

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel



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Wheat Head Armyworm

As wheat harvest approaches, it is probably wise for farmers to be prepared for encounters with the wheat head armyworm. Larvae of the first generation are now growing rapidly and can be best observed in morning and evening hours hanging from the awns of wheat heads and chewing the kernels. These will emerge as moths over an extended period in June and July, laying eggs on summer grasses which will give rise to a second generation. Formerly an occasional pest, this insect has become more of a consistent problem over the past five years, although the reasons for this are not clear.

The larvae caught up in harvested wheat pose no threat to the stored grain – they will either die or emerge as moths and disperse. However, the farmer is at risk of having wheat downgraded if a load contains more than 10 'insect damaged kernels', or IDK, per 100 grams upon delivery to the elevator. The problem is caused by 'tunneling' of wheat kernels by young wheat head armyworm larvae that leaves many kernels partially consumed and with damage that is superficially indistinguishable from that caused by stored product pests. Ironically, it is not the damage to the kernels that is the true concern, but the relationship between damaged kernels and finding insect fragments in the grain. IDK caused by stored product pests such as lesser grain borer and weevils tends to correlate well with contamination of the wheat with parts of these insects. These pests feed inside the wheat kernels and thus can be hard to remove from the grain prior to milling leading to insect fragments in flour, but this is not true for wheat head armyworms that are external feeders.

There is no economic threshold for wheat head armyworm in standing wheat, nor are there any remedial treatments available. Damage only becomes evident when it is too close to harvest to apply an insecticide because of preharvest interval limitations, and it is doubtful whether there would be any return on such an investment in any case. We do know that damage tends to be concentrated around field margins, such that the first load harvested is the one most at risk of a downgrade. In light of this, growers could scout fields for damage prior to harvest and, if appreciable armyworm activity is noted, opt for a harvesting pattern that reduces the downgrade probability: Harvesting the field in four sections will dilute grain from the periphery into four different loads instead of concentrating it in one.

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J.P. Michaud and Phil Sloderbeck

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1-Month AC ----- AC = After Cutworms

In Kansas Insect Newsletter #7, I stated that although a tomato plant was the victim of a cutworm attack, its ability to put out axillary shoots from the remaining leaves/stems would like result in its recovery and eventual production of tomatoes as the season progressed. Recovery is in progress with blooms being produced (Figure 1).

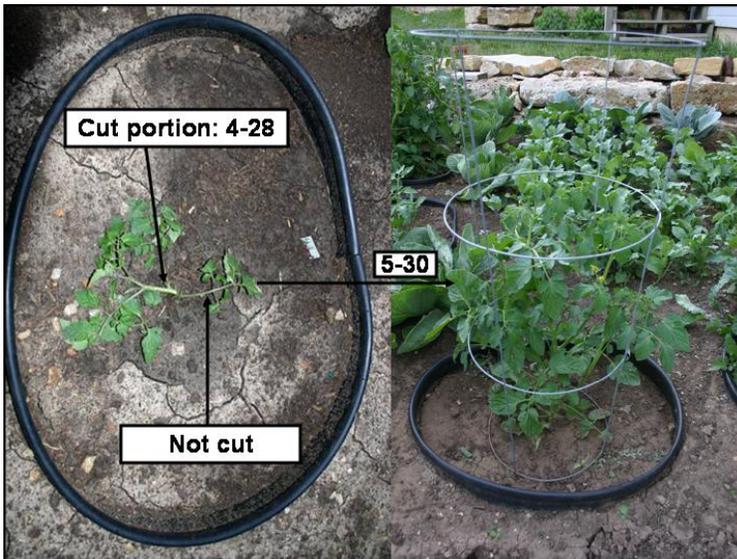


Figure 1

As also stated in KIN #7, cabbage, broccoli, cauliflower and brussel sprout plants are less forgiving. After a cutworm severs a young plant, that plant is finished. As described in Kansas Insect Newsletter #9, a cabbage plant was cut. While the plant still lives, it will not produce a head, as compared to a “sister-plant” which was not cut.

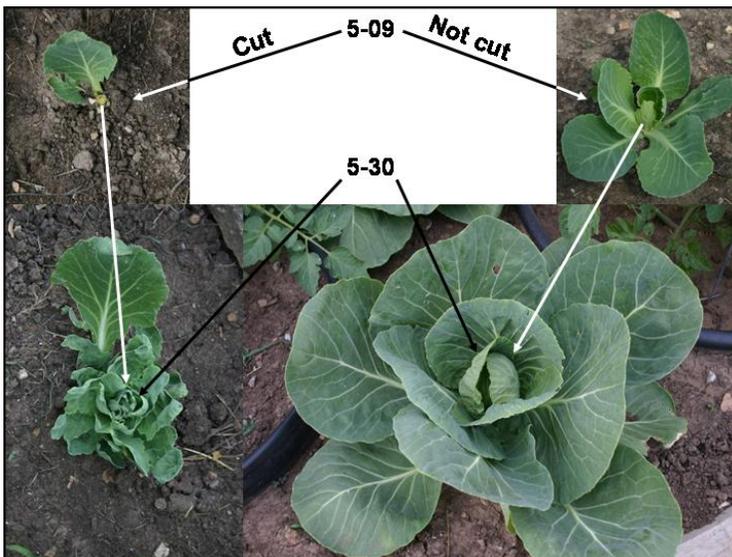


Figure 2

Grasshoppers

Sometimes, grasshoppers can be so overwhelming and destructive that the only way to deal with them is to poke a little fun at them (Figure 3).



Figure 3

Not every grasshopper is a “bad grasshopper”. While a person may note a lot of grasshopper activity when walking along fields or in native grasslands, most have very restricted host ranges and therefore do not constitute a threat to field and garden crops. Yet, there are several opportunistic species which have a very wide host range and therefore are destructive feeders. Three of the most commonly encountered “garden pests” are the larger two-striped grasshoppers and differential grasshoppers (1.5 inches in length) and the smaller redlegged grasshoppers (approaching only 1-inch in length)

(Figure 4).

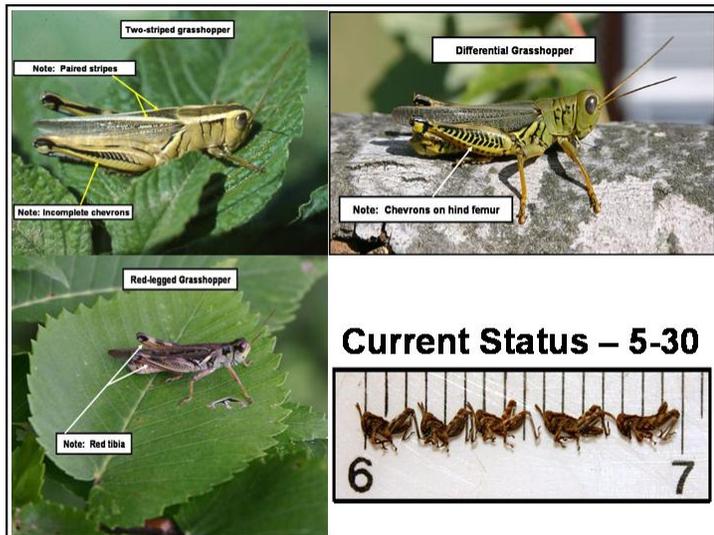


Figure 4

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The adult females of these produce eggpods which they deposit in the soil in the fall of the year. The warming of the soil in spring hastens the completion of embryonic development. Nymphs emerge in mid- to late May. Given their “current” small size, they generally go unnoticed. However, if a person begins noticing small holes appearing in the leaves of various springtime garden crops, closer observations may reveal the presence of the small nymphs --- currently only 3/16-inch in length (Figure 4).

Grasshopper nymphs seem to suddenly appear out of nowhere. Nymphs will consume increasingly greater amounts of foliage as they grow. Therefore, insecticide treatments may be “the means” with which to address the situation. Various active ingredients (carbaryl, cyfluthrin, esfenvalerate, lambda-cyhalothrin and permethrin) are contained in a wide array of products marketed for use by home gardeners. Visit retail outlets to determine which products are locally available. Make note of (and observe) post-treatment harvest intervals. Due to the relative non-persistence of insecticidal products, additional insecticide applications may be required if there are continued movements of grasshoppers into garden areas.

The popular protozoan *Nosema locustae* is often promoted/touted as the “organically acceptable approach” for grasshopper control. Marketed (in Kansas) under the tradenames Nolo Bait™ and Semaspore™, if used under proper circumstances, they can be efficacious. However, these products were designed for use treating large acreages of rangeland as a long-term control strategy. Comparable results may not be achieved when used as an approach for grasshopper control in home gardens.

Why reinvent the wheel? Spraying for bagworms

As you read the following, you will likely be experiencing the phenomenon of déjà vu. In this instance, it can be explained: you saw it 2 weeks ago in KIN #10. It has merely been copied and pasted into this week's KIN - ---- why reinvent the wheel when cut-and-paste works?

From KIN #10: If a person adopts a **2-spray program**, apply Spray 1 during last week of May or first week of June to control the first half of the egg hatch. Spray 2 should be applied during the last week of June or first week of July as a clean-up of larvae from the latter half of the hatching period. For a **1-spray program**, wait until the hatch has been completed and apply the single spray treatment at the end of June or beginning of July. While the earliest hatched bagworms will have attained some size during the time that they were allowed to feed, they will still be small enough that their feeding damage during the period of lush early-season foliage is virtually indictable.

A dilemma which homeowners face is selecting an insecticide from the 528 products registered (in Kansas) for use against bagworms. At least 8 active ingredients (number of products containing the AI) include: acephate (75), bifenthrin (201), *Bacillus thuringiensis* for caterpillars (39), carbaryl (62), cyfluthrin (93), lambda-cyhalothrin (121), malathion (48), permethrin (735) and spinosad (29). Homeowners must visit various local

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retail outlets in their area and speak with store personnel to determine which product(s) they market for use against bagworms.

People often ask, “Which product is most effective against bagworms?” While some might be a tad more effective, none provide “magic results”. Rather, more important is how products are used. As described above, **timing** is critical. Insecticides are most effective against the small early instar bagworms. Sprays against large bagworms in late July and into August will be less efficacious. **Thorough coverage** is a second important consideration. Merely applying a mist-like treatment to the outer periphery of a tree/shrub kills only those bagworms so exposed. Rather, insecticides need to be delivered deep into the central portions of the trees and shrubs. Lastly, do not just treat the most heavily infested trees and shrubs, **but also treat ALL those which are adjacent**, but currently may have lesser numbers of bagworms.

Bob Bauernfeind

Carbofuran; Final Tolerance Revocations

EPA is revoking all tolerances for carbofuran. The Agency has determined that the risk from aggregate exposure from the use of carbofuran does not meet the safety standard of section 408(b)(2) of the Federal Food, Drug, and Cosmetic Act (FFDCA).

EPA is revoking all of the existing tolerances for residues of carbofuran. Currently, tolerances have been established on the following crops: Alfalfa, forage; alfalfa, hay; artichoke, globe; banana; barley, grain; barley, straw; beet, sugar roots; beet, sugar tops; coffee bean, green; corn, forage; corn, grain (including popcorn); corn, stover; corn, sweet, kernel plus cob; cotton, undelinted seed; cranberry; cucumber; grape; grape raisin; grape, raisin, waste; melon; milk; oat, grain; oat, straw; pepper; potato; pumpkin; rice, grain; rice, straw; sorghum, forage; sorghum, grain grain; sorghum, grain, stover; strawberry; soybean, forage; soybean, hay; squash; sugarcane, cane; sunflower, seed; wheat, grain; wheat, straw.

This final rule is effective August 13, 2009. Written objections, requests for a hearing, or requests for a stay identified by the docket identification (ID) number EPA-HQ-OPP-2005-0162 must be received on or before July 14, 2009, and must be filed in accordance with the instructions provided in 40 CFR part 178.

For more information refer to: <http://www.epa.gov/fedrgstr/EPA-PEST/2009/May/Day-15/p11396.htm>

Phil Sloderbeck

Hessian Fly

Dr. Gary Cramer, Sedgwick Co. Extension Agent is still monitoring Hessian fly pheromone traps. From 28 May – 2 June, one of the traps contained over 500 adult Hessian flies. This is the first sampling for Hessian flies in the spring in Kansas using pheromone traps so we are not exactly sure what this adult activity may correlate to, i.e. increased lodged wheat in the next two weeks in the area, large potential overwintering

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populations, increased potential for fall infestation, etc. It may be that this late spring activity occurs every year and this is the first time we've had the technology to detect and monitor it. We will conduct this sampling for the next couple of years with other associated research to try to determine if this spring activity is typical and what it may mean to Kansas wheat producers.

Jeff Whitworth

Potato Psyllid Update

The potatoes in western Kansas are blooming and the Potato Psyllid survey detected the first adult in the sticky traps in the May 18th to May 26th sampling period. No eggs or nymphs had been detected as of May 26th. The results of the June 1, sample should be available soon. Results of the survey are being posted on the web at: <http://www.entomology.ksu.edu/psyllidsurvey>.

Sunflower Head Moth Prediction

April showers bring Mayflowers, but do they also signal future problems for Kansas's crops? Several years ago Les Depew sampled various wild flowers and found low levels of sunflower head moth in several different species.

This year, parts western Kansas received unusually heavy rainfall in April and the pastures are now filled with wildflowers, some of which are known to serve as hosts for the sunflower moth. Thus, this could signal the potential for high numbers of sunflower moths in cultivated sunflowers later this summer.

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Kearny Co. Kansas, May 27, 2009



Meade Co. Kansas, May 29, 2009

It is unclear if the sunflower moth can over winter in Kansas. Speculation is that it migrates into the state in the spring from Texas or Mexico. However, the presence of wildflowers in the spring would probably allow the sunflower moth to complete at least one generation before cultivated sunflowers begin to bloom, which could greatly increase population levels later in the season on the cultivated sunflowers.

Many years' growers are able to manage sunflower moth with a single application of insecticide applied during early bloom. However, some years, when populations are high a single application does not provide adequate control. This year may be one of those years. If the sunflower moth can use wildflowers to increase population levels, and other weather or environmental factors are favorable, multiple applications may be

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needed to provide adequate sunflower moth control, especially on early, planted sunflowers. Sunflower growers will want to be alert this season and monitor sunflowers

As soon as they see any sign of blooming to determine if head moths are present. If moths are abundant they will want to spray once as the field begins to bloom and then spray again in 5 to 10 days and possibly spray a third time if moths are still active after the second spray or the field is blooming unevenly.

Alfalfa Weevil Damage to Soybeans

This week I got one of those phone calls that makes you say: “I have got to see this.” One would think that after nearly 28 years, that one would have seen most of the potential insect problems on the major crops grown in the area, but when I got a call about alfalfa weevil adults feeding on soybeans I realized that there are always new things to see.

The description of the problem over the phone sounded odd, but just plausible to make one wonder if this could actually be happening. Sure enough, when I got to the field, the damage to the soybeans was just what you might expect if you have ever seen adult alfalfa weevil damage on alfalfa. There was some minor leaf feeding, heavy feeding on the cotyledons, and chewing on the stem above the soil surface. On some plants the stems were completely severed (or possibly they had just been weakened and then broken over by the wind).



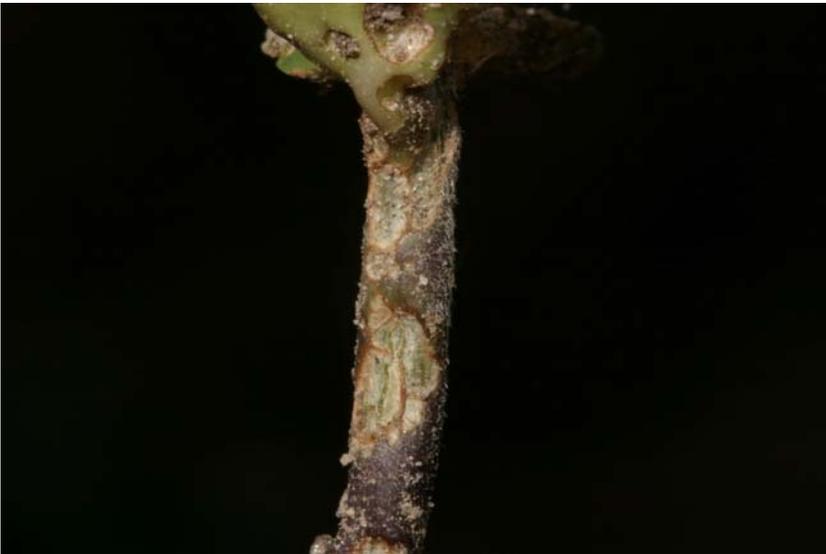
Minor leaf feeding on soybeans from alfalfa weevil adults.

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Damage to cotyledons of soybean plant from alfalfa weevil adults.



Chewing along soybean stem from alfalfa weevil adults.

I think the reason that even though this crop and this pest are common in the area, this problem is not really very common, is that we seldom plant soybeans directly into alfalfa stubble. This practice was really not an option until we developed Roundup Ready soybeans, and even then most times you could probably do this and not have a severe problem. However in this case everything combined to create ideal conditions for the weevil to be present at just the right time to feed on the tender soybean seedlings. The soybeans were planted directly into the growing alfalfa and then the alfalfa was sprayed with a herbicide. If the planting date, or the weevil emergence date, had been slightly different then the problem would have probably been avoided.

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In hindsight, planting corn or sorghum rather than soybeans, killing the alfalfa several days prior to planting the soybeans, or spraying the alfalfa with an insecticide to kill the alfalfa weevil larvae prior to planting the soybeans could probably have avoided the problem.

At this point there was not a clear-cut decision on how to address the problem. If caught early one could have possibly sprayed and controlled the weevil, but with the heavy residue on the ground the percent control may not have been enough to eliminate the problem. Enough of the stand was missing and the remaining plants had enough stem damage that the soybeans probably needed to be replanted. However, if one replanted, how long would the feeding continue and would one need to spray to try to reduce the weevil numbers, before replanting. Chances are that the weevils are in the process of leaving the fields, but how can you be sure. Or should one replant to corn, which will be late and probably not achieve maximum yield potential. None of these are really cheap or good options.

The take home message would seem to be that if you are considering planting soybeans directly into alfalfa residue, make sure that there are not alfalfa weevil present prior to planting.

Phil Sloderbeck

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Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostician Laboratory from May 29th to June 04th

May 29 2009 Atchinson County – Male Lone star tick on human
June 01 2009 Riley County – Male Lone star tick on human
June 02 2009 Wyandotte County – Bat bugs in home
June 02 2009 Leavenworth County – Female (engorged) Lone star tick on human
June 03 2009 Saline County – Leaf beetle larvae in and around mulberry tree
June 03 2009 Riley County – Brown dog tick on human
June 04 2009 Harvey County – White-lined sphinx caterpillars in field
June 04 2009 Labette County – Possible black fly in yard
June 04 2009 Riley County – Possible leaf beetle feeding damage in tomatoes
June 04 2009 Riley County – Noctuid moths and eggs in home

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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