

May 15, 2003 No. 7

Black Cutworm Damage to Golf Greens

Three cutworm species are acknowledged to be pests of turfgrass: bronzed, variegated and black. Bronzed cutworms are surface feeders, and as such are considered grazers. Variegated cutworms are noted as a climbing species, ascending plants as they forage. Black cutworms are a tunneling species, preferring to remain in tunnels and feeding on plant materials which they drag into their underground sanctuaries. This tunneling habit and associated damage make the black cutworm the species to be reckoned with on putting greens which are expected to be smooth and devoid of surface defects.

A typical black cutworm damage site has 3 components (Figure 1). At the left is the main area of damage, at the right the point of entry. A tunnel connects the two end points. Zooming in on the damaged area (Figure 2), one has but to gently pull back the grass surface to expose the offending cutworm nestled into its underground gallery (Figure 3).



Figure 1



Figure 2



Figure 3

Black cutworms begin their development as eggs deposited by black cutworm moths. Usually a single egg is deposited on the tips of grass blades. This egg placement is the principal reason that black cutworms usually do not begin their development on greens. Generally, eggs deposited on greens are removed because of the daily mowings.

Smaller larvae (1st through 3rd instars) are surface feeders, and as such, remain exposed. From the 4th instar on, black cutworm larvae adopt their tunneling habit. At that time, they may set up “housekeeping” on greens, after having moved onto greens from adjacent areas with longer grass, where they had been feeding and progressing through their smaller growth stages.

All begins with the female black cutworm moth which emits a sex pheromone (Figure 4). Male moths (Figure 5, bottom) have numerous olfactory receptor sites on their somewhat

feathery antennae (as opposed to the more filamentous antennae of female moths (Figure 5, upper). Therefore, male moths are able to detect/pick-up a female's pheromone scent which he "follows" back to her. Mating and eventual egg-laying ensues.



Figure 4

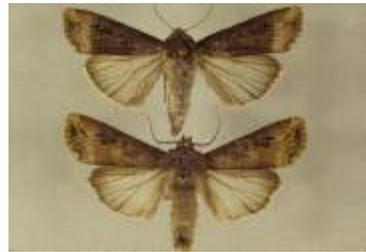


Figure 5

Because the chemical structure of the female sex attractant has been identified, it can be manufactured, and then incorporated into slow-release lures, which when placed in sticky traps adjacent to greens (Figure 6), can be used to monitor for the presence of male moths (Figure 7). By extension then, female moths will be present, and thus, accompanying egg-laying activities.



Figure 6



Figure 7

Black cutworm do not overwinter in Kansas. Their seasonal introduction (into Kansas) is via moths migrating northward from southern overwintering sites. Although there is little research to demonstrate a precise relationship between moth flights and larval damage, roughly speaking, a 6-8 week interval (after the appearance of male moths in traps) can be used as a "springtime" guide as to when tunneling and feeding activities of larger instar larvae could begin causing detectable damage to putting surfaces.

Initial migrations generally enter Kansas beginning in mid-March. For 2003, pheromone traps at the Colbert Hills Golf Course were baited March 4. The first moths of the season were collected the week of March 15-21 (a total of 5), followed by 37 for the week March 22-28 and a peak flight the week of March 29 - April 4. This same flight trend likely applies to the entirety of the state.

Thus, as of mid-May, greens should be closely monitored for the presence on black cutworms. Cutworm "trails" through the early morning dew on greens can be used to detect their presence. When changing pin placements or mowing greens during early morning hours, larvae may be observed. Greenskeepers can walk greens and visually inspect for the presence of larvae or larval damage. While "flush treatments" often are suggested as a method for detecting larvae, this may be impractical.

If and when larvae are detected, an assessment must be made as to the acceptable amount of allowable damage. Especially on putting surfaces, where there is little tolerance for any damage, curative insecticide treatments may be warranted.

Robert Bauernfeind

Carpenter Bees (*Xylocopa virginica*)

The month of May continuing into the first half of June is usually when most homeowners report carpenter bee activity in Kansas. Carpenter bees, which resemble bumble bees only lacking hair on the abdomen (for photos see http://www.pollinator.com/gallery/xylocopa_virginica.htm), are usually viewed as a pest since they can be seen flying erratically around decks or near eaves of homes. Most people become alarmed when ‘patrolling’ males appear to “dive bomb” invaders in their mating territory. However, these males have no stinger and are harmless. The carpenter bee is actually a beneficial insect since it can pollinate a large variety of plant species.

Their name comes from the damage caused to wood structures, though damage is rarely serious unless large numbers of bees are present, if several successive years of damage have been allowed to continue or if very thin wood has been infested. Entrance holes to nests are approximately 3/8” to 1/2” in diameter and usually go in approximately 1/2 inch, then turn to run horizontally, reaching six to seven inches long over the course of a summer. Carpenter bees do not consume wood, they only excavate tunnels for nesting. Woodpeckers can produce more secondary damage searching for bee larvae in the nest-tunnels. Unused holes may also present an opportunity for secondary problems such as wood-decaying fungi or other insects which may later occupy the tunnels.

To prevent carpenter bee infestations, keep exposed wood painted or varnished regularly. This will help deter bees, but may not be 100% effective. Ply-wood is about the only type of wood that carpenter bees will not occupy. Treated wood, cedar, cypress and redwood shingles and siding are also prone to attacks despite their reputations for being pest resistant.

For control of an infested nest site, products containing carbaryl (Sevin) or malathion are effective. Treatments should be made to the nest and conducted in the evening when bees are least active. Dust treatments work best when they can be sprayed into the nests using a “duster” treating directly into the entrance hole. Allow bees access to treated nesting holes for at least 24 hours to ensure exposure to the treatment. Since old tunnels are used as overwintering sites, or may be re-used the following spring for a new nest, treated holes should be plugged with putty, dowels or caulk. Paint or varnish plugged hole areas to help deter future infestations.

Sharon Dobesh

Southern Corn Leaf Beetle

Received a call this week from a crop consultant in north central Ks. that he’s finding southern corn leaf beetles damaging small corn. This insect is not normally a big problem

in Ks. and traditionally has been limited to a few areas in north east Ks. but occasionally occurs elsewhere in the state. Please keep this in mind if you start getting calls in the next couple of weeks. Feeding damage caused by these insects can be easily mistaken for cutworm damage as they can riddle small plants relatively quickly. Indications are areas in the field with dead and/or dying plants showing signs of feeding. If enough of these beetles are present they can reduce plant stands quite quickly. When looking for these beetles, slow, careful scrutiny is required because they quickly drop to the ground at the slightest disturbance. They are small (ca. 3/16-inch), well-camouflaged, gray or brownish-colored and may have soil particles clinging to them. After quickly falling to the ground they either remain motionless or hide in cracks or under loose soil. However, if you remain motionless for a few minutes they often move, making them more noticeable. Sometimes scratching the soil around the base of damaged plants, then waiting and watching will work. This may also reveal the presence of other pests, i.e. cutworms, wireworms, chinch bugs, etc. Treatment thresholds are not well established since it has been only of localized and infrequent occurrence. If you do decide to treat, please consult your county extension office for insecticides labeled for this insect.

Jeff Whitworth

Alfalfa Weevil: To cut or treat? That is the question.

With normal harvest time approaching the questions on alfalfa weevil management has become do I treat now or just cut the alfalfa and hope the problem goes away. This is not an easy question. Cutting the alfalfa is one option that can be used to help manage weevil populations and at times it can be very effective. However, it is not a foolproof solution. The first concern is how soon can the alfalfa be cut? If larval numbers are fairly high and weevil larvae are starting to cause noticeable damage, then a few days delay can lead to significant losses. Thus, if cutting is the management option chosen, then it needs to be done immediately. If weather or availability of harvest equipment may delay cutting a few days, then spraying the alfalfa prior to harvest may be a better option. The other problem with cutting rather than treating is that occasionally problems carry over to damage the re-growth. This means that if one elects to cut rather than treat, then they should watch the re-growth carefully for signs of larval or adult feeding and be ready to treat if significant populations survive after cutting. One problem that can occur with the cutting option under rainy conditions is the chance of suffering significant damage under the windrows and not being able to treat because the hay is still present. If spraying is selected over cutting, then focus on low rates of insecticides. High rates and long residuals are not needed at this stage in the season, since all the eggs have hatched and all that is needed is a quick knockdown of existing populations. Be sure to read labels carefully for the required amount of time between spraying and harvesting to avoid any unwanted insecticide residues on the hay. Treating prior to harvest should reduce chances of larvae feeding on the re-growth after cutting, however, one might still watch for adult feeding in case significant numbers of larvae had pupated prior to treatment and were thus protected from the spray.

Phil Sloderbeck

Alfalfa Weevil

Seems most fields have been treated by now and the rains have helped alfalfa plants compensate for previous damage. There is some variation in weevil life stages from south to north in the state. Thus, fields still need to be closely monitored keeping in mind the projected swathing date relative to possible treatment. After harvest, these fields still need to be monitored. Weevils present after harvest can prevent re-growth if eight or more larvae are present per square foot. Fewer larvae may retard re-growth under less favorable growing conditions. Adults may also contribute to slowing plant growth. Any questions please call your county extension office or check the World Wide Web at <http://www.oznet.ksu.edu>.

Jeff Whitworth

The following samples were submitted to the Insect Diagnostic Laboratory for the week of May 5 through May 9, 2003:

- 5-5-2003, Ottawa County: Ash Midrib Gall Midge larvae in leaves.
- 5-5-2003, Sherman County: Sod webworm from yard.
- 5-5-2003, Greenwood County: Drugstore Beetles in home.
- 5-6-2003, Johnson County: Storage Mites in pantry of home.
- 5-6-2003, Shawnee County: Lone Star Tick nymph off person.
- 5-6-2003, Russell County: Wolf Spider from home.
- 5-7-2003, Shawnee County: Lone Star Ticks off person.
- 5-8-2003, Johnson County: Moth larvae off person.
- 5-9-2003, Pottawatomie County: Various flies from home.
- 5-9-2003, Haskell County: Pine Needle Scale, Aphids, Locust Seed Borer on trees.
- 5-9-2003, Atchinson County: possible Wood Roach nymphs.

If there are any questions regarding these samples or identifications or about the identification of any arthropod please contact the Insect Diagnostician at 785-532-6154 or at bbrown@oznet.ksu.edu.

Bobby Brown

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Sincerely,

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