Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants and Extension Personnel

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Hey…What Is That Eating My Sweet Potato Vine?

It is time to be on the look-out for a picturesque insect called the golden tortoise beetle, *Charidotella bicolor*. This beetle is oval in shape, and bright, metallic gold, orange-red, or yellow-green in color. They may be mistaken for ladybird beetle adults although in reality they really don't look like ladybird beetles. The beetle feeds primarily on ornamental sweet potato vines and plants in the morning glory family (Convulvulaceae). The beetle creates small, round, irregular-shaped holes in leaves during feeding that somewhat resemble slug damage; however, there is no slime trial on the plants. Beetles may be present on leaf undersides during the day. Larvae are flattened and spiny, and may be yellow to red-brown in color. They feed on leaf undersides, and carry their cast skins and feces on their back. There is usually one generation per year. Control or management is generally not required as ornamental sweet potato vines produce such an abundance of leaves that the adult and/or larvae will not cause significant plant damage.

Raymond Cloyd

Aphids in Sorghum

As the grain sorghum enters the whorl stage, corn leaf aphids will often be found. Initially, they feed deep in the whorl (look for lady beetles entering a whorl, then remove the central shoot and unroll it to look for the aphids), but successful colonies will eventually move out to cover the upper leaves. The best places to look are directly north of windbreaks where air turbulence over the trees tends to knock aphids out of the air and onto the crop. Corn leaf aphids are not a cause for concern because, although they remove some photosynthate, they do not harm the leaves. They typically disappear by the time the panicle emerges and infested plants make up for the loss of sap long before yield is determined. In fact, it is often argued that their net effect is beneficial in that they attract a wide range of predators and a parasitoid so that these insects amplify their populations prior to the arrival of migrant greenbugs which occurs somewhat later. Greenbugs are much more damaging because of their toxic saliva. So the risk is that corn leaf aphids are mistaken for greenbugs leading to an insecticide application that eliminates all the beneficial insects prior to the arrival of the damaging ones.

Corn leaf aphids (Figs. 1 and 2) are bluish green, have dark legs and cornicles, and feed down in the whorl and on the tops of the uppermost leaves. In contrast, greenbugs (Figs. 3 and 4) are pale lime-green aphids with pale legs and cornicles, a darkish stripe down the back, antennae as long or longer than the body, and feed exclusively on the undersides of lower leaves, usually attacking sorghum in later stages of development. Furthermore, any period of greenbug feeding will be associated with reddish spots where the aphids are inducing chlorosis.

The scorching hot temperatures that have prevailed throughout the High Plains this summer definitely present adverse conditions sufficient to suppress populations of both aphid species area-wide. However, the end result for aphid biocontrol later in the season is difficult to predict. If it remains hot, greenbug populations may

remain physically suppressed by the heat and biological control may be irrelevant. However, if things cool off and permit greenbugs to bloom on sorghum in August, natural enemy populations may be inadequate to control them if they have been unable to reproduce and amplify their numbers on corn leaf aphid or other aphid species earlier in the summer. As usual, farmer vigilance (and ability to distinguish aphid species) is the best insurance against possible losses to aphids in sorghum.

J.P. Michaud

A New Squash Pest??? …… Squash Bugs??????

Thaddius William Harris wrote: "Entomologists use the word bug for the various kinds of insects having the mouth provided with a slender beak, which, when not in use, is bent under the body, and lies upon the breast between the legs.

In my Catalogue of the Insects of Massachusetts are the scientific names of ninety-five native species. I shall confine my remarks to the 2 species which are most vexing for injuring plants.

The common squash bug, so well known for its mischievous punctures on the leaves and stems of squashes, is the most remarkable of these insects." The year of this quote? **1862!**

Well then, maybe squash bugs are not a new pest after all. Here we are a year short of the 1½ century mark, still cursing squash bugs. I wonder how things will be in 2160!

Squash bugs undergo gradual metamorphosis (Figure 1). From an egg emerges a 1st instar nymph. After undergoing 5 molts, the adult squash bug appears.

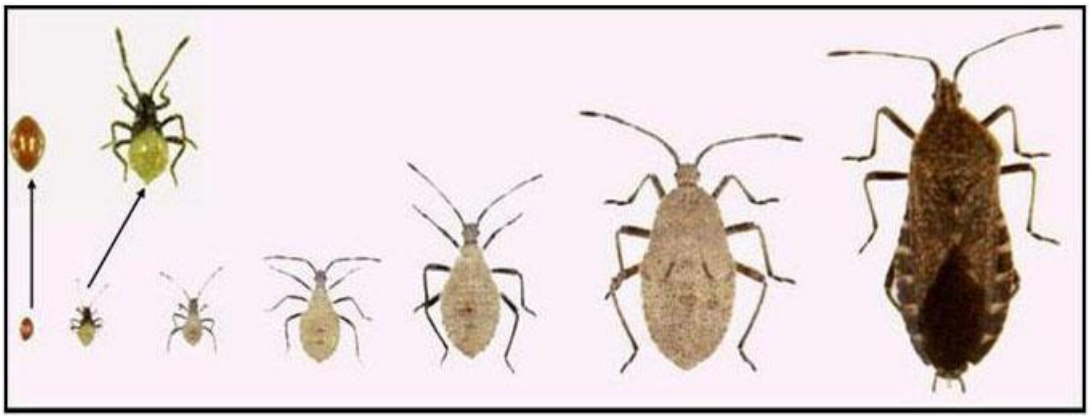

Figure 1

Sounds simple enough. So why are squash bugs (as described by Harris) so vexing? It mainly has to do with the requirement for diligent season long efforts to minimize squash bug populations. Ideally, a short reproductive/egg-producing period allows a person to apply (perhaps) but a single timely insecticide application to eliminate the greatest percent of a burgeoning pest population. However, this is not the scenario for squash bugs.

Typically in Kansas, squash bugs produce 2 generations per year. They overwinter as adults. With spring warm-up, adults become active. After mating, females deposit eggs for the first generation. When daughters become mature and begin producing/depositing their eggs, "Mom" may be over on the next leaf still producing eggs. There is a continuum of egg production throughout the entire growing season. Thus for plants to thrive, squash bug populations must be kept to a minimum.

Management of squash bugs is doable **IF** gardeners are proactive (detecting the onset of egg laying and monitoring for the hatching/emergence of nymphs). This will allow gardeners to apply a timely initial spray treatment against the especially susceptible small soft-bodied nymphs. Thorough coverage (not just a light mist application to upper surfaces of upper leaves) is essential to ensure that insecticides contact the nymphs, many of which are on undersides of all leaves as well as the plant stem.

But this is just the tip of the iceberg. Continual season long inspections for eggs, monitoring for ensuing nymphal activities and additional insecticide applications are required to keep a squash bug populations to an acceptable level.

The downfall in population management of squash bugs is not a failure of insecticides, but rather a failure of diligence. Given other priorities in life, the garden may be on a lower rung of importance. By the time that squash bugs are noticed, one may find that population levels are so excessive that plant damage has already occurred. Plants may be of sufficient size thus providing many "sanctuaries" where squash bugs are protected

from insecticide applications. Also, populations may be comprised of "thick-skinned" adult forms which are somewhat impervious to treatment applications.

Squash bugs historically have been a nemesis to squash and pumpkin production, and likely will be for many years to come. Only if properly managed can they be kept to causing but minimal damage. And that is dependent on the level of involvement one is willing and capable of providing.

Grub Control

While I have not personally received any inquires regarding grub control, I note (by Ward Upham's Hot Topics List) that CEA's have indicated calls to their offices. So a little on grub control.

It is well known that throughout Kansas, the grubs-of-concern which are associated with turfgrass are designated "annual grubs" --- the larvae of beetles in the genus *Cyclocephala* ---- collectively referred to as "masked chafers" (Figure 2).

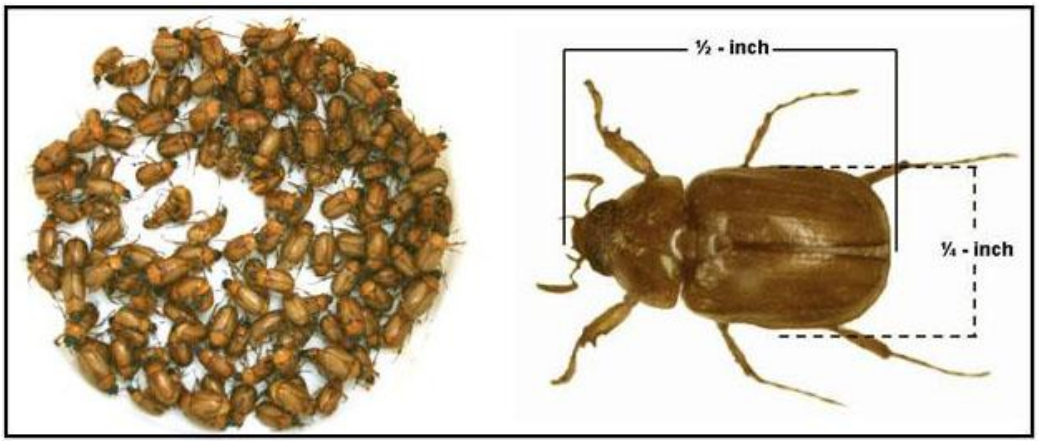

Figure 2

There are two approaches with regard to grub control: preventative and curative/rescue. At this time, questions pertain to preventative measures. Preventative treatments are employed in situations where individuals have expectations for "picture-perfect" turf, usually high visibility areas. This may notably include home lawns, apartment complexes, industrial parks, sport venues and golf courses.

Preventative treatments do have drawbacks: treatments are automatically applied without any knowledge of their being necessary; areas are treated in their entirety, although typically, grub concentrations are usually but spotty; and costs are incurred for material/labor/services when, again, treatments may not have been warranted. Yet, the underlying benefit of preventative treatments is that they offer an "insurance" against possible grub damage, and peace-of-mind for concerned individuals.

Two types of insecticides have wide use as preventative treatments against grubs in turf: systemic insecticides and contact insecticides. The former provide long range control whereas contact insecticides are comparatively short-lived --- are non-residual. Systemic insecticides (Trade Name) which have performed most consistently contain the active ingredients chlorantraniliprole (Acelepryn), clothianidin (Arena), imidacloprid (Merit), and thiamethoxam (Meridian). Numbers of products registered for use in Kansas with the above-mentioned active ingredients, respectively: 25, 27, 398 and 33. Many products are only available for purchase and use by professional/commercial personnel.

The recommended time of application for systemic insecticides against annual white grubs in Kansas is in late June and early July at a time coinciding with egg laying and imminent egg hatch. Although past that time frame, systemic products can still be applied and should provide effective control.

Although systemic insecticides may offer some "contact kill", the "traditional" contact insecticides have short residual properties and therefore (unlike systemic insecticides) the timing of their application is critical. The ideal timing is after egg hatch is complete and while grubs are small (not capable of having caused extensive root feeding/damage to lawns, still highly susceptible to insecticides). That translates into a 10-day window of opportunity which occurs 30-40 days after the chafer flight peak. At that time, all eggs (Figure 3A) should have hatched and 90% of the grubs will be small 1st and 2nd instar individuals (Figure 3B).

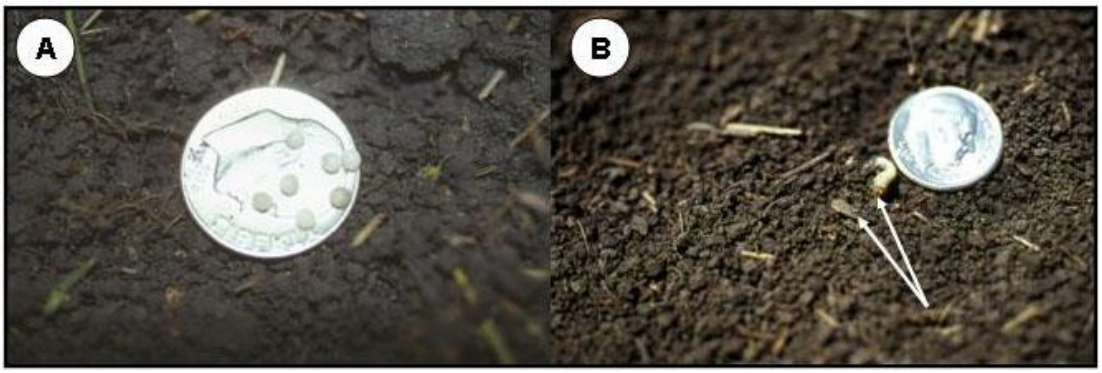

Figure 3

As a rule-of-thumb, July 4 is a catch-all date for the average chafer flight peak. There is some slip-and-slide on either side of that date. For instance, based on catch data from 3 blacklight traps operated in the Manhattan area, the 2011 chafer flight peaks were July 8, 9 and 10. Thus the average window-of-opportunity would be August 9 through 19. Again, this is not precision science, but a good guideline when timing the use of short residual contact insecticides.

Two active ingredients are currently registered for use as contact insecticides: carbaryl (Sevin product lines) and trichlorfon (Dylox, 24-Hour Grub Control, 24-Hour Grub Killer). Because insecticides are applied above

the soil surface, it is critical to move them into the soil zone where grubs actively feed. Calibrate equipment to ensure proper/sufficient amounts of product delivery. Use a vertislicer, power rake or plugger aerator to create passageways through thatch into the soil. Prewater areas to be treated, apply the insecticide and immediately apply a post-treatment irrigation to move the insecticides into the soil zone.

A word on curative/rescue treatments --- An advantage to this approach is treating only if damage occurs, and confining treatments only to those areas where damage appears. This requires a diligent effort on the part of homeowners and lawn service personnel. Not knowing if, when and where damaging populations of grubs will occur, frequent inspections are necessary to detect the onset of problem areas. Special attention should be provided areas with past and/or repeated histories of grub damage. Visual checks will enable the detection of "off color" amid normal healthy green turf. Closer inspection may further reveal moisture-stressed patches and thinning grass stands. These areas can then be probed for the presence of grubs, and if found, dealt with using the above-mentioned products containing the carbaryl and trichlorfon active ingredients. By this time (usually early to mid-September), grubs will likely be large ---- a trichlorfon product might be the product of choice as that AI has proven consistent efficacy against large grubs.

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Sincerely,

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