Kansas State University Department of Entomology Newsletter

For Agribusinesses, Applicators, Consultants, Extension Personnel & Homeowners

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Green June Beetle Adults Are Flying Around!
Japanese Beetles…With A Vengeance!
Do Not Get 'Ticked-Off' After Eating Meat
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Thistle Caterpillars in Soybeans
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Green June Beetle Adults Are Flying Around!

Green June beetle, *Cotinis nitida*, adults are actively flying around managed and/or unmanaged grassy areas, and 'bumping' into people and objects. Adults are 3/4 to 1.0 inch long, velvety-green, and tinged with yellow-brown coloration (Figure 1). Green stripes with yellow-orange margins extend lengthwise on the front wings. The underside of the body is distinctly shiny and metallic green or gold. Adults resemble 'dive bombers' flying around for several weeks in July. Green June beetle has a one-year life cycle, and overwinters as a mature larva or grub. Adults typically emerge in late-June and are active during the day, resting at night on plants, in thatch, or in compost. Adults produce a sound similar to that of bumble bees. Adults will feed on ripening fruits (Figure 2) and may occasionally feed on plant leaves. The male beetles swarm in the morning, 'dive bombing' to-and-fro just above managed and/or unmanaged grassy areas where females are located. Females emit a pheromone that attracts the males. Clusters

Fig 1. Green June beetle adult (Author--Raymond Cloyd, KSU)

Fig 2. Green June beetle adult feeding on fruit (Author--Raymond Cloyd, KSU)

of beetles may be seen on the surface of the soil or in grassy areas with several males attempting to mate with a single female, resulting in an 'insect orgy.' Mated females that survive the experience will lay clusters of 10 to 30 eggs in moist soil that contains a high amount of organic matter. Eggs hatch in about two weeks in early August and young larvae feed near the soil surface. The larvae feed primarily on organic matter including thatch and grass-clippings; preferring material with a high moisture content. Larvae are 3/8 (early instars) to 1.5 (later instars) inches long, and exhibit a strange behavioral trait—they crawl on their back likely due having a constant itch.

Raymond Cloyd

Japanese Beetles…With A Vengeance!

Japanese beetle, *Popilla japonica*, adults are out in full-force in most regions of Kansas feeding on different plant species, including: roses, *Rosa* spp.; littleleaf linden, *Tilia cordata*; and Virginia creeper, *Parthenocissus quinquefolia*, among many other plant species. The means of dealing with the adult stage of Japanese beetle are limited, and have been for many years, with the use of insecticides still being the primary strategy. Japanese beetle adults are one of the most destructive insect pests of horticultural plants in both landscapes and gardens. In addition, the larva or grub is a major turfgrass insect pest in home lawns, commercial settings, and golf courses.

Fig 1. Japanese beetle adults feeding and mating on a leaf (Author--Raymond Cloyd, KSU

Japanese beetle adults are 9/16 of an inch in length and metallic green with coppery-brown wing covers (Figure 1). There are about 14 tufts of white hair present along the edge of the abdomen (Figure 2). Adult Japanese beetles emerge from the soil and live up to 45 days feeding on plants over a four-to-six-week period. Adults feed on many ornamental plants including: trees, shrubs, vines, herbaceous annual and perennials, and of course—roses. Plant placement in the landscape and volatiles emitted by plants are factors that affect adult acceptance. Furthermore, Japanese

Fig 2. Japanese beetle adult feeding. Note white tufts of hair along the edge of the abdomen (Author--Raymond Cloyd, KSU).

beetle adults produce aggregation pheromones that attract both males and females to the same feeding location. Adults can fly up to five miles to locate a host plant; however, they tend to only fly short distances to feed and for females to lay eggs.

Japanese beetle adults feed through the upper leaf surface (epidermis) and leaf center (mesophyll), leaving the lower epidermis intact. Adults avoid feeding on tissue between leaf veins, resulting in leaves appearing lace-like or skeletonized (Figure 3). They are most active during warm days, feeding on is likely why roses are a susceptible host plant because roses require at least six hours of direct sunlight in order to flower. Japanese beetle adults start feeding at the top of plants, migrating downward after depleting food sources. Japanese beetle adults will also feed on flowers (Figure 4), chewing holes in flower buds, which prevents flowers from opening or causes petals to fall prematurely.

Fig 3. Japanese beetle adult feeding damage on leaf (Author--Raymond Cloyd, KSU)

Fig 4. Japanese beetle adults feeding on rose flower (Author--Raymond Cloyd, KSU)

Dealing with Japanese beetle adults involves implementing a variety of plant protection strategies, including: cultural, physical, and insecticidal controls. Cultural control is affiliated with maintaining healthy plants through proper irrigation, fertility, mulching, and pruning, which are important in minimizing 'stress', which may possibly decrease susceptibility. Moreover, removing weeds that are attractive to Japanese beetle adults such as smartweed (*Polygonum* spp.) may alleviate infestations. Physical control involves hand-picking or collecting Japanese beetle adults from plants before populations are extensive. The best time to hand-pick or collect adults is in the morning when ambient air temperatures are typically 'cooler.' Adults are easily collected by placing a wide-mouthed jar or bucket containing rubbing alcohol (70% isopropyl alcohol) perpendicular to the body, and fall into the liquid and are subsequently killed. This procedure, when conducted daily or every-other-day, particularly after adults emerge, may substantially reduce plant

Fig 5. Japanese beetle trap (Author--Raymond Cloyd, KSU)

damage. The use of Japanese beetle traps (Figure 5) within a landscape or garden is not recommended since the floral lure and synthetically-derived sex pheromone may attract more adults into an area than would 'normally' occur. Japanese beetle adults may also feed on plants before reaching the traps, which increases potential damage.

Spray applications of contact insecticides will kill Japanese beetle adults. However, repeat applications are required; especially when populations are excessive. The insecticide carbaryl (Sevin®) and several pyrethroid-based insecticides; such as those containing bifenthrin or cyfluthrin as the active ingredient, will suppress Japanese beetle adult populations. However, most of these insecticides will also directly harm many natural enemies (parasitoids and predators). Continual use will result in secondary pest outbreaks of other pests including the twospotted spider mite, *Tetranychus urticae*. In addition, these insecticides are directly harmful to honey bees and bumble bees. Therefore, applications should be conducted in the early morning or late evening when bees are less active. In general, systemic insecticides are not effective against Japanese beetle adults because they have to feed on leaves and consume lethal concentrations of the active ingredient. If extensive populations are present, plant damage can still occur.

The battle against Japanese beetle adults requires patience, persistence, and diligence to prevent adults from causing substantial damage to plants in landscapes and gardens.

Raymond Cloyd

HOME

Do Not Get 'Ticked-Off' After Eating Meat

We have received several inquiries regarding information pertaining to the relationship between tick bites and allergic reactions after eating meat, which doctors have called the 'Alpha-Gal Syndrome.' The information is correct. What happens is that the gut of a lone star tick, *Amblyomma americanum* (Figure 1), after feeding on a mammal; such as a raccoon or mouse, becomes filled with a carbohydrate-based molecule called alpha-galactose or alpha-gal. Alpha-galactose enters the body when an infected lone star tick feeds/bites a human, which stimulates the immune system to produce antibodies that will ward-off the molecule. Consequently, if the immune system encounters alpha-galactose again, then a potentially life-threating allergic reaction may ensue. So, what is the problem? Well, many meat products including beef (Figure 2) and pork contain alpha-galactose, and anyone having been bitten by a lone star tick, and then later on consuming meat may develop an allergic reaction. However, fish and chicken can be eaten without concern because they do not have the antigens associated with alpha-galactose. Therefore, it is important to protect

Fig 1. Lone star tick female (Author--Pestworld.org)

Fig 2. Beef tenderloin (Author--delish.com)

yourself in order to avoid being bitten by ticks, in this case, the lone star tick, by taking the recommended precautions (e.g. use repellents, wear light-colored clothing, tuck pant legs into white socks, and inspect yourself after having returned from wooded areas) so you can continue to enjoy eating meat at home or at your favorite restaurant.

Raymond Cloyd

HOME

Additional arthropod (insect and mite) pests to be aware of in landscapes and gardens include:

* Bagworms
* Grasshoppers
* Chiggers
* Ticks
* Squash bug
* Lace bugs
* Colorado potato beetle
* Flea beetles
* Harlequin bug

* Twelve spotted cucumber beetle
* Twospotted spider mite

Also, many butterflies, including the Monarch, are feeding on flowering plants such as zinnia. In addition, Monarch butterfly larvae or caterpillars are feeding on common milkweed, *Asclepias syriaca* plants (Figure 1).

If you have any questions or comments regarding any of these arthropod pests please contact your county based extension office or the Department of Entomology at Kansas State University (Manhattan, KS).

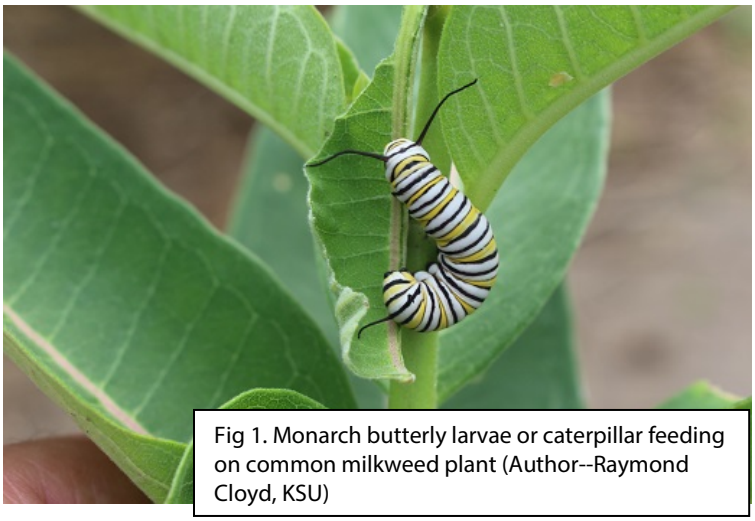


Fig 1. Monarch butterly larvae or caterpillar feeding on common milkweed plant (Author--Raymond Cloyd, KSU)

Raymond Cloyd

HOME

Thistle Caterpillars in Soybeans

In 2017, thistle caterpillars caused considerable concern and some defoliation all around the state, especially in double-cropped soybeans. Thistle caterpillars are the larval stage of the painted lady butterfly.


Painted Lady – Top view


Painted Lady – Side view

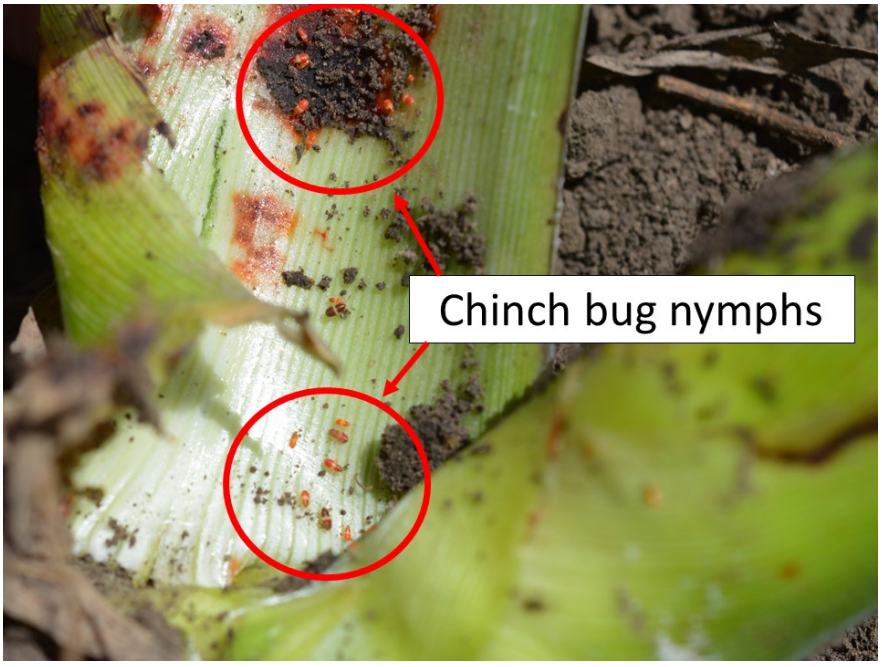
Thistle caterpillars have been a perennial concern in commercial sunflowers, but in 2017, there were significant infestations in soybeans, causing enough defoliation to require many acres to be treated with insecticides. The painted lady butterflies then migrated south, out of KS, last fall as they don't overwinter here. However, they are now migrating back into the state and are depositing eggs on sunflowers and soybeans. Thus, thistle caterpillars will soon be webbing together, and feeding on, leaves. In 2017, there were two generations and there is no reason not to expect the same this year.

Jeff Whitworth Holly Davis

HOME

Chinch Bugs in Sorghum

Chinch bug adults continue to mate and deposit eggs, especially around the base of young sorghum plants. As these eggs hatch, nymphs are increasing in both numbers and size and thus are removing more and more of the moisture from the plant.



This trend will probably continue from now until September and thus cause serious stress to plants, especially if environmental moisture is limited. If treatment is warranted, it is important to use directed sprays and adequate carrier to reach the base of plants where chinch bugs are actively feeding. This will

also avoid non-target organisms as much as possible. For more information on chinch bugs, management decisions, and/or insecticide recommendations, please see:

Chinch Bugs MF3107: https://www.bookstore.ksre.ksu.edu/pubs/mf3107.pdf

2018 Sorghum Insect Management Guide: https://www.bookstore.ksre.ksu.edu/pubs/mf742.pdf

Jeff Whitworth Holly Davis

HOME

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

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