Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel

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OH…NO!! Bagworms: What Can You Do?

It is that time of year in which you need to deal with that "infamous" insect pest called the bagworm, *Thyridopteryx ephemeraeformis*. Bagworms are out-and-about feeding on trees and shrubs (both evergreen and broadleaf), and have expanded their host range even feeding on roses. The important question is… how can you minimize the damage caused by bagworm caterpillars? Well, first you can "hand-pick" the bags and place 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 want to consider having a "bagworm hand-picking party" with prizes awarded to individuals that collect the most bags.

For those not interested in hand-picking there are a number of pest control materials labeled for control or suppression of bagworm populations including acephate (Orthene), *Bacillus thuringiensis* subsp. *kurstaki* (Dipel and Thuricide), cyfluthrin (Tempo), trichlorfon (Dylox), indoxacarb (Provaunt), chlorantraniliprole (Acelepryn), and spinosad (Conserve). Most of these active ingredients are often available and sold under different trade names or generic products. However, several of these pest control materials may not be available to homeowners. It is critical to make applications early and frequently enough to kill the young caterpillars. Older caterpillars, in the bags, may be 3/4-inches long, and are more difficult to kill or obtain sufficient mortality to prevent plant damage. 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* is highly active on young caterpillars; however, the active ingredient must be consumed to be effective, so thorough coverage of all plant parts is important. Spinosad, which is the active ingredient in a number of homeowner products (including Borer, Bagworm, Tent Caterpillar & Leafminer Spray; Captain Jack's DeadBug Brew; and Monterey Garden Insect Spray) works by contact and ingestion (stomach poison), and is very effective in suppressing bagworm populations, even killing older caterpillars. Cyfluthrin, trichlorfon, and indoxacarb are typically used against the older (larger) caterpillars. Again, thorough coverage of all plant parts is important, especially the tops of trees and shrubs, where bagworms commonly start feeding. Furthermore, several applications will be required since bagworms may "blow in" from neighboring plants. If left unchecked, bagworms can cause significant damage, thus ruining the aesthetic quality of plants or they may actually kill plants, especially newly transplanted or small plants.

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

Raymond Cloyd

Japanese Beetle On Roses: What Can You Do?

Japanese beetles are considered a scourge among rosarians and for sound reasons as this insect pest can cause considerable damage to roses. However, the means of dealing with the adult stage of this insect pest are limited and have been for many years, mostly relying on the use of insecticides. Japanese beetle, *Popillia japonica* is native to Japan and was first reported in the United States in 1916 in the state of New Jersey. Since then, it has spread throughout the country from Maine to Georgia becoming permanently established in nearly every state east of the Mississippi River and several states westward. The adult is one of the most destructive insect pests of horticultural plants in both landscapes and gardens. The larva or grub stage is a major turfgrass pest in home lawns, commercial settings, and golf courses.

Adult Japanese beetles emerge from the soil and live from 30 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. Placement of plants in the landscape and volatiles emitted by plants are factors that may influence adult acceptance for feeding. Japanese beetle adults produce aggregation pheromones that attract individuals (both males and females) to feeding locations. Adults may fly up to five miles to locate a feeding site; however, they usually fly only short distances to feeding and egg-laying sites.

Japanese beetle adults feed through the upper leaf surface (epidermis) and leaf center (mesophyll), leaving the lower epidermis intact. They typically avoid feeding on tissue between leaf veins, which results in leaves appearing lacelike or skeletonized. Japanese beetle adults are most active during warm days, feeding on plants that are exposed to sunlight throughout the day. This is likely why roses, which require at least six hours of direct sunlight, are such a susceptible host plant. In addition, they tend to initiate feeding at the top of plants, migrating downward after depleting food sources. Japanese beetle adults congregate in large numbers on rose flowers. Adult beetles primarily feed on flowers, but they will also feed on leaves. Japanese beetle adults chew holes in flower buds, thus preventing flowers from opening or causing petals to fall prematurely. Adults will also consume entire rose petals, and feed on the pollen of fully-opened flowers.

The management of Japanese beetle adults involves implementing a variety of cultural, physical, and chemical strategies. Cultural management includes maintaining healthy roses through proper irrigation, fertility, mulching, and pruning, which minimizes stress and decreases susceptibility. Furthermore, removing weeds such as smartweed (*Polygonum* spp.) that are attractive to Japanese beetle will at least alleviate infestations of adults.

Physical management involves Japanese beetle adults being removed from roses via “hand-picking” or collecting prior to populations becoming extensive. The appropriate time to hand-pick or collect adult beetles is in the morning when ambient air temperatures are typically “cool.” Adults can be easily collected by placing a wide-mouthed jar or bucket containing rubbing alcohol (70% isopropyl alcohol) or soapy water underneath each

adult, and then touching them. When adults are disturbed, they fold their legs perpendicular to the body, and will fall into the liquid and be killed. This procedure, when conducted daily or every-other-day, particularly the first two weeks after adults emerge, may significantly reduce plant damage. The use of Japanese beetle traps is not recommended since the floral lure and synthetically-derived sex pheromone tend to attract more adult beetles into an area than would "normally" occur. In addition, adult beetles may feed on roses before reaching the traps, which increases potential damage.

Contact insecticides are commonly used to kill Japanese beetle adults, and repeat or multiple applications are required; especially when populations are excessive. Thorough coverage of all plant parts will increase effectiveness of the application. The insecticide carbaryl (Sevin) and several pyrethroid-based insecticides including those containing bifenthrin or cyfluthrin as the active ingredient may be used to suppress populations of Japanese beetle adults. However, since most of these types of insecticides are harmful to many natural enemies (parasitoids and predators) their continual use may lead to either secondary pest outbreaks (such as twospotted spider mite) or target pest resurgence. Systemic insecticides, in general, are less effective because Japanese beetle adults have to feed on leaves and consume lethal concentrations of the active ingredient. If extensive populations are present then this may still result in damage to rose plants.

Overall, not much has changed over the past 10 years in regards to managing Japanese beetle adults on roses. As such, diligence is required in order to prevent adults from causing substantial damage to roses…and still make growing roses a favorite past-time.

Raymond Cloyd

Stink Bugs in Alfalfa and Corn

We have received numerous inquiries regarding stink bugs on corn. Thus far it has been a good year for stink bugs. Most stinkbugs overwinter as adults and most were apparently successful last winter as there seems to be healthy populations of both green and brown stink bugs in alfalfa and corn fields (see photos). Not really worried about alfalfa fields as they are killed with every insecticide application or removed with the hay at swathing. They cause no problem to the harvested product as they have to feed on plant juice from living plants. However, corn may be a different story. Some of the corn fields in both central and north central Kansas are just starting to tassel and some of these fields have 1+ bug/plant. This is not a problem as long as the bugs stay on the stalk or where the leaf attaches to the stalk. But, if they move up to the ear and start sucking the juice from the developing kernels inside the husk they may be somewhat problematic. This feeding, if done at the critical time and in a localized area of the ear may cause an irregular growth pattern resulting in banana-shaped or boomerang-shaped ears. We really have never seen this too much extent in KS, more just a novelty here and there and there are other factors that can cause these misshapen ears. But, it is something that deserves watching even though we do not have a treatment threshold or economic injury level for stink bugs in corn.

Brown stink bug

Green stink bug

Chinch Bugs in Corn

We have seen healthy chinch bug infestations in corn, even corn that is starting to tassel. Most are adults in north central KS right now and the recent rains have helped the corn withstand the chinch bug feeding. However, if this summer continues to be hot and dry, and as these adult chinch bugs lay eggs and thus we see tremendous increases in immature bugs, this feeding will weaken the stalks of dry land corn and we may see some early lodging (see photo). Spraying for chinch bugs in tassel-stage corn is a difficult proposition as the spray has to contact the bug to control it and most are behind the leaf sheaths or around the base in the soil where the spray will not reach.

Chinch bug nymphs and adults

Chinch Bugs in Sorghum

Small sorghum is being attacked by chinch bugs but the recent rains have really helped by allowing the sorghum plants to withstand more bug feeding. Most of the populations are still composed of adults but, when eggs hatch and nymphs start feeding, they will put that much more stress on the small plants. Seed treatments will help control nymphs but only for 21-28 days from planting. Foliar insecticides will do an acceptable job protecting small sorghum plants from chinch bugs but they are all contact insecticides so enough carrier is necessary to ensure complete coverage. Please see Sorghum Insect Management 2012 for more information:

http://www.ksre.ksu.edu/library/ENTML2/Mf742.pdf

Grasshoppers

Grasshoppers are still numerous throughout south central and north central KS along weedy/grassy borders of many crop fields. The grasshoppers are still nymphs (see photo) but are growing rapidly and as soon as these border areas dry down they will be moving into the crops. One alfalfa field in central KS already had a significant infestation of grasshoppers extending into the alfalfa for about 20 ft. from the border with plenty of grasshoppers remaining in the border. So, it's not too late to spray the borders for grasshopper control but you do not want to wait much longer.

Grasshopper nymphs – June 18, 2012 - Saline County

Jeff Whitworth *Holly Davis*

Turfgrass Concerns - Control of Annual White Grubs

While there are a number of turfgrass insect pests in Kansas, "white grubs" are NUMBER ONE on the tip-of-the-tongue. This is because grubs are encountered throughout the entire state and because of the extreme damage caused when sufficiently high populations consume/destroy grass root systems. The white grubs in question are the larvae of "masked chafer beetles" (*Cyclocephala* spp.) which have a 1-year developmental cycle [hence they are commonly referred to as annual white grubs, not to be confused with the grubs of May/June beetles (*Phyllophaga* spp.) of which most species have a 3-year developmental cycle].

Because there is high aesthetic value (especially) placed on "picture perfect" turf for residential homes, apartment complexes and industrial grounds, and "well-manicured and picturesque" golf courses and playing surfaces of other sports venues, there is great emphasis on preventative measures against potential grub damage. Because it is difficult to forecast grub population levels, or to predict exactly where they will occur, preventative insecticide treatments are routinely/automatically applied to help meet expectations for flawless stands of turfgrass.

Preventative treatments primarily rely on systemic insecticides. The first Active Ingredient (imidacloprid) was granted approval for use by the U. S. EPA on March 10, 1994. There are 377 products containing imidacloprid currently registered in Kansas. Additional "systemic" AI's (and number of products registered in Kansas) include chlorantraniliprole (27), clothianidin (23) and thiamethoxam (40). Not all products are available for homeowner use. One must "shop-the-shelves" at retail outlets for locally available products.

One needs to read each product label to determine the appropriate time of application specified for each respective product: preceding or during egg laying; just prior to egg laying or to early instar larvae; early April to early September for preventative or for early curative control; and 45 days prior to historical flight peak for the targeted species.

Logic would be that a treatment be applied at a time that the greatest concentration of AI will be available at a time coinciding with the hatching/presence of small grubs.

Not having any way of monitoring masked chafer flights throughout Kansas, I can only report on activities in the Manhattan area. Blacklight traps are situated at 3 locations: a residential neighborhood (Figure 1); a clearing along Deep Creek (Figure 2); and in a wooded area (Figure 3).

Figure 1

Figure 2

Figure 3

Although 2, 3 and 2 beetles were collected May 19, May 24, and May 25, respectively, in the residential neighborhood, sustained flights began at each site the evening of June 2 (Figure 4). Trap catches/increased beetle activities began a 2-inch rain the evening of June 14.

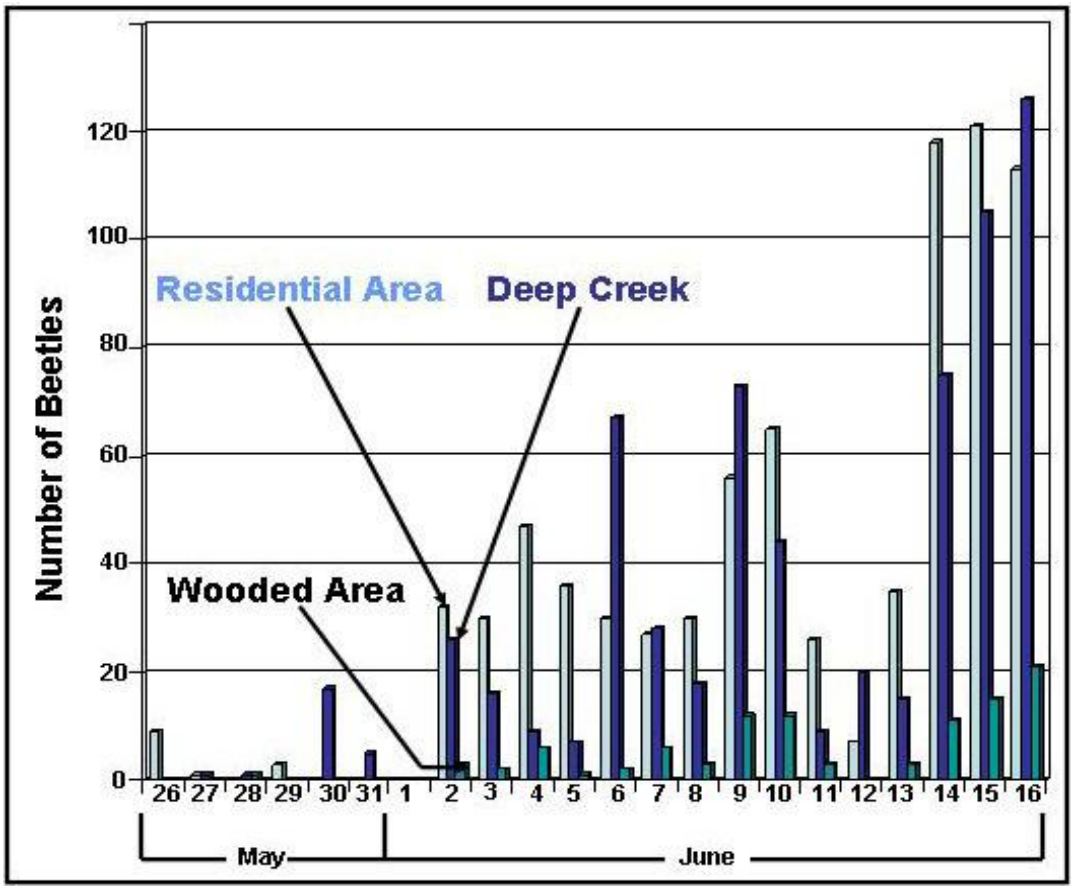

Figure 4

Because systemic insecticides eliminate the precision of applications required with non-persistent contact insecticides, at least in the Manhattan area, but probably throughout the state, now would be an ideal time to apply a systemic insecticide in situations where the aforementioned "preventative treatments" are "routinely/automatically applied to help meet the expectations for flawless stands of turfgrass". For whatever product is used, be sure to read that product's label to ensure the proper dosage rate and recommended post-treatment irrigation to move the product through the thatch and into the soil where roots will be able to absorb/take the insecticide into the plant.

In Need of a Rubber Stamp ----- Green June Beetles

The event is correct ----- soaking rains. The timing is a bit early ----- 2-3 weeks early. But maybe that is a reflection of early occurrence of numerous 2012 activities from the appearance of certain insect pests to early wheat harvest all attributed to the unusually warm spring weather.

The insect event to which I am referring is the appearance of green June beetles. There are several locations which I routinely check for green June beetle activities. While Manhattan received nearly 2-inches of rain last

Thursday, June 14, there were no observed green June beetle activities through the weekend. After last night's 2.3 inches, I checked the aforementioned sites and noted several green June beetles flying about. I expect that they will be out in full force over the next couple of days. This will put them about 2-3 weeks ahead of their appearances in each year from 2005 through 2011.

The rubber stamp? Despite all of the questions and concerns that revolve around the "buzzing antics" of green June Beetles, comments regarding/explaining their importance never change.

First ----- they really are attractive insects whether viewed from above (Figure 5A) or below (Figure 5B).

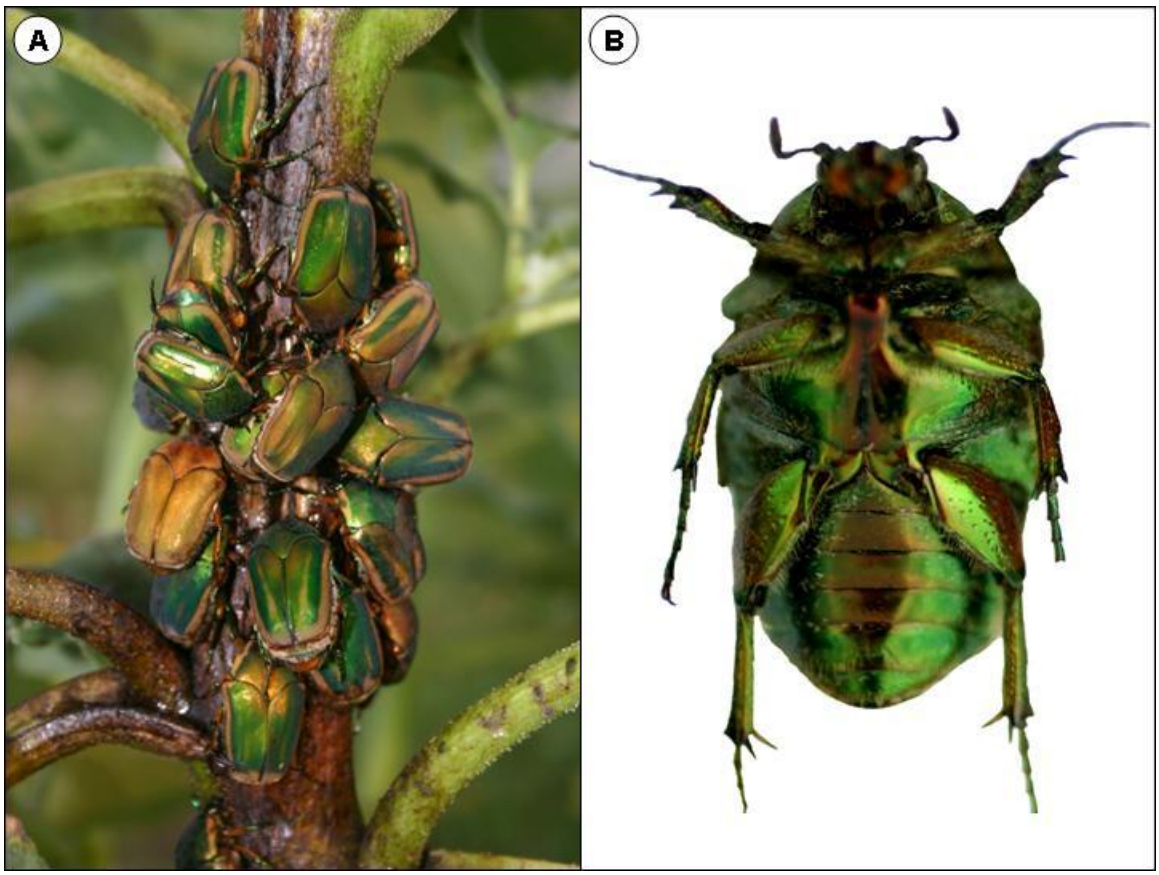

Figure 5

Second ----- because their wing beats create a very audible buzz, and coupled with their large size, rapid erratic flights and accidental collisions with people, people flee-the-scene-of-attack. However, green June beetles are harmless ---- neither capable of biting nor delivering a sting.

Third ----- they do not damage flowers or foliage as do Japanese beetles for which they may be mistook. In addition to size, there are definite differences between green June beetles and Japanese beetles as are readily apparent in Figure 6.

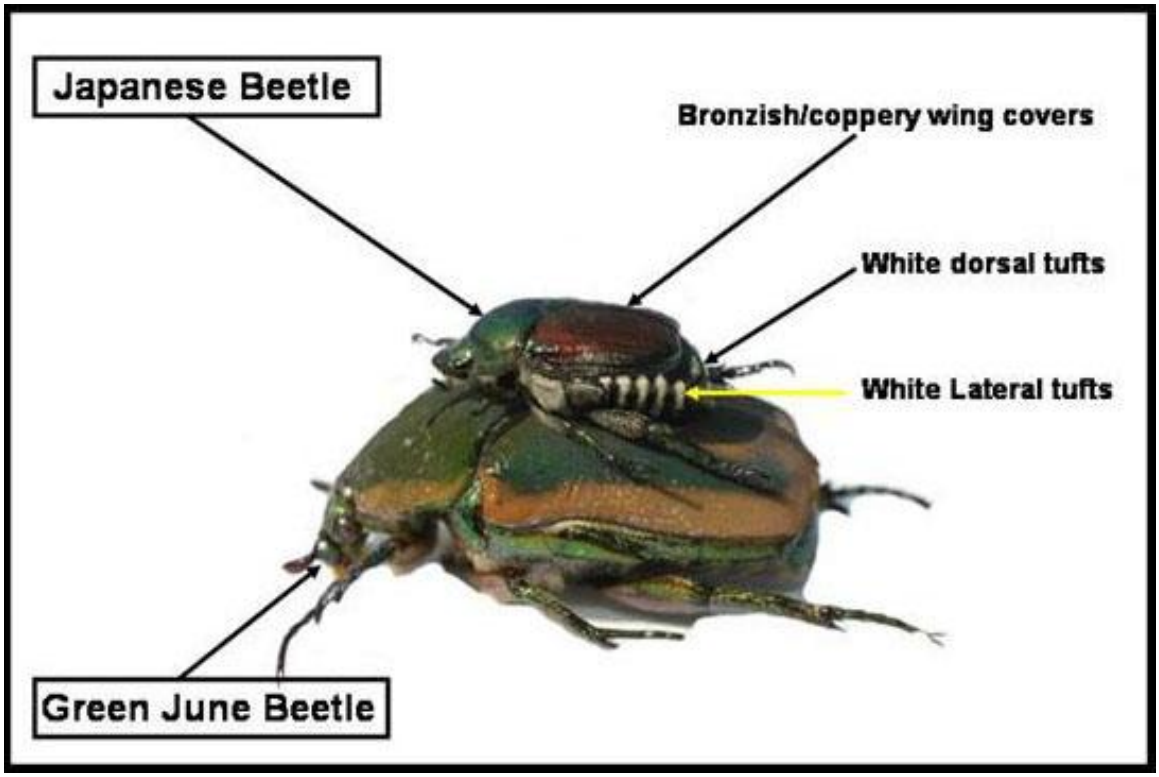

Figure 6

Probably the only legitimate complaint against green June beetles is that they may cluster on ripened/overly-ripe fruit, notably peaches and grapes. Timely picking/harvesting will help to avoid this situation.

Bob Bauernfeind

Report from the Kansas State University Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostic Laboratory from June 8th to June 20, 2012.

June 8 – County – Leafcurl aphids on ash
June 8 – Atchison County – Spruce spider mite damage on evergreens
June 8 – Riley County – Subterranean termite swarmers in basement
June 8 – Neosho County – Braconid parasitic wasp, *Atanycolus* sp.
June 11- Northeast Kansas – Wheel bug nymph around home
June 11 – Brown County – Long horned beetle in home
June 12 – Trego County – Scorpion, *Centruroides vittatus* in car
June 12 – McPherson County – Ground beetle larva
June 13 – Meade County – Stink bug nymphs on Juniper

June 13 – Norton County – Carpet beetles in home
June 13 – Clay County – Possible silverfish in home
June 13 – Riley County – Bird mites around home
June 15 – Johnson County – Springtails in home
June 18 – Haskell County – Wolf spider in home
June 19 – Riley County – Woolly bear caterpillar
June 19 – Reno County – Ground/sac spider in home
June 20 – Geary County – Tiger beetle larva in sand

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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