finding the "flaxseed shaped" fly pupae under the leaf sheath at or just below where the tiller is broke over. This problem seems to be most prevalent in continuous, no-till wheat in south central Kansas, but can occur in other areas of the state. In addition knowing which varieties are susceptible to Hessian fly is also often a dead give away. If the susceptible varieties (eg. Jagger, Tam 110) are lodged and resistant varieties (Ike, 2145) are not, this is an indication that one should check the lodged tillers for the fly pupae (Check the **Wheat Variety Disease and Insect Ratings 2004** for more information on which varieties are susceptible: http://www.oznet.ksu.edu/library/plant2/mf991.pdf

Lodged wheat

Broken tiller

Pupae
(Leaf sheath pulled back to expose Hessian fly pupae.)

Phil Sloderbeck

Spider Mites in Wheat and Corn:

In western Kansas unusually high numbers of spider mites have been noticed in many wheat fields this spring. While they may not be at numbers to justify treatment in the wheat there is concern that they may pose a real threat to corn and other crops either planted into failed wheat or in neighboring fields. While this is a potential problem, the threat is far from a surefire crisis. The severity of the mite problem on these spring planted crops will depend as much on the weather as on the source of infestation. While we could see some early feeding on the seedling plants from the mites currently present in the wheat, the key to future problems will depend on summer weather and also on the predator populations that may also be present in the wheat fields. Often when we see high numbers of spider mites in the wheat fields, there may also be significant levels of predator mites which over time may reduce the mite populations. The key will be to watch fields carefully, and avoid unnecessary insecticide and miticide applications, that could make the problem worse. The threat is probably the greatest for corn since most of the mites currently in the wheat fields are probably Banks grass mites which would feed on corn, sorghum and other grassy plants, but should not feed on broad leaf plants such as soybeans or cotton. Information on management options for corn can be found at: http://www.entomology.ksu.edu/DesktopDefault.aspx?tabindex=255&tabid=598 and in the Corn Insect Management Publication MF-810: http://www.oznet.ksu.edu/library/ENTML2/Mf810.pdf

Phil Sloderbeck

Cattle Behavior Tells What Flies Are Present:

Cattle are not passive hosts to the various flies pestering their lives; they do fight the tormenting flies and because these defensive behaviors are specific for the main flies on pasture, one can tell the species of flies attacking the animals. Most of the defensive behaviors are in response to the annoyance and pain inflicted by the pest on the host. Stable flies, possessing a large bloodsucking proboscis, feed once-twice/day, inflicting each time a bite estimated to be about 40 times more painful than that of a mosquito. Cattle will react to stable fly attack by foot stomping, tail switching, bunching, and spending long periods of time in water in attempts to protect their legs and belly, the preferred biting sites of stable flies.

Horn fly mouthparts, developed for a blood sucking habit, are significantly smaller than those of stable flies; however, each female horn fly feeds up to 40 times a day; thus they insert their proboscis into their host's skin that many times a day. Cattle react to horn fly attack by switching the tail over the back (rump), throwing the head over the shoulders, and by bunching. Bunching caused by stable flies and horn flies differs in that cattle bunched by horn flies throw the heads over their backs.

Face flies, indistinguishable from house flies and also possessing sponging mouthparts, can not obtain their food by sucking blood from their hosts; they can only feed on eye tears or serum/blood from wounds. Upon landing on a host's face, face flies move immediately to the eyes; whereas house flies move to the host's nostrils and mouth. However, face flies mouthparts are armed with sharp teeth that they use for scraping the conjunctival tissues resulting in an increase in tears with higher protein content. These lacrimal secretions run down the cattle cheeks and are visualized when dust collects on these secretions. Cattle pestered by face flies react by ear flapping and head shaking from side to side. House flies do not cause any damage to cattle;

their presence elicits little defensive behavior from their hosts.

Alberto B. Broce, Ph.D.

Dynamics of Pest Flies in Kansas:

Environmental factors such as temperature and rainfall affect the dynamics of pest fly populations in different ways. Thus, horn flies, the small (about 3/16 inch) flies observed in great numbers on the back of pastured cattle, have a large population peak in June-July, with a secondary peak in September. Face flies, similar in size and appearance to house flies, have similar population dynamics as horn flies; both responding to the hot and dry July-August period by a deep depression in their numbers, followed by an increase in September. However, stable flies, with blood sucking habits as the horn flies, present a major peak in May-June, with a second distinct, but much smaller, peak in early October. These population patterns indicate stable flies prefer cooler weather than horn flies and face flies. House fly populations have an extended high plateau from late June to September; these are the hot weather flies which can survive the rigors of summer by finding refuge in rural structures. About 40 species of horse flies and deer flies have been reported in Kansas; individual species make an appearance for just a couple weeks each, forming a highly variable pattern lasting from April to September.

Alberto B. Broce, Ph.D.

For Release: (Washington, D.C. -- Thursday, April 6, 2006)

New Edition of Hispanic Environmental Health Page Focuses on Pesticides

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EPA announced today a new Hispanic environmental health page on pesticides in its Spanish-language portal. The new page discusses health and environmental issues associated with the proper use of pesticides and informational resources in Spanish and English. This Hispanic Web site is part of the agency's continuing expansion of outreach to the Hispanic community in the United States and Puerto Rico.

The Hispanic environmental health page, "El medio ambiente y su salud," focuses on the agency's overall efforts to educate Hispanics, researchers, and health care providers on how environmental health issues affect the different Hispanic communities. The page is updated regularly with new information on developments and policy. Since its launch last year, this popular page has covered issues such as asthma, mold and carbon monoxide. This segment of EPA's Spanish-language portal will feature other environmental issues such as green technology and drinking water in the near future.

New edition on pesticides (http://www.epa.gov/espanol/pesticidas.htm)

Information on "El medio ambiente y su salud" (http://www.epa.gov/espanol/saludhispana/index.htm)

Sharon Dobesh

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Sincerely,

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