

# Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel



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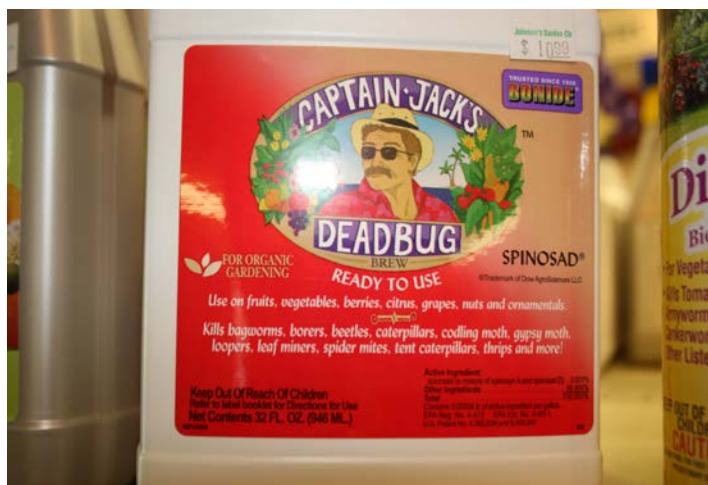
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## Get Ready For Bagworms!

Although there is likely to be a delay in egg-hatch due to the environmental conditions we have experienced this spring; it is time to get ready to deal with that “infamous” insect pest known as the bagworm (*Thyridopteryx ephemeraeformis*). Bagworms will eventually be out-and-about feeding on trees and shrubs; both broadleaf and evergreen. So, how can you alleviate the damage caused by bagworm caterpillars this year? Well, you can initially start by “hand-picking” any bags formed last year, before the overwintering eggs hatch, and place them into a container of soapy water. This is very therapeutic and, if feasible, will quickly remove large populations before they cause significant plant damage. You may want to consider having a “bagworm hand-picking party” with prizes awarded to individuals that collect the most bags.



For those less interested in the pleasures of “hand-picking,” there are a number of insecticides labeled or registered for the control/suppression of bagworm populations including those with the following active ingredients (trade name in parentheses): acephate (Orthene), *Bacillus thuringiensis* subsp. *kurstaki* (Dipel/Thuricide), cyfluthrin (Tempo), lambda-cyhalothrin (Scimitar), trichlorfon (Dylox), indoxacarb (Provaunt), chlorantraniliprole (Acelepryn), and spinosad (Conserve). Many of these active ingredients are commercially available and sold under different trade names or generic products.



However, several insecticides may not be directly available to homeowners. The key to managing bagworms with insecticides is to make applications early and frequently enough in order to kill the highly susceptible

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young caterpillars that are feeding aggressively on plant foliage. Older caterpillars that develop later in the season, in the bags, may be 3/4-inches long, and are typically more difficult to kill. In addition, females tend to feed less as they prepare for reproduction, which reduces their susceptibility to spray applications and any residues. The bacterium *Bacillus thuringiensis* subsp. *kurstaki* is active on young caterpillars; however, the active ingredient

must be consumed to be effective, so thorough coverage of all plant parts and frequent applications will be required to avoid having to deal with later stages. This compound is sensitive to ultra-violet light degradation and rainfall, which reduces any residual activity. Spinosad, which is the active ingredient in a



products (including Borer, & Leafminer Spray; Captain Jack's DeadBug Brew; and Monterey Garden Insect Spray) works by contact and ingestion (stomach poison); however, it is most effective when ingested and it may be used against older or larger bagworm caterpillars. Cyfluthrin, lambda-cyhalothrin, trichlorfon, chlorantraniliprole, and indoxacarb may be used against both the young and the older caterpillars. However, again, thorough coverage of all plant parts, especially the tops of trees and shrubs, where bagworms commonly initiate feeding, and frequent applications are required. The reason why multiple applications will be needed when bagworms are first detected is because bagworms may "blow in" (called 'ballooning') from neighboring plants. If left unchecked, bagworms can cause significant damage, thus ruining the aesthetic quality of plants. In addition, they may actually kill plants, especially evergreens since they don't usually produce another flush of growth, and newly transplanted small plants.

number of homeowner Bagworm, Tent Caterpillar

If you have any questions regarding the management bagworms contact your county horticultural agent, or university-based or state extension entomologist.

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Raymond Cloyd

## A Prickly Pairing: cacti and the moths that eat them

The prickly pear (*Opuntia sp.*) should be a familiar sight for anyone who has spent time in the high plains of Kansas. These armored plants are native to the state and do quite well in arid habitats. In fact, during droughts like the one we are experiencing now, the prickly pear can become quite a nuisance in rangeland.

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Prickly pear can become quite a nuisance in rangeland. Photo by Anthony Zukoff

When it comes to controlling prickly pear, aside from keeping rangeland from being overgrazed and thus allowing the pear to flourish, there is help available from a rarely noticed Kansan, the North American cactus moth. There are two species that are possible in Kansas, *Melitara dentata* and *Melitara prodenialis*.

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Female moths lay “egg sticks” on the spines of prickly. Photo by Ignacio Baez, USDA Agricultural Research Service

This unassuming moth’s life depends upon the prickly pear. Female moths lay “egg sticks” on the spines of prickly pears during summer and early fall. Each stick can have anywhere from 20 to 100 eggs. Once these eggs hatch, the cactus moth caterpillars get to work boring into the prickly pear pads. Once inside, the caterpillars hollow out the pad and move on to a fresh one. This continues until winter when the larvae become less active. Feeding begins again the following spring and eventually new adults emerge around July to start the process all over again. Feeding by the caterpillars effectively destroys the prickly pear pads and, depending on the amount of feeding larvae, even the entire plant. Between 1939 and 1941 around Hays, Kansas, these moths were observed to reduce overabundant prickly pear stands by 50-75% or more. So, it turns out that this little moth can be quite effective at controlling nuisance prickly pear.

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A young N. A. cactus moth larva, *Melitara sp.*, on a prickly pear pad.

Photo by Anthony Zukoff

These moths, and others that feed on cacti, can be so effective that several species were actually evaluated for possible use as a biological control for noxious infestations of prickly pear in other parts of the world. One species in particular turned out to be tremendously successful in bringing Australia's prickly pear problem under control. The South American Cactus Moth, *Cactoblastus cactorum*, was released in Australia in 1925 and proceeded to free up millions of hectares of Australian rangeland and habitat from the grasp of an out of control prickly pear infestation. The same moth was later used to combat the cacti infestations in South Africa, the Caribbean, and even Hawaii.

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The invasive South American Cactus Moth, *Cactoblastus cactorum*. Photo by Susan Ellis, USDA APHIS PPQ

While the South American Cactus Moth has proven to be beneficial in areas of its release, it has now become an unexpected pest in North America. This moth was first detected in the Florida Keys in 1989, possibly brought in on cargo from the Caribbean. Since then, the moth has spread up the eastern seaboard as far north as Charleston, South Carolina and west along the Gulf coast as far as Louisiana. The westward spread of *C. cactorum* in the United States and Mexico could pose a serious threat to native species of prickly pear that serve important roles in our native plant communities. Additionally, this invasive moth could become a formidable agricultural pest in Mexico where prickly pear is cultivated as a food product.

Now that you are familiar with both the native (*Melitara sp.*) and invasive (*C. cactorum*) cacti-munching moths you can aid in the highly important task of keeping track of the South American Cactus Moth's progression and, hopefully, subsequent eradication before it flies out of control. While the adult moths of both species can be a bit non-descript and hard to differentiate, the good news is that their caterpillars are a world apart in appearance.

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A later instar N. A. cactus moth larva, *Melitara sp.*, on a prickly pear pad.

Photo by Anthony Zukoff

Report Sightings of the invasive S.A. Cactus moth here:

<http://www.gri.msstate.edu/research/cmdmn/>

As of yet, there are no known reports of the invasive South American Cactus Moth in Kansas or even very far inland from the coasts, but it is likely that the moth will continue to spread. If you observe caterpillars like the ones above feeding on prickly pear or are suspicious of any cacti damage (ornamental or otherwise), do not hesitate to contact your local extension office/entomologist.

*Sarah and Anthony Zukoff*

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## Corn Update – English Grain Aphids

Corn growing conditions have been excellent, at least throughout central KS. However, there is much concern relative to aphids on the growing plants, mostly on the underside of the leaves. All of the aphids, and aphid pictures, we have seen so far are English grain aphids (see photo).



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These aphids are common throughout the state most years, in wheat, but have never been observed in these numbers, especially on corn. They are general feeders on grasses and can be a serious problem on cereals in other parts of the world, but we have never seen densities at levels that impacted any crops. The aphids are feeding in wheat and apparently as the wheat matures (dries) they are migrating to more succulent hosts, i.e. corn now and maybe sorghum later. Insecticide seed treatments should be effective for 3-4 weeks after planting, which may be why we are mainly seeing infestations on 5-6 leaf-stage corn. There is no treatment threshold or economic injury level for English grain aphids in corn. However, the corn seems to be growing well and we couldn't even discern where the aphids were actually feeding on the leaves. Lady beetles and parasitic wasps will probably control these aphids in a timely fashion, thus continued monitoring without spraying (which will kill all beneficials also) is the recommendation at this time.

## Wheat Update - Aphids and Armyworms

As the wheat continues to senesce across the state, the plants are drying from the bottom up, leaving the most succulent parts in the flag leaf and developing berries. Thus, that is where we are finding both armyworms and aphids. This is where these pests can do the most damage very quickly also because they are feeding on the grain itself or the most critical parts of that grain, i.e. the flag leaf and/or stem. Aphids can feed on the developing berries, probably at least through the milk stage and maybe even through the soft dough

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stage, removing vital juices as they suck on the berries. Also, as they are feeding, they are producing honeydew, and if there are copious quantities of honeydew, this may interfere with harvest because of its stickiness, which may interfere with removing the grain from the head. Again, there is no treatment threshold for aphids feeding in the head, however, if there are enough (maybe 20+/head) and they are producing noticeable honeydew and the wheat is still not in the soft dough stage, an insecticide application may be justified. Also, if armyworms are feeding on the majority of plants, consuming leaf tissue as they move up the plant and have eaten, or are about to eat, the flag leaf, an insecticide application may be justified before the worms feed on the stems which will cause the heads to lodge (see photo). As the wheat dries, the worms will move out seeking more succulent hosts, i.e. corn, sorghum, brome, etc. and can do considerable damage as they move en masse (thus the name 'armyworm'), feeding as they go. If any treatment is utilized in wheat, please remember to check the label for the pre-harvest interval (PHI) for the insecticide selected. Refer to the 2013 Wheat Insect Management Guide: <http://entomology.k-state.edu/extension/insect-information/crop-pests/wheat/> for labeled products and *Crop Insects of Kansas* for biological information relative to these pests.



Armyworm Larva

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*Jeff Whitworth*

*Holly Davis*

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Sincerely,

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