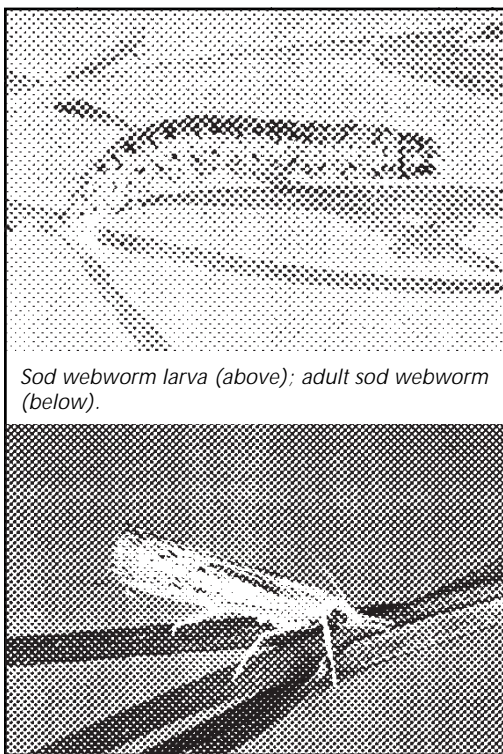


Summer Insects in Turfgrass

In the last issue of CUTT we discussed several insect pests of turfgrass found in the spring and our recommendations for control. In this issue we will discuss these same insects as they affect summer turf and which control tactics may be appropriate for summer management. Managers interested in more detailed information are directed to *Turfgrass Insect and Mite Manual* by Shetlar, Heller and Irish or *Turfgrass Insects of the United States and Canada* by Haruo Tashiro.

Sod Webworm

Overwinter as caterpillars in soil. Will usually pupate without feeding; there is little likelihood that you will see any spring feeding damage from common species. According to the species present, adult moths may be seen flying weakly over turf in mid- to late June.



Summer Management: Sod webworm caterpillars vary in color from green to beige, brown, or gray. Most are spotted. All larvae hide in thatch during the day and feed on grass blades after sundown. Persistent bird presence on turf may indicate webworm activity. Use of endophytic grasses will reduce webworm infestation and injury. Pesticides applied late in the afternoon and not irrigated in will most effectively target feeding webworms. Alternatively, insecticides applied in early morning and irrigated lightly will target webworms hiding in thatch.

Chinch Bug

Chinch bug adults and nymphs (immatures) can be seen actively feeding on turfgrass stems and foliage during the entire summer. Chinch bugs feed by sucking plant juices from turf, thereby mimicking drought stress. During extremely hot and dry periods, chinch bugs may hide down in thatch during midday making detection more difficult.

Summer Management: Determine the presence of chinch bugs through careful examination of turf and thatch or by flotation. In general, chinch bugs are a mid-summer problem and are not considered a spring pest of turf. Use of endophytic grasses and avoidance of water stress will reduce chinch bug infestation and injury.

Annual Bluegrass Weevil (formerly Hyperodes)

Large larvae and pupae and some adults may be found around the roots of annual bluegrass in mid-June through early July. All stages of the annual bluegrass weevil may be present at the same site throughout the summer.



Annual bluegrass weevil.

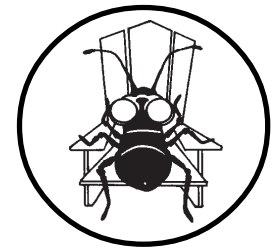
Summer Management: In general, midsummer damage by second-generation larvae is much less severe than is spring damage by the first generation. Adult weevils are targeted if chemical control is needed. Removal of leaf litter prior to adult migration to overwintering sites in the fall will reduce adult numbers.

Bluegrass Billbug

Adult billbugs may be seen wandering on driveways and sidewalks in May and June on sunny afternoons as they move from sheltered overwintering sites into turf for ultimate egg laying in June and July.

Summer Management: Because larvae feed inside grass stems, much like Annual bluegrass

continued next page



Pest Watch

Persistent bird presence on turf may indicate webworm activity.

Use of endophytic grasses and avoidance of water stress will reduce chinch bug infestation and injury.

5

Fungal endophytes found in some ryegrasses and fine fescues will reduce billbug feeding damage.

Late spring treatment for grubs is not recommended because grubs will feed for only a short period of time before pupating.

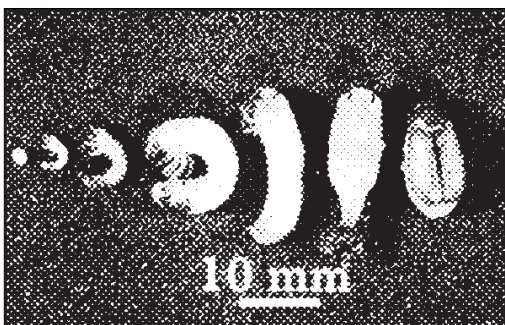
Summer Insects

continued from page 5

weevils, it is the adult stage that is the preferred target to manage. If five to ten adult weevils can be collected in a five minute period by one person, then treatment may be required. Fungal endophytes found in some ryegrasses and fine fescues will reduce billbug feeding damage.

Annual White Grub

Includes Japanese beetles, European chafers, Oriental beetles, Asiatic garden beetles, and masked chafers. Large white grubs will be moving up in the soil to the root zone to feed in early to mid spring (depending upon grub species). Grubs will feed for a period before moving down in the soil to pupate. Although the adults may emerge in June, most grubs will be in the resting or pupal stage until late June or early July. Except for Japanese beetles, adult feeding damage is minimal. Small grubs will be seen in turfgrass soil beginning in mid-July with feeding damage and predator activity increasing in late summer and early fall.



Annual white grubs.

Summer Management: Late spring (June) treatment for grubs is not recommended because grubs will feed for only a short period of time before pupating. Reduction of adult populations through trapping or insecticides have not

been shown to reduce grub damage to turf. Grub populations greater than 8-12 grubs per square foot (1 grub per standard cup cutter) in late July or early August may warrant insecticidal control to reduce turf loss.

Black Turfgrass Ataenius

Eggs are laid in soil in May and June with hatch usually within ten days. It is not unusual to find all developmental stages in the soil in late spring. Heavy grub populations (> 50 grubs/square foot) may cause general wilting of turf. Summer adults lay eggs in sod in late July and August with a second generation of larvae, pupa and adults occurring by late summer.

Summer Management: Naturally occurring milky disease often reduce ataenius populations within a year or two of a heavy infestation. High summer populations (>30-50 grubs/square foot) may require insecticide applications. Removal of leaf litter prior to adult migration to overwintering sites may reduce adult numbers.

May and June Beetles (*Phyllophaga sp.*)

Several species of large grubs have multi-year life cycles. Adults or grubs may be seen in spring with feeding damage to turfgrass roots occurring in spring, summer and fall; a situation different from the more common, annual white grubs (opposite).

Summer Management: Five to seven May or June beetle grubs/square foot is generally considered high enough to treat with insecticides. Grubs not controlled in spring will feed throughout the summer.

Black Cutworm

Will not overwinter in northeast, but must migrate from more southern regions in late

continued on page 10

Turfgrass Pest Spring Life Cycles				
Pest	June	July	August	September
Sod Webworm	P / A	L / P / A	A / L / P	A / L
Chinch Bug	N / A	N / A	N / A	N / A
An. Bluegrass Weevil	L / P	L / P / A	L / A	L / A
Bluegrass Billbug	A / L	A / L	L / P	P / A
An. White Grub	L / P / A	P / A / L	A / L	L
Bl. Turfgrass Ataenius	L / P	L / P / A	L / P / A	L / P / A
May & June Beetle	A / L	A / L / P	L / P / A	L / P / A
Black Cutworm	A	A / L	A / L / P	A / L

A = adults; L = larvae; N = nymph; P = pupa

When turf is damaged by wear or other pests, residual herbicides, such as those applied for crabgrass control, can prevent turf emergence and establishment.

Bioassay

continued from cover

every pound of herbicide active ingredient (AI) per acre suspected to be present. After incorporating activated carbon, run the bioassay again to confirm detoxification.

If option three is chosen, be aware that activated carbon does not detoxify all herbicide residues. Therefore, you may wish to run a small test in pots to determine whether the activated carbon will effectively detoxify the herbicide residues. Mix 1/2 ounce (dry measure) of activated carbon in 1 quart of water. Add 1 fluid ounce of this to each 4 inch pot of soil. [This will approximate an application of 600 lb activated carbon per acre.] Dump the soil in a bag and mix well; then return the soil to the pot and run the bioassay. If the plants grow well, proceed with the application of activated carbon to the field. If the plants are still stunted, contact your local Cooperative Extension office for assistance.

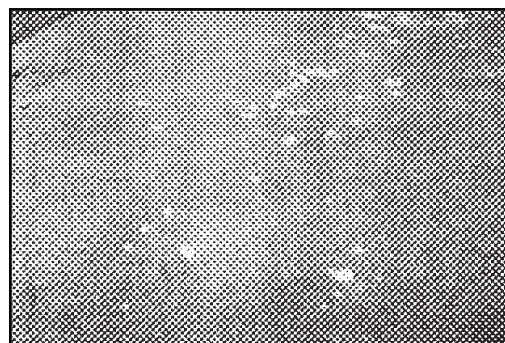
A bioassay is a simple, inexpensive, and accurate way to determine if herbicide residues are present at high enough concentrations to affect turfgrass seedling emergence and growth. By conducting a bioassay on new top soil or in new seedlings previously treated with a herbicide, you may avoid wasted time and turf seed, thus saving you time and money in the long run.

JOSEPH C. NEAL
DEPT. OF FLORICULTURE AND ORNAMENTAL HORTICULTURE

Summer Insects

continued from page 6

spring. Cutworm adults are often seen around lights in June in New York State. Caterpillars are called cutworms because they often clip grass blades at the crown and drag them into their burrows to feed. Cutworms may severely damage bentgrass greens if heavy populations are not controlled.



Cutworm damage.

Summer Management: Best method for determining heavy infestation of cutworms is to drench soil with disclosing solution. Adult moths in light traps and bird feeding in turf may suggest possible problems with cutworms. Insecticides must be watered in to reach cutworms in their burrows.

MICHAEL G. VILLANI
DEPT. OF ENTOMOLOGY - GENEVA

Subscribe now!

Make checks payable to Cornell University and mail to:
CORNELL UNIVERSITY TURFGRASS TIMES
ATTN: Norman W. Hummel, Jr.
20 Plant Science Building
Cornell University
Ithaca, NY 14853

10

What is CUTT ?

CUTT is a quarterly newsletter from the Cornell University Turfgrass Faculty. The purpose of *CUTT* is to bring to you the latest research results from Cornell, as well as other universities, in a timely manner. Each issue, published to coincide with the change in seasons, will help you understand turfgrass better, enable you to manage your turf better, and maintain healthier turf with greater environmental protection ■

Fill out the form below and send it with a nominal fee of \$8.00. Do so today, to be sure that you receive the next issue of *CUTT* ■

Attention: New York State Turfgrass Association members: You need not subscribe, NYSTA is providing you with a complimentary subscription.

Name: _____ Company: _____

Address: _____
