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Kansas Insect Newsletter

For Agribusinesses, Applicators, Consultants, and Extension Personnel

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Billbugs in Turf :

Despite being called “billbugs”, billbugs are beetles ---- specifically members of the family Curculionidae (commonly referred to as snout beetles and true weevils). In Kansas, the most frequently encountered billbug turf pest is the **bluegrass billbug** (Figure 1, note “snout”). Bluegrass billbugs are associated with cool season grasses, most commonly its namesake, bluegrass. Bluegrass is a highly desired type of turf because of its color and fine, thin bladed appearance. However, because bluegrasses prefer a cooler and moist climate, they struggle through the dry hot Kansas summers. Stressed lawns are thus especially susceptible to billbug damage.

Figure 1
Bluegrass billbug

Billbugs overwinter as adults in refuge areas in and around turf areas. They stir from their winter slumber when temperatures warm up in early spring. Essentially nonflyers, they walk from Point A to Point B. Thus they are frequently observed on sidewalks and driveways as they move into lawns. Billbug migrations are usually in full swing by late April and early May. Females chew notches in the crown stems into which they deposit eggs. Newly emerged larvae feed within stems. However as they increase in size and “outgrow” the stem, they enter the soil and commence feeding on root systems. By the beginning of July, stress/dead spots

appear (Figure 2). At this point in time, most larvae are fully grown and easily found when digging into “dead spots” (Figure 3). The larvae are white, plump and legless (Figure 4).

Figure 2
Dead turf

Figure 3
Billbug larva

Figure 4
Larva close-up

Mature larvae form earthen cocoons (Figure 5) inside of which they pupate (Figure 6). Upon close examination of the pupa, certain features of the future beetle can be discerned, notably their “snout” and legs (Figure 7). A newly-emerged adult (referred to as a callow adult due to its light coloration) (Figure 8) will soon darken as it’s cuticle hardens (Figure 9). These adults will feed throughout the remainder of the summer, thus accumulating food reserves to sustain them through the overwintering phase.

Figure 5
Earthen cocoon

Figure 6
Pupa

Figure 7
Pupa close-up

Figure 8
Callow adult

Figure 9
"Hardened" adult

Not every bluegrass lawn or turf situation experiences billbug damage. It may be due to the absence of billbugs in those particular areas. Or possibly, billbug populations are not of sufficient size to cause noticeable damage(especially) to high maintenance lawns which are well watered and appropriately fertilized. Where, however, billbugs cause damage on a frequent (if not yearly basis), preventative insecticide applications may be warranted. If the insecticide (selected for use) is a contact “adulticide”, it is essential to detect the actual billbug migration as it moves into turf areas. Billbugs must be eliminated before eggs are laid. Once eggs have been deposited, newly emerging larvae are protected within the stems upon which they feed. And by the time that they exit the stems and immediately enter the soil, insecticide residues (if any) provide little kill ---- resultant being that grass stands are thinned out/killed (Figure 10), light areas, and Figure 11, close-up of damage).

Figure 10
Thinned/dead areas

Figure 11
Dead area close-up

On the other hand, systemic insecticides provide control of billbugs by targeting the larval stages which feed on both foliar and root tissues. Larvae succumb after ingesting the systemic materials, the resultant being grass stands with a healthier/greener appearance (Figure 12).

Figure 12
Green turf

With the current impending warm-up, bluegrass billbugs will become increasingly active. If preventative insecticide applications are a consideration, a number of active ingredients have good activity against adult billbugs, and have been incorporated into insecticide products marketed for use by homeowners. Those active ingredients include: bifenthrin, carbaryl, cyfluthrin deltamethrin and lambda-cyhalothrin. Check package labels to ensure that those product formulations are registered for use against billbugs in turf.

Alfalfa Regrowth and Insect Concerns:

As stated a couple of weeks ago, most alfalfa weevil treatments were well-timed in infested areas. Unfortunately, a few growers with heavy alfalfa weevil populations did not recognize the threat from alfalfa weevil, so a scattering of fields developed that characteristic grayish or silvery appearance that signals severe defoliation has been inflicted by this pest – so much so that the damage sometimes was visible from roads at some distance away from the field. Fields are being swathed and harvested in the central and northern part of the state.

In the 7 to 14 days following cutting, alfalfa growers and consultants should pay special attention to re-growth. With the abundant rainfall that many areas have experienced lately, new growth should not be delayed. In fields that do not green-up rapidly, check for variegated cutworms, alfalfa weevil adults or possibly alfalfa weevil larvae in the leaf litter. Some reports indicate that alfalfa weevil adults are being found in significant numbers in scattered fields. Heavy weevil adult populations and surviving larval populations can lower production, in part, by delaying the establishment of new growth. In essence, this shortening the sunlight harvesting time available to the crop or – in other words – shrinking the effective growing season. Growers with swathed and raked hay that sits in windrows may find that damage is much worse under the windrows where pests are protected from the sun.

Treatments are recommended when 4 to 8 weevil larvae per square foot are present. There is less information on treatment thresholds and product choice when it comes to adult control decision-making. However, if stems are being ‘barked’ (having the outer tissue removed) and that damage is widespread, consider treating with a product that has efficacy against adults. Barking of stem bases forces the plants to initiate and sometimes re-initiate all new growth from buds arising from the crown – putting the plant under additional stress as reserves are depleted. Our 2005 recommendation guide notes that carbofuran (Furadan 4F), methyl parathion (for instance, Cheminova Methyl 4EC), and phosmet (Imidan) have shown reasonable performance against adult alfalfa weevils. Remember that swathed hay must be removed from the field if stubble treatments are planned.

--Randy Higgins, Jeff Whitworth, and Phil Sloderbeck contributed to this information

Weekly Report from the Kansas State University

Insect Diagnostic Laboratory:

The following samples were submitted to the Insect Diagnostic Laboratory from April 29 through May 12, 2005:

4-29-2005, Lane County: Honeylocust Agrilus, Carpenterworm on Elm and Locust.
4-29-2005, Shawnee County: Southern Red Mite on Holly.
5-2-2005, Osborne County: Brown Spider Beetle in home.
5-2-2005, Neosho County: Carpet Beetles in bathtub.
5-4-2005, Harvey County: San Jose Scale on Apple.
5-5-2005, Pottawatomie County: Ichneumonid Wasp in home.
5-12-2005, Marion County: Winged Termites from patio.
5-12-2005, Leavenworth County: Ash Plant Bug on trees.

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 at bbrown@oznet.ksu.edu.

Bobby Brown

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