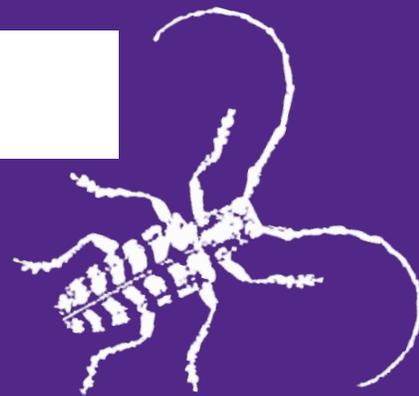


# Kansas State University Extension Entomology Newsletter

For Agribusinesses, Applicators, Consultants, Extension Personnel & Homeowners

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**April 24, 2020 No. 3**

Eastern Tent Caterpillar  
Praying Mantid Egg Cases  
New Extension Publication – Japanese Beetle  
Challenges for Applicators concerning PPE  
ID to last week's bug  
Identify This Insect  
Alfalfa

## Eastern Tent Caterpillar

The larvae (caterpillars) of the Eastern tent caterpillar, *Malacosoma americanum*, have hatched from eggs and are feeding on the leaves of trees and shrubs (Figure 1). After caterpillar's hatch from eggs, they create a distinct white, silken nest (or tent) in the branch crotches of trees and shrubs (Figure 2) including: birch, crabapple, hawthorn, mountain ash, poplar, willow, and flowering cherry, peach, and plum. The nest protects caterpillars from cold temperatures.

Caterpillars are black with a distinct light stripe that extends the length of the back and there are blue markings on the side of the body (Figure 3). There are five instars (stages between each molt). Eastern tent caterpillar is one of our earliest caterpillar defoliators, feeding on newly-emerged leaves, which reduces the ability of trees and shrubs to produce food by means of photosynthesis. Although feeding damage may not directly kill a tree or shrub, a decrease in photosynthesis can predispose plants to secondary pests such as wood-boring insects. Leaf quality can influence tree and shrub

Fig 1. Eastern Tent Caterpillar Feeding On New Leaves (Auth--Raymond Cloyd, KSU)



susceptibility to feeding. For instance, black cherry trees grown in the shade are less fed upon by Eastern tent caterpillars due to lower leaf nutritional quality.

The young or early instar (1<sup>st</sup> through 3<sup>rd</sup>) caterpillars are active during the daytime and reside in the silken nest at night. During the day caterpillars emerge from the silken nest and feed on plant leaves. On over-cast or cloudy days, caterpillars will remain inside the silken nest. The final instar (5<sup>th</sup>) caterpillar only feeds at night. The length time of time that caterpillars spend feeding increases 4-fold between the 1<sup>st</sup> and 5<sup>th</sup> instars. However, feeding activity is contingent on temperature with caterpillars feeding longer under warmer temperatures than cooler temperatures. Eastern tent caterpillar overwinters as an egg mass attached to the branches or small twigs (Figure 4). There is one generation per year in Kansas.

The silken nests can be physically removed or disrupted by hand. You can destroy, disrupt, or open-up the silken nest using a rake or a forceful water spray. The young exposed caterpillars are susceptible to consumption by birds whereas the later instars are less fed upon because the hairs on the body deter birds from feeding on them.

Spray applications of the bacterium, *Bacillus thuringiensis* subsp. *kurstaki*, or spinosad are effective in killing small (young) caterpillars and suppressing minor infestations of Eastern tent caterpillar. These insecticides are stomach poisons so caterpillars must ingest the material to be negatively affected. However, when caterpillars are mature and approximately 2 inches long, then pyrethroid-based insecticides (e.g. bifenthrin, cyfluthrin, and lambda-cyhalothrin) will need to be applied. It is important to apply insecticides when caterpillars are active during the daytime to increase exposure to the insecticide. For more information on managing Eastern tent caterpillar populations contact your county or state extension specialist.

Raymond Cloyd

Fig 2. Eastern Tent Caterpillar Tent or Nest (Auth--Raymond Cloyd, KSU)



Fig 3. Eastern Tent Caterpillar (Auth--Raymond Cloyd, KSU)



Fig 4. Eastern Tent Caterpillar Egg Mass Attached To Branch (Auth--Raymond Cloyd, KSU)



## Praying Mantid Egg Cases

Praying mantid adults are 3 to 4 inches (76 to 102 mm) long, elongated, slow-moving generalist insect predators that wait for prey with their upraised front legs (Figure 1). They eat “anything” they can grab onto with their raptorial front legs including: flies, crickets, moths (Figure 2), butterflies, wasps, and caterpillars. In addition, praying mantids will feed on honey bees entering and leaving hives. Praying mantid females lay between 200 and 300 eggs that are covered by a hardened, Styrofoam-like egg case or ootheca produced by the female. The egg cases can be found on branches (Figure 3), stems, walls, fences, sides



Fig 1. Praying Mantid with Front Legs Upraised (Auth--Raymond Cloyd, KSU)



Fig 2. A Praying Mantid Eating a Moth (Auth--Raymond Cloyd, KSU)



Fig 3. Praying Mantid Egg Case on Branch (Auth--Raymond Cloyd, KSU)

of houses (Figure 4), and eaves. Egg cases may be present from November through April. Nymphs hatch (eclose) from eggs in three to 10 weeks depending on temperature. Nymphs that emerge in spring resemble miniature adults (Figure 5). However, not all the nymphs will survive to become adults because they are susceptible to predation by vertebrates (birds, toads, and lizards) and predacious insects. Praying mantids overwinter as eggs.

Fig 4. Praying Mantid Egg Case Attached To Side of House (Auth--Raymond Cloyd, KSU)



Fig 5. Praying Mantid Nymphs That Have Emerged From Egg Case (Auth--Josh's Frogs)



Egg cases can vary in size and shape depending on species. The egg case of the Carolina mantid, *Stagmomantis carolina*, is tan to light-brown, about 1.0 inch (25 mm) long, rectangular or elongated, rounded at the top and bottom, and there is a distinct white to gray band that extends down the center of the egg case (Figure 6). The egg case of the Chinese mantid, *Tenodera aridifolia sinensis*, is light-brown, approximately 1-1/2 inches (38 mm) long, half-domed shaped, with one end tapered (Figure 7).

Fig 6. Egg Case of The Carolina Mantid (Auth--The Amazing Plant Project)



Fig 7. Egg Case of Chinese Mantid on Branch (Auth--Raymond Cloyd, KSU)



Egg cases can be purchased from garden centers, nurseries, or mail order sources (Figure 8). Most egg cases for sale are associated with the Chinese mantid, which is not native to North America; however, the species has become naturalized in most regions. The purchase of praying mantid egg cases is not recommended because praying mantids will not effectively regulate most insect pest populations or will not kill enough insect pests to prevent damage. Nonetheless, having praying mantids in the garden provides an educational opportunity for people to observe nature in action!



Fig 8. Product Containing Egg Cases of The Chinese Mantid (Auth--Raymond Cloyd, KSU)

Well, how can I collect and preserve praying mantid egg cases? You can remove the egg case, bring them into the home, and place into a glass jar with a lid that has least 10 small air holes. The warm temperatures inside the home will cause the nymphs to hatch from eggs in four to six weeks. You can delay egg hatch by placing the egg cases into a refrigerator and remove one to two months before you want the eggs to hatch. This will ensure that nymphs are released when the weather is warm so there is no risk of exposure to cold temperatures. The nymphs that emerge will be very hungry. Therefore, immediately release them into the garden, as long as they will not be exposed to freezing temperatures. However, if the nymphs are not released promptly or provided with a food source, they will eat each other (cannibalism) leaving just one large nymph that will not eat for a month.

Raymond Cloyd

HOME

## New Extension Publication – Japanese Beetle

Japanese Beetle: Insect Pest of Horticultural Plants and Turfgrass (MF3488)

The Japanese beetle is one of the most destructive insect pests of horticultural plants and turfgrass. This publication provides

Information to help identify damage caused by larva and adults with strategies for managing Japanese beetle populations: <https://bookstore.ksre.ksu.edu/Item.aspx?catId=524&pubId=22599>

Raymond Cloyd

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## Challenges for Applicators concerning PPE

This growing season may be a challenge for producers/applicators in more ways than one. With the critical need for N95 respirators for health care workers, it is anticipated that applicators may experience a shortage of personal protective equipment (PPE) that will be available to use this growing season if not previously purchased. It is important to remember pesticides may not be applied without the label-required PPE. The Environmental Protection Agency has not issued any exemption or relaxation of the PPE label requirements, therefore some herbicides, fungicides, and insecticides you plan to use may require the use of N95 type respirators.

It is important to review the labels of products which are key to your operations and plan accordingly. If required PPE is unavailable for purchase, users may need to select alternative products or management methods. Research to see if there is a product available with the same active ingredient, whose formulation type reduces the need for respiratory protection. The other alternative is applicators are allowed to use more protective gear, so if you have a half or full-face respirator with a N95 filter that you have had fit-tested and received a medical evaluation to use this may be a good alternative.

Do not put yourself at risk by not following the label PPE requirements because you are having difficulty finding PPE. This could potentially add to the need for medical care and is in direct violation of the label, so please have a plan for how you will deal with this issue.

Frannie Miller

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HOME

## ID to last week's bug

**Jumping Spider** - This is the Bold Jumper also known as the Daring Jumping Spider. They are relatively small, compact hunting spiders. They exhibit iridescent chelicerae (see the green coloring). These spiders tend to hunt during the day. More information about common spider families in Kansas can be found by visiting:

<https://bookstore.ksre.ksu.edu/pubs/ep125.pdf>

Frannie Miller

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HOME

Identify This Insect

Can you identify what this is and what insect created it?



## Alfalfa

Much of the alfalfa throughout north central Kansas was significantly affected by last week's freezing temperatures, as previously noted. This is especially true of older, less robust stands, as indicated by the plants in the lower left portion of fig.1. Sampling these freeze-affected



**Figure 1 Alfalfa affected by the freeze (by Cayden Wyckoff)**

areas with a sweep net revealed only very few live alfalfa weevil larvae, i.e. an average of 1 live larvae/10 sweeps. However, the less freeze-affected plants (upper right portion of fig. 1) had a much more significant infestation, i.e. these areas averaged 26 live larvae/10 sweeps. The vast majority of alfalfa weevil larvae detected this week were mature larvae, and many were actually on the ground, see Fig. 2. probably preparing to pupate, as a few new adults were also detected, again, see Fig 2.



**Figure 2 Mature Alfalfa weevil larvae, new adult AW plus aphids and Lady beetle larva (by Cayden Wyckoff)**



**Figure 3 Aphids and lady beetle larvae (by Cayden Wyckoff)**

Aphid populations, both pea, see Fig. 3, and cowpea, seemed to have dramatically declined also. This is probably a combination of the freezing temperatures coupled with a healthy population of lady beetle larvae, see Fig. 3, which have been voracious feeders on these aphids.

Jeff Whitworth

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[HOME](#)

# Kansas Insect Newsletter

April 24, 2020 No. 3

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**Kansas State University Agricultural Experiment Station and Cooperative Extension Service**

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