

Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel



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Potato Leafhoppers Alfalfa

Sampled alfalfa fields last week and noted an abundance of potato leafhoppers. Last week, actually 10-12 Sept., all the potato leafhoppers we collected were adults. This is really later than we have noted leafhoppers hanging around in alfalfa fields in KS, as they usually have disappeared by mid-to late August. They overwinter in the Gulf Coast states, not KS. So, because all were adults last week we thought the southern migration was about to begin. However, we sampled an alfalfa field in central KS, on 16 Sept., and the leafhoppers were still plentiful (29/10 sweeps, which exceeds the treatment threshold). Also, and surprisingly, we found several nymphs in the samples which means some leafhoppers will be in those fields even if the adults migrate south, as the nymphs do not have wings. This leafhopper feeding is causing a lot of classic "hopper burn" (see photo). Therefore, if you are planning on swathing once more this fall, and you have significant leafhopper populations, then swath it a.s.a.p., which should eliminate the problem. If you aren't, or can't swath soon, monitor your fields for leafhoppers. They should, in my opinion, be migrating south soon, but if there are enough nymphs, significant damage could occur. Potato leafhoppers have proven to be very susceptible to all the registered insecticides, just in case an application is called for.



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Defoliators in Soybeans/Sorghum

There are still a few defoliators in soybean fields-especially the later planted/double cropped beans. But we have not seen any populations significant enough to cause economic damage and many fields are rapidly maturing past the stage where they may be susceptible. Also, have not seen any significant populations of corn earworms (sorghum headworms and/or soybean podworms) in either sorghum or soybeans and, again, many of these fields have matured past the susceptible stage.

Jeff Whitworth

Holly Davis

Exploring the iWheat Web App

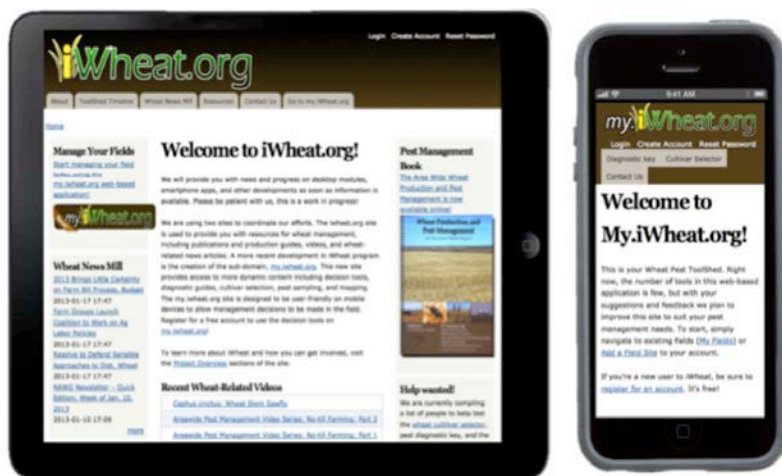
We would like to introduce a new tool available to wheat stakeholders in our state and the Great Plains. The iWheat project is a regional effort funded by the USDA that works to facilitate a long-term, area-wide management program for winter wheat in the Southern Great Plains. Project collaborators include Kansas State University, Oklahoma State University, Colorado State University, University of Nebraska-Lincoln, Texas A&M AgriLife, and USDA-ARS. A primary objective of this project is to streamline access to science-based management resources for wheat by housing them under one web-based application (iWheat.org) to alleviate the need for producers to sort through the plethora of wheat management information available online. The information available to you at the entomology website (www.entomology.ksu.edu) is incorporated into this site, but we have been working on improving the “user experience.” Here’s what you’ll find on the iWheat site:

1. [Wheat Production and Pest Management Guide](#): Find information and bookmark specific chapters and pages for quick referencing.
2. [iWheat Video Series](#): A showcase of research and Extension videos relating to wheat management, which can be filtered by topic and state.
3. [Factsheets database](#): Fact sheet publications are searchable by pest, crop, and state. They also link to diagnostic keys and the variety selector in the my.iwheat.org site. For example, a user can go through the variety selector and view a variety. The characteristics that the variety is rated for also appear on the varietal page. If the variety is rated for greenbug, the user can follow the link to the greenbug pest profile page. Once on the profile page, there is an option to view all greenbug fact sheets currently in the database.
4. [Wheat News Mill](#): Feed aggregator that displays the latest wheat-related articles from newsfeeds around the country.

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Figure 1. Screenshots of the iWheat and my.iWheat homepages.



An associated site, my.iWheat.org, serves as a free, mobile-device friendly, decision support system for wheat stakeholders. This system allows field managers to receive immediate feedback on actual field observations across the region, which will provide us a means of directing information to crop managers in a timely manner. Registered users can access the following modules:

1. [Arthropod Diagnostic Key \(Fig. 2A\)](#): An arthropod pest key is available and interfaces with other tools by linking pest to the variety selector to show cultivars with available resistance and relevant factsheets for more information. In addition, pest profiles are linked to sampling methods when available. Pests are searchable by pest type or plant damage symptoms. Beneficial insects are linked with their target pests.
2. [Pest Sampler \(Fig. 2B\)](#): Pest sampling plans and their associated decision-trees are embedded into the sampler module to simplify the user experience. For example, the [greenbug sampling plan](#) (Glance n' Go, developed by Oklahoma State University) allows growers to retrieve treatment recommendations based on sampling input that is linked to their wheat field, which are printable forms. Not only does the pest sampler result in management recommendations, it stores and shares user data to a mapping module for real-time monitoring of pest populations and treatment decisions can be made on any mobile device.
3. **Proposed mapping features (Fig. 2C)**: As user data is collected, regional pest maps can be created to show current pest populations detected in wheat fields. This information will be used to alert users when potential pest risks have entered into their counties. To protect the privacy of users, presence/absence data will be shared at the county level only, or shown as treatment information on a scale-limited map.
4. [Variety Support System \(Fig. 3A\)](#): The system currently lists 2,050 varieties, which are searchable by state, agronomic traits, yield performance, pest resistances, and other characteristics. Display tables show varieties that are filtered by selection criteria and allow to user to browse and compare varieties. Users can click on individual varieties to see all performance ratings. We continue to enhance the system by adding new features. For example, the Kansas Crop Improvement Association has recently funded the development of a Kansas seed dealer directory that will be incorporated into the Variety

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Support System. The directory will function by listing dealer information that is based on a grower's farm location and variety interests. Once a grower decides on a variety to plant, the page associated with that variety displays links to local Kansas dealers having the selected variety in their inventory. Providing a link to certified seed dealers through the Variety Support System module provides instantaneous access to seed distributor information like availability or contact information to help growers get the best possible seed for their production.

5. **Dynamic field history (Fig. 3B):** Users create fields by designating field location and size. Field history, including information on the cropping system (acres/tillage type/irrigation/soil type) and soil sampling/nutrient testing, can be added to field pages. In addition, field sites will store variety planted, planting dates, pest sampling data, treatment decisions, and reporting applications (fertilizer, seed treatment, pesticide). The "Take Sample" and view "My Samples" tabs are used to sample insect pests for treatment decisions and users can see a map of all samples taken along with summarized reports for only their fields. This data is not shared with other users of iWheat.

Still to come! We will highlight each of these modules in a series of newsletter articles to give an in-depth look at how each module works and what the advantages are to the user.

Figure 2. iPhone screenshots of my.iwheat.org modules for the Arthropod Diagnostic Key (A), the Pest Sampler (B), and proposed mapping features (C).

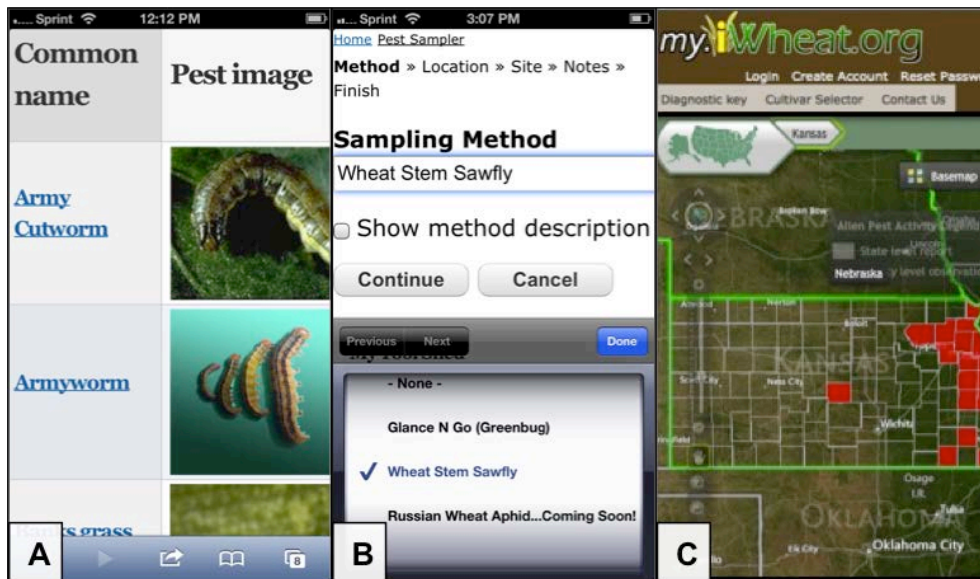
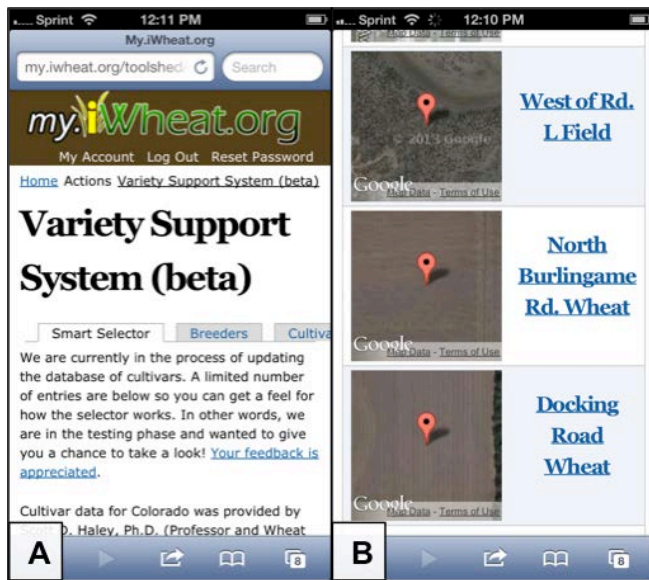


Figure 3. iPhone screenshots of my.iwheat.org modules for the Variety Support System (A) and dynamic field history (B).

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Brian McCornack

Wendy Johnson

Why did the White-lined sphinx caterpillar cross the road?



The last couple of weeks, these caterpillars have been seen roaming the streets in SW Kansas.

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It's hard to miss these finger-sized, brightly colored worms as they cross the road by the hundreds. So why are they crossing the road? To get to the other side where there is more food, of course! Many producers are spraying herbicide in and around fields in preparation for planting fall crops. The white-lined sphinx eats Kochia, pigweed and various other weed species which are common nuisance species in fields and pastures. Once the caterpillars' food declines from the herbicide, the insects will migrate to the nearest green patch looking for food. Most of the time, these caterpillars will completely ignore crops and will concentrate on these weedy plant species. There are a few reports in the literature that recount brome grass as an occasional target of these caterpillars. Because of this, these caterpillars are generally regarded as beneficial!



The white-lined sphinx caterpillars are quite variable, but they usually will have a speckled head and dorsal stripe.

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The adults of the white-lined sphinx are very pretty moths that resemble hummingbirds. They can be spotted dashing about, stopping only for brief moments to nectar on flowers. These moths are common at dusk as well as during the day.

Sarah Zukoff – Southwest Research and Extension Center

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Insects common in alfalfa in late summer to early fall



The alfalfa butterfly is a common resident of southwestern Kansas throughout August and September. They can be found nectaring on just about anything blooming in the region by the hundreds to thousands. Although these butterflies are beautiful, they can be damaging to alfalfa. The entire lifecycle of this butterfly is completed in about three –four weeks, and they will have multiple generations per year. Their lifecycle is closely related to the cutting cycle of alfalfa. Pictured is the complete lifecycle of the alfalfa butterfly. Note that these butterflies can be yellow, white or orange colored.

Parasitic wasps can help keep these pests in check, but if 10 caterpillars are found per sweep in established alfalfa, control may be necessary unless the alfalfa will be cut within a few days. In newly seeded alfalfa, the alfalfa caterpillar can quickly consume the whole plant. While there is not an officially established threshold for

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this stage, if one larvae per two plants are found, control may be necessary if no parasitized larvae are found. To check for parasitized larvae, cut the head off the caterpillar and gently roll it from the tail to the head. The wasp larvae should be pushed out and can be seen. Spraying insecticide onto parasitized caterpillars will greatly lower the number of beneficials later in the season. Note than several of the insecticides labeled for control of this and other lepidopteran pests can be extremely hazardous to bees. Be sure to check the label for additional info. and warnings.

*To check the relative toxicity of an insecticide to bees, see here: http://pubs.ext.vt.edu/456/456-016/Section-1_Protecting_Honeybees.pdf



Blister beetles can be prevalent throughout the growing season in alfalfa. The first cutting will usually occur early enough to escape invasion of these beetles, however caution should be taken to ensure none are present if

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feeding to horses. The amount of toxin can be variable between species with some being far more toxic than others. The speckled and the black blister beetle (pictured above) are common in alfalfa in late summer and fall. Contact with adult beetles can cause blisters to human skin and can cause serious adverse health effects in horses. Interestingly, the larvae of these beetles feed on grasshopper eggs! Outbreaks of blister beetles can be related to earlier outbreaks of grasshoppers.



Grasshoppers will feed on the tender new growth, flowers and seed pods of alfalfa. Often controlling grasshopper nymphs is easier than trying to control for adults as the adults will readily fly away during insecticide application.



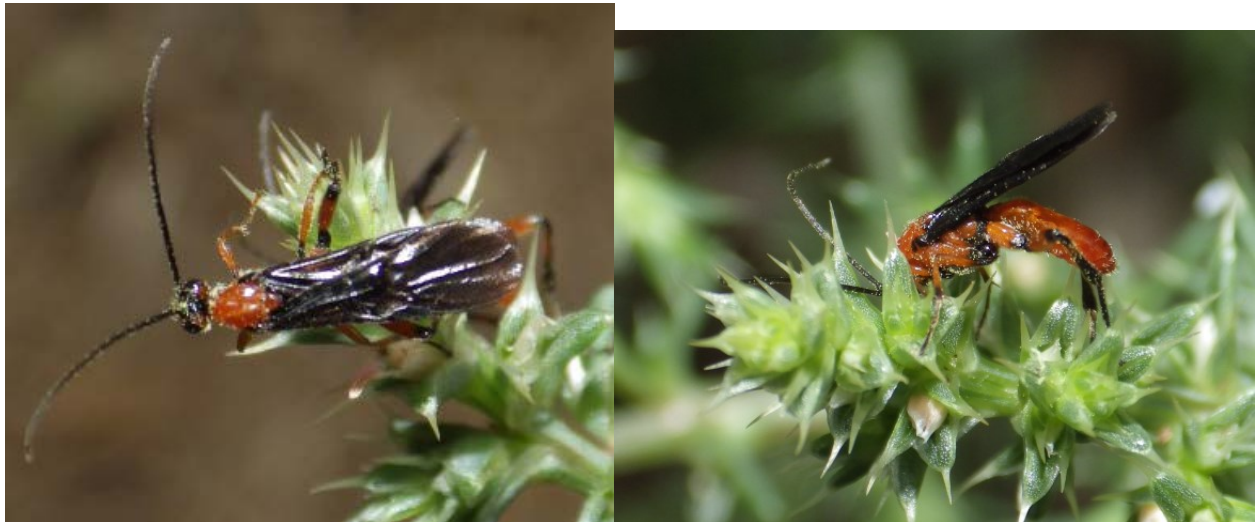
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Ladybugs are excellent predators that eat a variety of eggs, aphids, and other small soft bodied creatures, but they can be on the menu as well. Here, this ladybug has been parasitized by a very interesting braconid wasp. This wasp lays its egg inside the young ladybug larvae. It later pupates out of the adult beetle and will actually use the parasitized beetle as a shield.



If you spot these cocoons, be assured that parasitic wasps (*Cotesia sp.*) are hard at work in your alfalfa. These wasps will lay eggs inside caterpillars and the larval wasps eat the caterpillar from the inside out. The larvae burrow out of the dead caterpillar and soon after, spin silken cocoons. Later they hatch and will fly off to lay eggs into another unsuspecting caterpillar.



Braconid wasp larvae are beneficial, internal parasites of insect eggs and larvae and are excellent to have around in any garden or crop. The adults are commonly seen nectaring on a variety of weeds species and alfalfa flowers in and around the alfalfa fields throughout the year.

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Beet armyworms are common in Southwest Kansas in a variety of crops including cotton and alfalfa. The beet armyworm can be differentiated from the alfalfa caterpillar by the presence of a black spot just behind the head on either side of the beet armyworms body.



Tunnels made by the fly larvae of the alfalfa leaf miner, can be seen in this alfalfa leaf. The dark trail is frass left behind as the larvae tunnel in-between the leaf's upper and lower layers. Damage made by this pest is usually minor and insecticidal control is usually not recommended.

For additional information on management and control options for insects in Kansas alfalfa see:

<http://entomology.k-state.edu/extension/insect-information/crop-pests/alfalfa/>

Alfalfa Pest management guide can be found at:

<http://www.ksre.ksu.edu/bookstore/pubs/MF809.pdf>

Sarah Zukoff – Southwest Research and Extension Center

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Sticky Business: Sugarcane aphids (*Melanaphis sacchari*) causing problems in Texas and Oklahoma sorghum fields

Colleagues from Texas and Oklahoma are reporting a new aphid species in sorghum, which has made its way across most of Texas this summer. Although the sugarcane aphid (*Melanaphis sacchari*) is not necessarily new to the United States, this appears to be an emerging pest of sorghum in Central Great Plains. It was first introduced into Florida in the mid-1970s and made its way to Louisiana by the early 1990s. It is thought that this species originally came from Africa. The quick movement across Texas may have been facilitated by persistent droughts and the increase in sorghum acreage due to cotton crop failures (personal communication, Dr. David Ragsdale, Texas A & M AgriLife). The aphids are bright yellow and colonies are packed so tight that at first they don't look like aphids (see image below). Plus, they produce a lot of honeydew! This has been the major issue. The honeydew clogs harvest equipment making it nearly impossible to harvest sorghum in some fields. Sugarcane aphid is resistant to pyrethroids, which limits control options for growers. This aphid looks very similar to the yellow sugarcane aphid (*Sipha flava*), which is found in certain parts of Kansas.



Although small, aphids can pack a serious punch given their short developmental times and high rates of reproduction. When you combine these factors with limited rainfall and high temperatures, this aphid became a big problem in parts of the Central Great Plains over the past few weeks. Recall, this aphid moved across Texas in one summer! That's no small feat. This aphid was first spotted near Beaumont, TX (southeast corner of the state) and most recently was reported in Paris, TX along the Red River and now Oklahoma. There have been no reports of this species in Kansas to our knowledge, but we are interested in live aphid samples from infested fields. If you have any questions about this pest, please contact Dr. Brian McCornack (mccornac@ksu.edu, 785-532-4729). Photo credit: Texas A&M AgriLife Extension.

Brian McCornack

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Insect Diagnostic Laboratory Report

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

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