Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel

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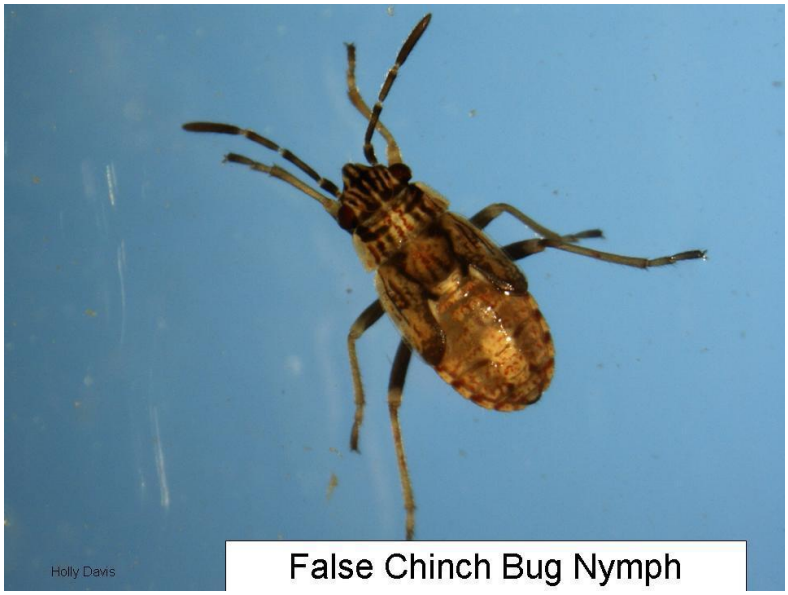
False Chinch Bugs

We have received reports from Drs. Brian McCornack and Wendy Johnson regarding false chinch bugs feeding on canola and young soybeans in central Kansas. This occurs every year, usually in southeast or central KS. False chinch bugs have a wide host range and generally feed on different species of weeds, only moving into crops after the weeds die. Most frequently they are found in border areas or in spots in the field where weeds were growing and usually in fields with some residue. False chinch bugs may be very numerous, i.e. 100's/ft2, as nymphs and thus can cause serious stress to young plants by the sheer volume of juice they suck from the plant (see photo). We have never had the occasion to test insecticides against this pest as we have never seen large areas with enough bugs to adequately run an insecticide trial. However, reports from a couple of applicators last year that apparently had large areas of fields severely infested indicate they were getting good control with pyrethroid insecticides labeled for use in soybeans or canola. For more information, please visit: http://www.ksre.ksu.edu/library/entml2/mf3047.pdf



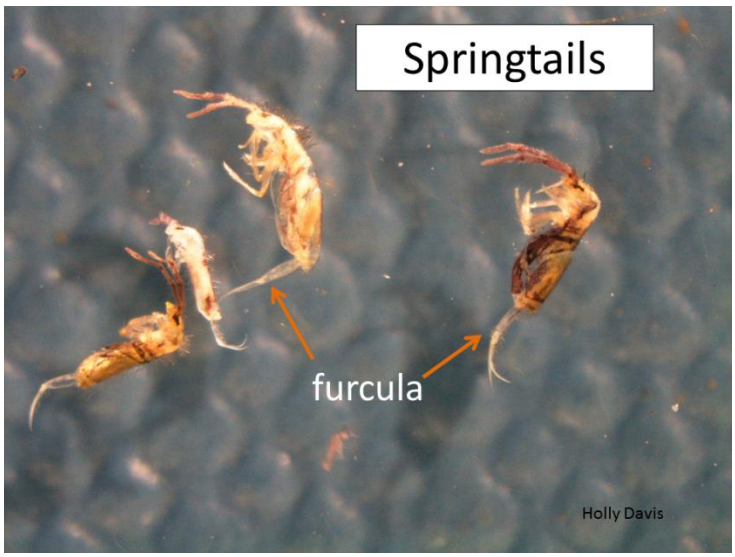
False Chinch Bug Nymph

Jeff Whitworth
Brian McCornack

Holly Davis
Wendy Johnson

Springtails Springing Into Homes

Many homeowners are concerned about tiny (1/16 inch long) white to purplish insects that are showing up suddenly in their homes by the hundreds to thousands. These tiny insects are commonly called springtails and they get their name from a projection on their abdomen, called a furcula, that allows them to propel themselves through the air (see photo). They are very common in the soil and other areas that remain moist where they may feed on decaying organic matter, may be predatory on other soil organisms, or may feed on plant material although they do not cause noticeable damage. Springtails must remain in moist habitats and will desiccate and die very quickly without enough moisture. Sometimes, when their habitats become too wet (after a heavy rain), too dry, or otherwise unsuitable, they move into homes. In many cases, this invasion is temporary and the springtails will quickly die off as they desiccate. However, if they begin to develop in the home they may be found in dark, dank areas or around sources of moisture including basements, crawlspaces, around drains or leaky pipes, in well watered plants, or around sinks or bathtubs. While these insects can be quite a nuisance they will not damage any household materials and they do not bite or sting. They may be controlled by removing their habitat, i.e. replacing wet, rotting wood, cleaning drains, fixing leaking pipes, or running a dehumidifier in basements. For more information please visit:
http://www.ksre.ksu.edu/library/entml2/EP124.pdf



Holly Davis

Submarines in trees? ----- "Borers" in Trees

Thus far in 2012, several homeowners have submitted images of dead trees, asking, "What killed my trees?" Upon inspecting dead trees, they found "holes" in trunks and branches. They thus stated, "Borers killed my tree". But in actuality, the tree likely was already in decline, and the borers were just the final nail in the coffin.

"Borers" is an umbrella term applied to insects in various taxonomic categories: primarily coleopterans (beetles) and lepidopterans (moths and butterflies but confined to moths), but not to the exclusion of certain hymenopterans (sawfly and wasp species) and even dipteran (fly) species. It is common knowledge that "borers" are regarded as secondary pests. They successfully establish themselves in trees which already are stressed and weakened (and unable to fend off borer larvae).

Submarines in trees? Well, as submarines conduct operations unseen underwater, borer larvae conduct their business unseen under the bark. By the time a tree succumbs, the borers have had their field day. In one instance, the first hint of their presence was the appearance of "bare spots" (Figure 1A red arrows). Figure 1B zooms in on an upper limb).

Figure 1

Looking closely at the large bare area towards the base of the tree, one can readily see the extensive galleries created by flatheaded borer larvae (Figure 2).

Figure 2

Flatheaded borer larvae feed just beneath bark, consuming the cambium and newly formed phloem and xylem elements. Extensive feeding damage severs conductive elements --- in essence causes a girdling effect and subsequent branch/trunk death. Also, bark will essentially detach from the wood when the "glue" (cambium and active vascular elements) are destroyed. Bark may adhere to the tree on the basis of bark-attached-to-bark. However, this connection eventually breaks causing chunks of bark to fall. Because the trees in this instance were honeylocusts, and because no insects were recovered, one can only guess/assume that the species of flatheaded borer responsible for this situation might have been the honeylocust agrilus.

In a second instance, beetles were sent in for identification because they killed a pin oak. The beetles were ground beetles ---- considered beneficial insects because they are predators and eat other insects. The homeowner eventually submitted an image of the dead pin oak (Figure 3A), as well as several close up images (Figure 3B and Figure 4). The tree was riddled with "holes"/beetle/borer exits. Again, without any specimens in hand, one can only speculate as to what species of borers were at work. Although not the perfect textbook D-shape which character the exit holes of flatheaded borers, the exit holes were definitely not the traditionally round holes associated with roundheaded borers. If one wants to assign "blame", then possibly flatheaded appletree borers might carry the mantle-of-guilt as they have a very wide host range including oak. (There may be signs of damage caused by woodpeckers looking for a meal of borer larvae).

Figure 3

Figure 4

Yet another report was submitted: a dead elm tree. This was a rather easy diagnosis. As seen in Figure 5, there are numerous scattered small tiny round exit holes (referred to as shotholes). And beneath the bark, long vertical egg galleries of elm bark beetles are readily apparent. From both sides of an egg galleries are horizontal/radiating larval galleries (Figure 6 from National Geographic Magazine shows ½ of a gallery system). When larvae complete their development, they pupate at the end of their individual galleries. Once they emerge from their pupae, they bore through the bark and exit through their individual "shot hole" ---- thus the scattered appearance of shotholes on the bark surface. Looking at the scattered shotholes, visualize the extensive hidden radiating gallery systems and how they (in essence) sever the conductive elements --- in essence causes a girdling effect and subsequent branch/trunk death.

Figure 5

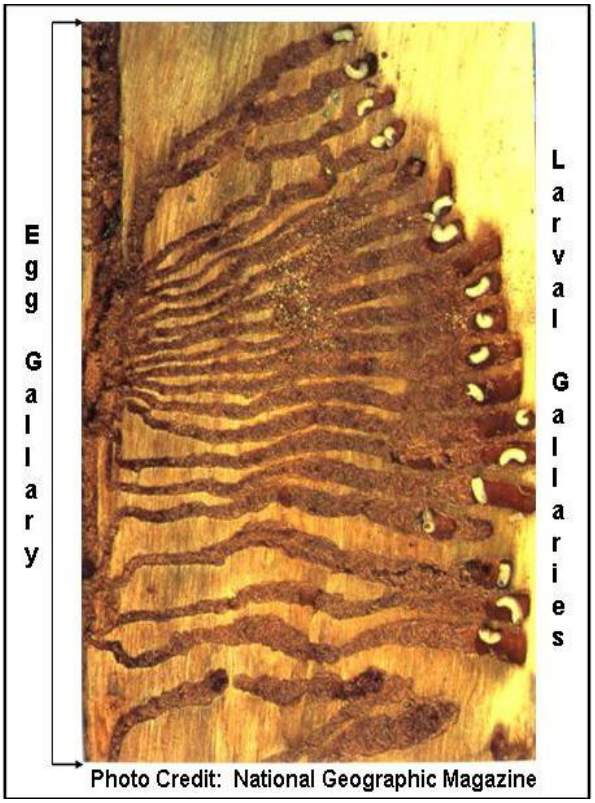


Figure 6

In this instance, whether it was the extensive tunneling/girdling activities, the inoculation of the fungal pathogen and development of Dutch elm disease, or a combination of both, the result was A DEAD ELM.

I myself have lost several 50+ year old American elms to Dutch elm disease, extensive elm bark beetle damage, or both (Figures 7 and 8)

Figure 7

Figure 8

Before removing the tree above, I was able to easily pull off the bark (Figure 9), simply because the tree was so heavily infested by elm bark beetles that nothing was left to "glue" the bark to the tree. Beneath the bark, the extensive galleries and accumulations of fecal matter were testament to the massive elm bark beetle populations (Figure 10).

Figure 9

Figure 10

While modern technology allows us to accomplish spectacular feats ---- men on the moon, land functional "robots" on Mars, and use the Earth's gravitational field to slingshot the Deep Impact space probe towards its July 3, 2005 rendezvous with Comet 9P/Tempel (267 million miles from Earth), bringing it within 310 miles of the comet ---- certainly we can prevent borer damage! However, there is no way of knowing when and where borer activities are under way.

As we are out for a Sunday drive, we look at scenery and the trees. We may smirk and say, "Who says that there aren't any trees in Kansas?" And borers might be the furthest thing from our minds. The only time that people might be jolted into an awareness of their presence is after-the-fact --- and that means a dead tree (or two or several) on their personal property. A person might then think, "If only I had attempted to prevent borers last

year, my tree would not be dead this year". But in each of these incidences, it was readily apparent that borers had been active during several previous years, and that the now-evident massive amount of borer damage is the culmination of "unseen" borer activities.

It might be thought that after losing a tree and seeing the evidence of borers, that one might automatically apply systemic insecticide drench treatments to remaining standing, living trees. The use of systemic insecticides does not guarantee control of flatheaded borers or bark beetle/shothole borer larvae. Again, if those trees already have suffered any degree of borer damage, the vascular elements may be incapable of moving systemic insecticides into, up and throughout the trunks, limbs and branches.

Possibly systemic insecticides might be most important for use on newly transplanted stock which will inherently be under stress/weakened until such time [several years (?)] that they become firmly established. People may then choose to continue the use of systemic insecticides as preventatives against certain borer species ---- but again, no absolute guarantee of freedom from borers.

For borer species not specified on systemic insecticide labels, people may consider the use of contact insecticides applied to tree trunks and larger limbs. The drawback is that one would have to know what borer species they are dealing with, and the activity period of the intended targeted species. If a season-long presence, continued repeated treatments would be required. Depending on the number of trees to be treated as well as the size of the trees, one would have to weigh the practicality of such a program to be repeated season after season after season after……

Not to sound defeatist, but despite our intelligence, and although armed with available information and "tools", simply said, "Nature will sometimes have its way despite our best efforts to thwart the destructiveness of borers in our trees and shrubs".

Bob Bauernfeind

Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostic Laboratory from May 18th to June 7, 2012.

May 18 – Stevens County – Beet armyworms in corn
May 18 – Wyandotte County – Tortoise beetle larvae on salvia
May 21 – Butler County – Billbugs around home and lawn
May 22 – Anderson County – Aphids around home and garden
May 22 – Anderson County – Springtails around home and garden

May 23 – Riley County – Whitelined sphinx moth around home
May 23 – Harvey County – Springtails in soybean field
May 23 – Wyandotte County – White-margined burrowing bugs in home
May 23 – Riley County – Tortoise beetle larvae on Pitcher sage
May 25 – Miami County – Variegated cutworm on raspberries
May 29 – Comanche County – Stink bug nymphs around home
May 30 – Phillips County – Subterranean termite workers in mulch
May 31 – Allen County – Springtails in home
May 31 – Nemaha County – *Lasius* sp. ants in home
May 31 – Cloud County – Bed bugs in home
May 31 – Riley County – Softwinged flower beetles in rose blooms
May 31 – Saline County – Varied carpet beetle in home
June 1 – Riley County – Ghost spider and fishing spider found in home
June 1 – Nemaha County – Leafcutter bees and ground beetle in yard
June 1 – Lyon County - White-margined burrowing bugs on and around potato plants
June 1 – Finney County – Pine needle scale on Austrian pine
June 1 – Bourbon County – Roundheaded borer in firewood (ash tree)
June 1 – Phillips County – White-margined burrowing bugs in orchard
June 5 – Atchison County – Spruce spider mites on cedar
June 5 – Riley County – Root aphids on garden plant
June 5 – Crawford County – Corn earworm and true armyworm in corn
June 5 – Sedgwick County – Chinch bug nymphs in lawn
June 5 – Shawnee County – Female brown dog ticks (2) on human
June 5 – Franklin County – Fletcher scale on Juniper
June 5 – Atchison County – Long horned beetle on ash tree
June 6 – McPherson County – Leafhoppers in lawns
June 6 – Johnson County – Ant larvae and dead ant found on windowsill
June 6 – Leavenworth County – Brown recluse spiders in home
June 6 – Riley County - Chrysanthemum lace bug on coneflowers
June 6 – Smith County - Cynipid oak galls on oak tree
June 6 – Trego County – Wolf spider in home
June 6 – Wyandotte County – Bagworm on cottonwood tree
June 6 – Sedgwick County – Thrips, springtails, and booklice in home
June 7 – Johnson County – Clay-colored leaf beetles feeding on locust tree
June 7 – Harvey County – Springtails in building

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 GotBugs@ksu.edu.

Holly Davis

Sincerely,

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