

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel



Department of Entomology
123 West Waters Hall
K-State Research and Extension
Manhattan, Kansas 66506
785-532-5891
<http://www.entomology.ksu.edu/extension>

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Household Pests – termites, ants, brown recluse spiders

Western Corn Rootworm

Vein Pocket Gall

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Insect Diagnostic Laboratory Report

Alfalfa – Pest Update

Cool, wet weather continues to dominate the state. This has allowed the alfalfa weevil adults to remain in the alfalfa fields. As they remain in fields they are feeding in/on terminals and the new foliage. However, they don't feed anywhere near as much as the larvae, plus there aren't near as many so, the feeding really is negligible. However, they do cause concern and their feeding on the new foliage and "barking" of the stems can slow regrowth if they remain in fields. Swathing alone will not eliminate the adults if the weather continues to be only in the 80's for daytime highs.



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The first potato leafhoppers of the summer were detected in north central Kansas on 19 May. This is a little earlier than usual but fits right in with the unusualness of this spring.



Pea aphid populations have been steadily increasing the past couple of weeks. However, sampling some of the same alfalfa fields on 19 May indicated the aphid populations have reduced relatively dramatically. There are many larval and adult lady beetles in these fields and they can even be readily observed feeding on the aphids. So, these beneficials really seem to be helping with aphid control.



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Household Pests

Termites and ants continue to swarm on warm days. Please remember, it is imperative to make proper identification to ensure proper treatment is performed as treating for ants is much different (and less expensive) than treating for termites! For more information on termite identification, biology and control please visit: <http://www.ksre.ksu.edu/bookstore/pubs/MF722.pdf>

Brown recluse spiders are hatching. These hatchlings may go unnoticed due to their small size, light color, and reclusive nature, but will eventually develop into mature adults. Brown recluse spiders require 8 – 15 months to reach maturity and may live 2 to 3 years as adults.



These spiders, plus 61 others of various sizes, were collected 19 May from a shed in north central KS.

For more information on brown recluse spider identification, biology, and control please visit: <http://www.ksre.ksu.edu/bookstore/pubs/MF3133.pdf>

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Western Corn Rootworm

In the next ten days, western corn rootworm larvae will be starting to hatch in continuous corn fields across Kansas. With Bt resistance popping up in the Midwest the last few years, it will be important to monitor rootworm targeted Bt corn hybrids this season for the presence of larvae, root damage and adults. Due to unusually wet conditions in western Kansas, corn planting has been delayed in many areas. Fields that are planted later may be lucky enough to miss out on rootworm feeding this year. But if corn seedlings are just starting to grow, rootworm feeding could quickly take out new stands if the timing of larval egg hatch is right and populations are high enough. A soil applied insecticide may be warranted if the field is not planted to a rootworm targeted Bt and the field had noticeable adult rootworm beetle activity that went untreated the previous year.



Young corn root damaged by western corn rootworm larvae (left), and a healthy, undamaged corn root (right).



For more on management decisions, consult the [Corn Insect Management Guide](#) and 

Sarah Zukoff

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VEIN POCKET GALL

We continue to receive inquiries regarding gall-like growth on the underside of pin oak (*Quercus palustris*) leaves. In some cases, many pin oak trees have extensive galling on nearly all the leaves. In fact, two trees on the Kansas State University (Manhattan, KS) campus located behind Umberger Hall should be considered the poster-children for this gall as they are so heavily infested. The culprit is the vein pocket gall, which is caused by the gall-midge, *Macrodiplosis quercusoroca*. Galls are elongated, pocket-like swellings on the lateral veins

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and mid-rib of pin oak leaves (Figures 1 and 2). The gall-making organism is a small-fly called a midge (Family: Cecidomyiidae). Adults are 3.0 mm long and resemble small mosquitoes. Female midges attack newly unfolding leaves just before they flatten out. Following egg hatch, the small larvae or maggots migrate to the lateral and mid-veins and begin feeding. After a few days, tissue forms and surrounds each larva. The fully-grown larva is white and approximately 2.0 mm in length. Development is completed by mid-spring to early summer. Larva eventually emerges from the gall, fall to the ground, and overwinter or enter diapause (a physiological state of arrested development) until next spring. There is one generation per year. There is no control for this gall. Just live with it and enjoy the pleasures of one of nature's most fascinating insect-plant interactions.



Raymond Cloyd

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2015 Wrap Up: Eastern Tent Caterpillar, European Pine Sawfly, Brownheaded Ash Sawfly

I am always amazed at how time flies, especially after having taken a short hiatus. In my last newsletter inclusion (May 1, KIN#4), I referenced the Kentucky Derby. Now here we are already after the Preakness has been run. And American Pharaoh (with two wins under his cinch) is on the verge of the Triple Crown.

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But back to KIN #4, when I alluded to eastern tent caterpillars (ETC) and European pine sawflies (EPS) completing their feeding cycles during the week following the Kentucky Derby. That was written prior to the Derby. Actually, the morning **of** the Derby, I noted both ETC and EPS larvae wandering, having already completed their feeding phases, and in search of sites in which to make their cocoons. Sooooooo, I guess that they both beat the horses across the finish line.

From start to finish: ETC hatch was noted on March 21, and EPS 9 days later (March 30). Fast forwarding to the morning of Saturday (May 2), ETC took 42 days from start-to-finish, and EPS just 33 days. It would appear that the faster EPS might have worn the Roses.

One last early spring entry: brownheaded ash sawflies. As described in the April 24th KIN #3, I first noted their pinhole feeding. Although but a guesstimate, backtracking, those larvae probably were a week old, making their hatch/"first appearance" on-or-about April 17th. As of Saturday, May 16th, no larvae were to be seen, and newly produced terminal foliage was intact, further indicating that sawfly larvae had completed their feeding cycle. Thus the approximate developmental cycle for brownheaded ash sawflies was 29 days ----- much like the rapid development of European pine sawflies.

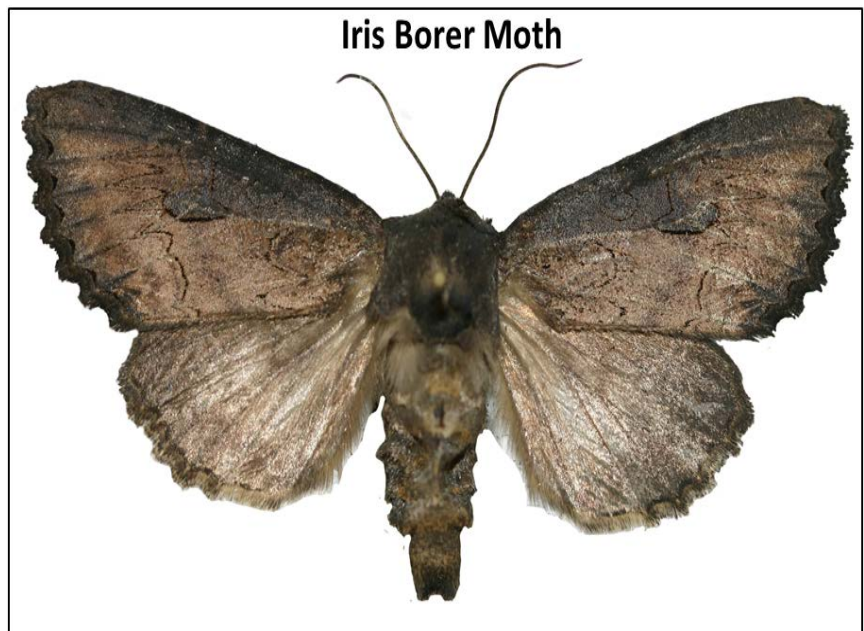
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Iris Woes – Iris Borers

I have been following Ward Upham's weekly recordings of reported "pest concerns". And occasionally, iris plants have been mentioned. Of course as an entomologist, my interest would be iris borers. Where-oh-where would I find iris borers? Well, I never have to look any further than the iris bed along the north side of my house. I have purposely allowed them free reign for the past several years ---- and they haven't failed me.

Iris borers are the caterpillars of iris borer moths. While described as being drab tan moths, they really are exquisitely patterned and colored ---- at least if one really takes a close look. People rarely see the moths because during their short flight period in fall, they fly at night when mating and depositing overwintering eggs primarily on leaves, and especially at the base of the iris stalks.

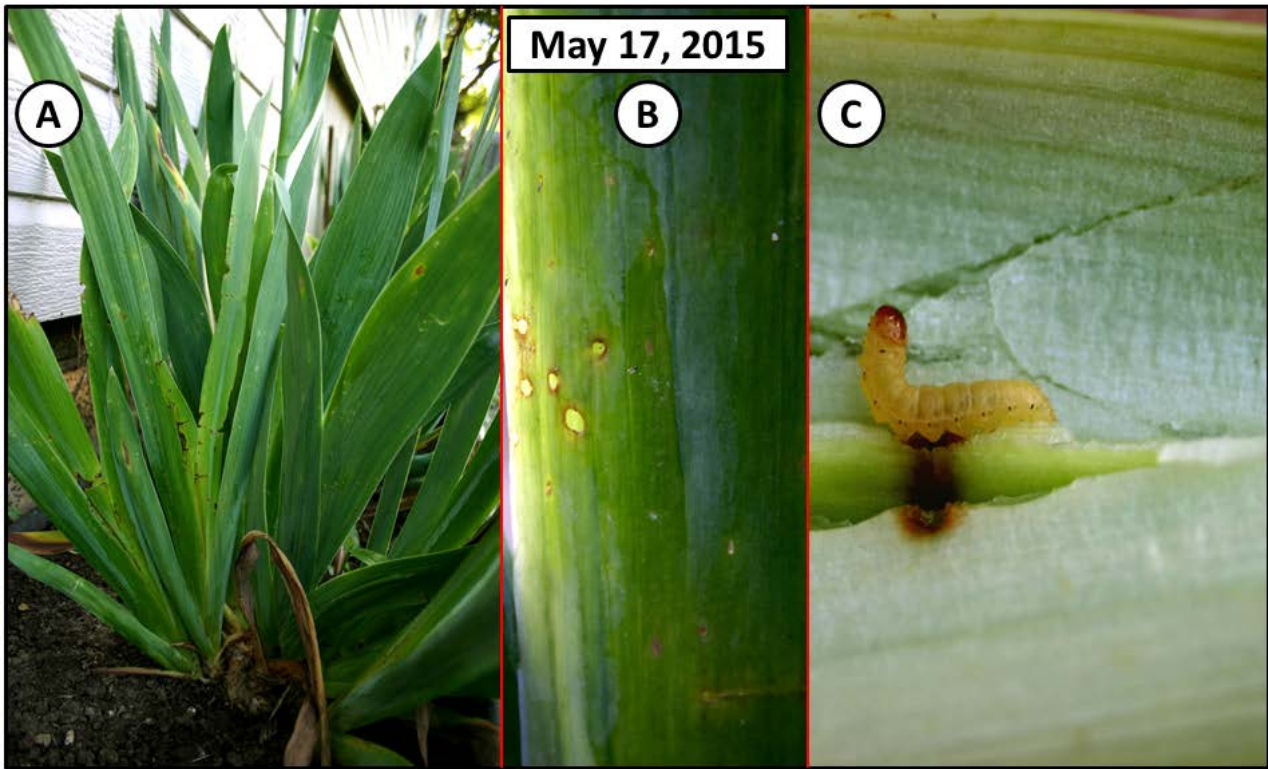
As current-season leaves develop (A), newly hatched caterpillars/larvae climb up on the new foliage and create tiny pinholes (B) through which they enter leaves. By splitting leaves at those sites, larvae can be found (C).



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Currently measuring about ¼- inch long, larvae will begin tunneling downwards toward the base of the plant.



By late summer, caterpillars will measure up to 1½ -inches in length and leave the somewhat restricted confines of the leaf. They will bore into the iris rhizomes to complete their feeding phase, after which they leave the rhizome to enter the soil where they will pupate. This will bring us back full circle to the emergence and mating of moths in the fall and the subsequent deposition of overwintering eggs.

The consequences of iris borers are twofold: current-season foliage becomes discolored with tattering along leaf margins, and leaves dying. Also, the bases of the plants as well as their rhizomes become an oozing mushy smelly mess due to fecal contamination along with the action of bacterial soft rot organisms.

At this current point-in-time, plants can be inspected for leaves displaying the presence of iris borer caterpillars. Due to their current small size, they can be squashed by a person running



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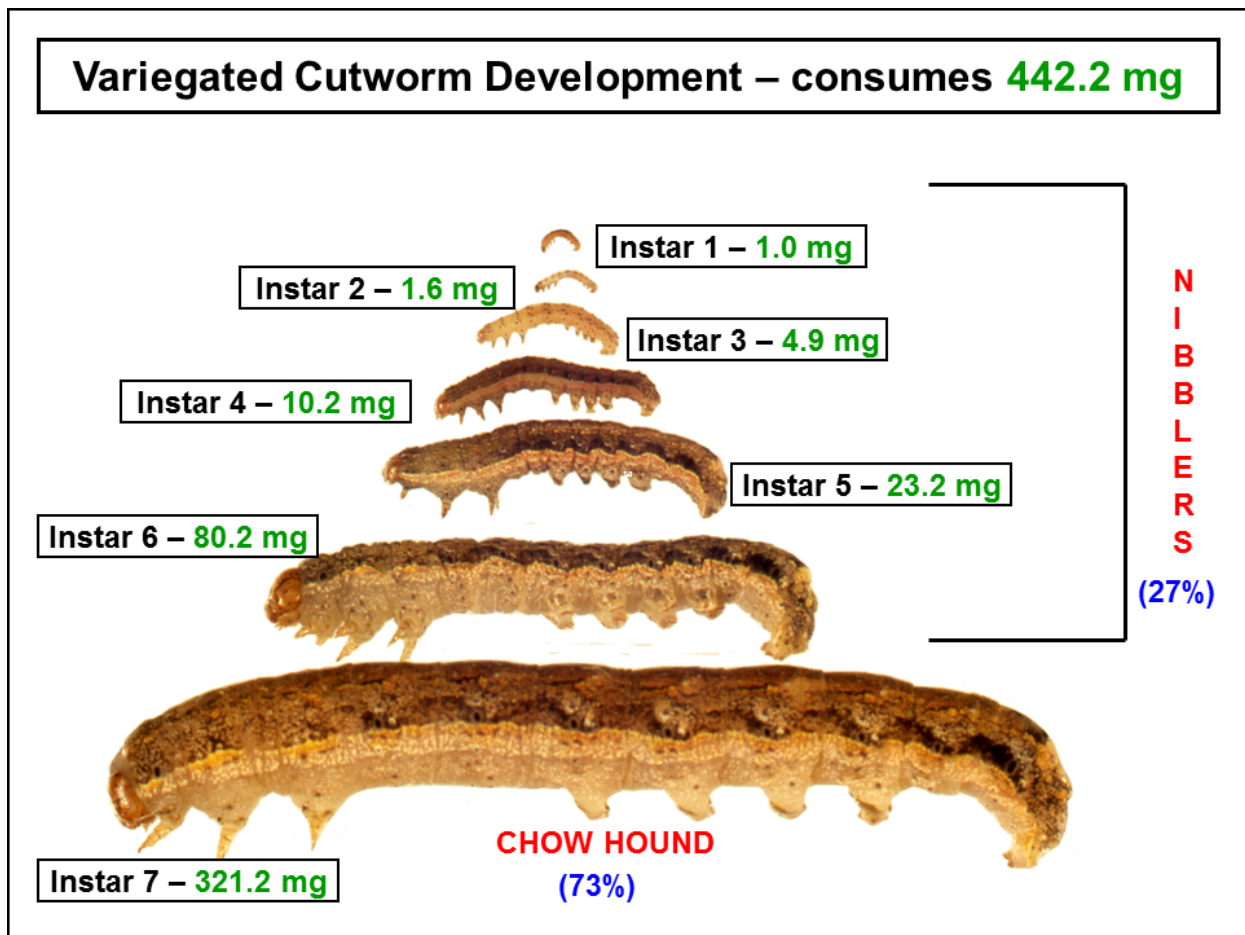
their finger and thumb along the leaf. Or, that leaf may be cut off and disposed of. If larvae are allowed to continue feeding uninterrupted, the entire plant and possibly the rhizome can eventually be roughed out. This would need to be done before pupation in order to prevent the production of new moths/mating/egg production.

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Feeding Capabilities/Capacities of Caterpillars – Useful Information for Bagworm Control

The following basic developmental sequence is applicable to caterpillars regardless their species.

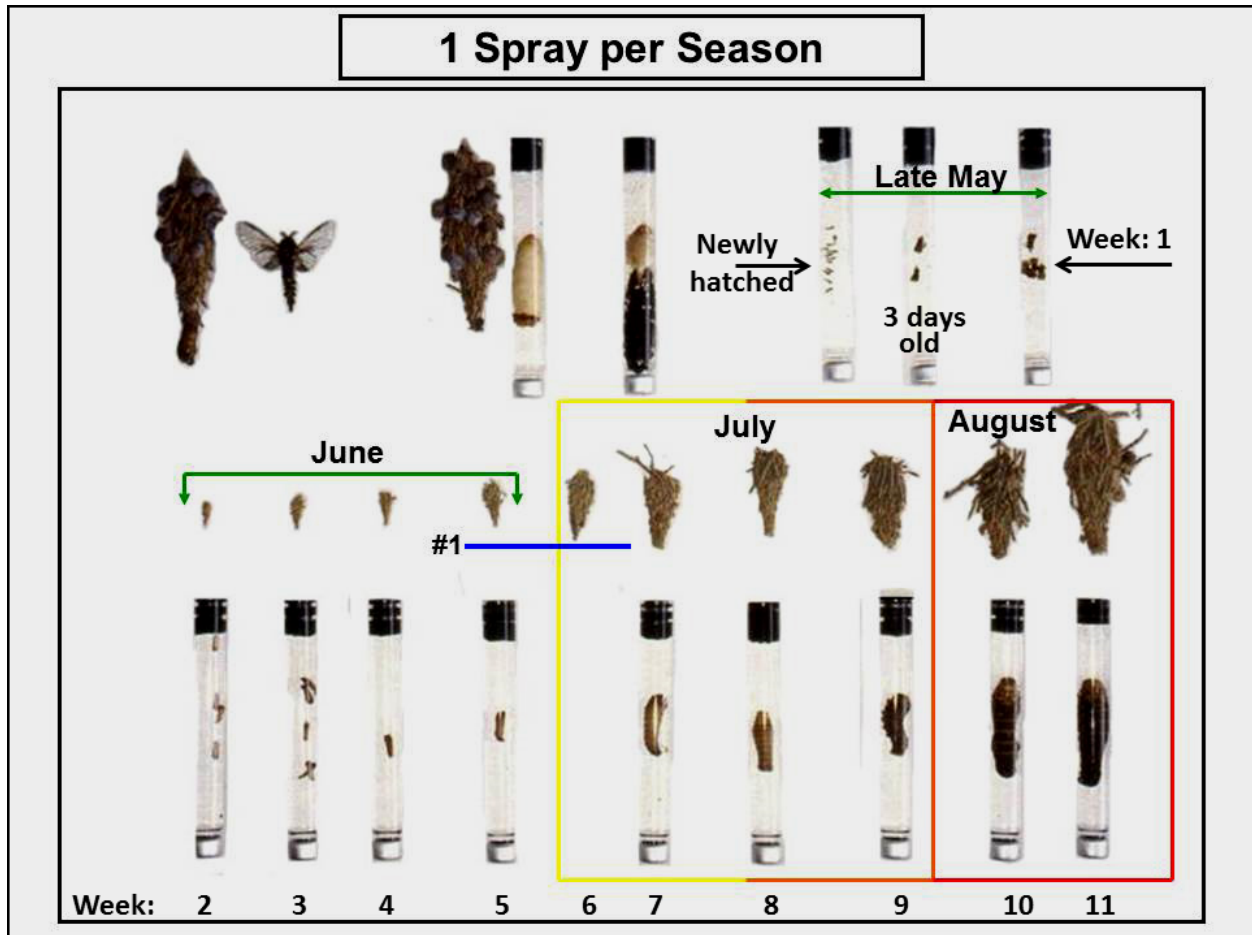
Beginning at egg hatch as a 1st instar larva, a caterpillar progresses through a series of developmental instars until such time it has matured, after which it ceases feeding when ready to transform into its pupal stage. In this sequence as determined under controlled conditions, the variegated cutworm consumed 442.2 mg of artificial diet. Only a small portion (27%) of the diet was consumed through the first 6 instars. In real situations where larvae feed on plant foliage, “nibblings” go unnoticed and are inconsequential. People usually first become aware of the presence of foraging caterpillars as foliage rapidly disappears when caterpillars ravenously feed midway-towards-the-end of their final “chow hound” instar. The last instar consumed 73% of the total diet.



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How can this information be applied to bagworm control? In the following sequence, in Weeks 1 - 5, under the **green “safe” line**, bags and bagworms are small. At 6 and 7 weeks, they become larger but remain under the **yellow “still safe” line**. Beginning at weeks 8 and 9, we have the **orangish “amber alert” line**. To this point, ALL ARE NIBBLERS! In weeks 10 and 11, we are under **the red “danger” line** as the bagworms now are into their “CHOWHOUND MODE”!



When bagworms hatch in any given year, the hatching period occurs over a 4 to 5 week period typically beginning in mid-to late May. While it is informative to know when bagworm activities begin, that should not signal the beginning of automatic weekly spray treatments. Rather, a single **thorough** treatment (with a contact insecticide) applied at the end of June into the first 10-14 days of July should suffice. I enlarged and bolded **thorough** to emphasize the importance of not merely hastily-applying a light spritz/misty spray treatment. While such might eliminate bagworms on the periphery of a tree/shrub, bagworm populations located in the more dense inner regions will be least affected. And as insecticide residues dissipate/degrade on the outer foliage, the unaffected bagworms will eventually move out and feed unfettered.

Comes the question regarding product/insecticide-of-choice. Currently in Kansas, there are 400+ products registered for use on bagworms. I personally do not recommend any one product over another. Use any contact

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insecticide (locally available through retail outlets) with bagworms listed on the product label. Based upon my experiences/trials (the first dating back to 1989), I achieved near-equally effective kill against late-instar bagworms using discontinued active ingredients (chlorpyrifos, diazinon, dimethoate, parathion) as well as currently available acephate, bifenthrin, carbaryl, cyfluthrin, gamma-cyhalothrin, malathion, permethrin, spinosad and trichlorfon. Reemphasizing: what is critical/key is not the active ingredient but rather (again) **THOROUGH COVERAGE** of the **ENTIRE** tree/shrub!

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So Far, Sloooooow Going - Periodical Cicadas

Whereas the current cool weather and rains have been a boon to farmers and stockmen (think wheat and farm ponds) across the state, the explosive emergence of Brood IV periodical cicadas has yet to happen. I have visited several sites in and near the Manhattan area ----- all has been silent.

I have received a report from Robert Hoard in Topeka where (as he arrived at work) last Monday, May 18, he noted emergence holes and cast skins (exuvia) in a flower bed next to his parking lot. The likely scenario is that the periodicals emerged some evening(s) between Friday through Sunday when daytime temperatures were high 70's and low 80's. Although he has yet to see any adults, they are likely nearby, lying low, perhaps hidden in and under the dense plant foliage.



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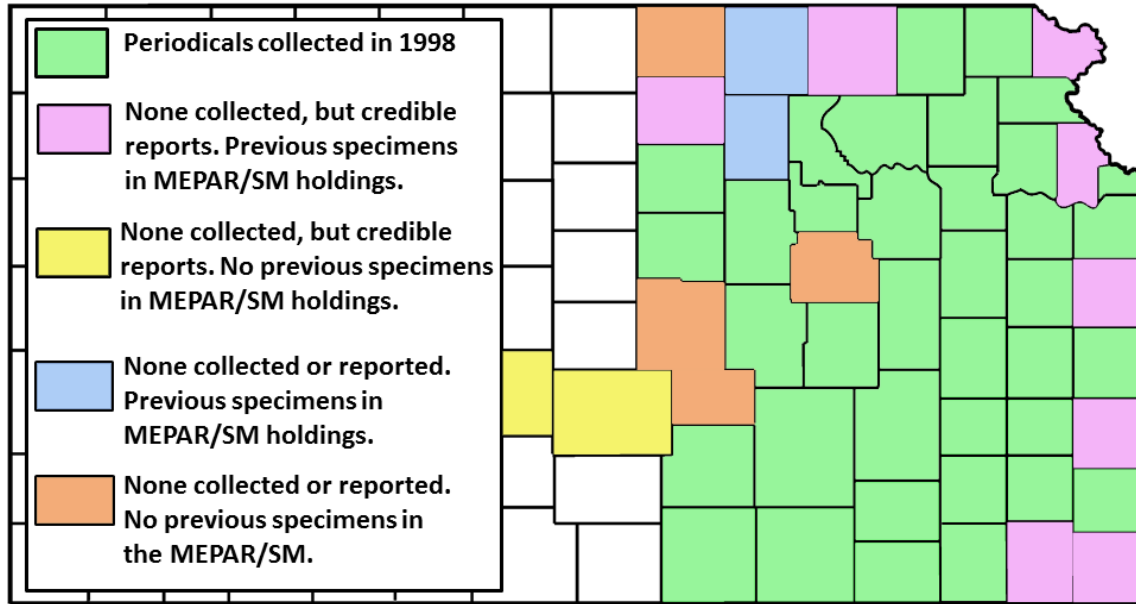
In order to somewhat quickly determine a rough estimate of numbers of emerged periodicals, Robert placed a 1 m² grid over a portion of the flower bed ---- counting 53 holes over a smaller sub-grid area. It will be interesting keep this area under observation to see if what initially emerged was just the tip of the iceberg for the 1 m² area. (This image can be greatly enlarged should you choose to do so --- an exercise for making a full count. An extrapolation could then be performed to obtain the estimated number of periodical cicadas per/hectare --- -- or if to be more meaningful, convert to a per/acre basis).



Looking at the projected mid-to-high 70s/low 80's for Memorial day through next Saturday, periodical cicadas should begin popping out like popcorn in a popcorn maker. I would appreciate my phone ringing off-the-wall (yes, still a land-line user ---- 785-532-4752) as well as e-mail messages (rbauernf@ksu.edu) reporting periodical cicada activities. I would especially be appreciative of reports from the counties in yellow, orange, blue and pink.

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Bob Bauernfeind

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Insect Diagnostic Laboratory Report

<http://entomology.k-state.edu/extension/diagnostician/recent-samples.html>

Eva Zurek

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Sincerely,

Robert J. Bauernfeind
Extension Specialist
Horticultural Entomology
phone: 785/532-4752
e-mail: rbauernf@ksu.edu

Raymond A. Cloyd
Professor and Extension Specialist
Horticultural Entomology/Integrated Pest Management
Phone: 785-532-4750
Fax: 785-532-6232
e-mail: rcloyd@ksu.edu

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Jeff Whitworth
Extension Specialist
Field Crops
phone: 785/532-5656
e-mail: jwhitwor@ksu.edu

Holly Schwarting
Research Associate
Phone: (785) 532-4739
e-mail: holly3@ksu.edu

Sarah Zukoff
Assistant Professor/Extension Entomologist
Kansas State University
Southwest Research and Extension Center
4500 East Mary St.
Garden City, Kansas 67846
Phone: 620-275-9164
Fax: 620-276-6028
Cell: 620-290- 1111
email: snzukoff@ksu.edu

Eva Zurek
Insect Diagnostician
Phone: (785) 532-4710
e-mail: ezurek@ksu.edu



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