

Cool-season turf insect control

The wet summer of '92 suppressed much pest activity. But a normal weather pattern in July and August this year will bring the grubs back.



Billbug adult populations are reduced by *Beauvaria* spp., an entomopathogenic fungus.



The entomopathogenic fungus *Beauvaria*, was also effective against chinch bugs in the summer of 1992.

by Harry Niemczyk, Ph.D.

■ The summer of 1992 in the North Central states was the coolest, cloudiest, and—in some areas—the wettest on record. These weather factors had a major influence on suppressing damage from chinch bugs, billbugs and grubs.

The entomopathogenic fungus *Beauvaria*, which is especially ineffective under moist conditions, killed many chinch bugs. The cool temperatures and cloudy skies of July created a less-than-optimal condition for Japanese beetles to lay their eggs. Some egg laying did occur later in the summer, and caused infestations to appear in late September and October. In general, however, grub infestations and damage was down from previous years.

What effect will this have on damage potentials for 1993? If we have a normal summer, especially during July and August, do not expect much relief from grubs. Billbugs are ever present. Chinch bugs may be slow to recover after 1992, but keep in mind they have two generations each year to recover in most of the cool-season region.

What's new—Interest in and consumer demand for non-chemical controls

for insects remains high. While field evaluation of various agents continues, the results are not exactly "exciting." It is unlikely that any single agent will control damage from turfgrass insect pests as well as chemical insecticides do. It is more likely that their role, either singly or collectively, will be to act as suppressing agents to hold population levels below a threshold which would require the use of insecticides.

Insecticides: Miles, Inc. (formerly Mobay), has applied for conditional registration of a new insecticide, Merit (imidacloprid), a new, low-toxic, broad spectrum, systemic insecticide for control of grubs and some sucking insects. The results of field evaluations over the past three years have shown this material to be very effective against a broad range of grub species. If full registration is obtained as expected in the first half of 1993, full-scale marketing is expected in 1994.

O.M. Scott & Sons has announced registration of Turplex bio-insecticide to be sold to golf and other selected professional markets for control of cutworm, armyworm and sod webworm in turfgrasses. The active ingredient, azadirachtin, interferes with the normal development of the

insect (insect growth regulator—IGR) and is extracted from the seed of the neem tree, which originated in India and Burma. Test results at Ohio State University and other locations have shown that target pests die in three to 15 days after application, but that feeding usually ceases before mortality occurs.

IPM the one constant: Knowledge about the lifecycle of pests in any specific area and determining the need for treatment based on evaluation of populations at vulnerable periods during the insect's lifecycle, remains the key to successful control. The concept of IPM—intelligent plant management—depends upon this principle.

Seasonal occurrences of some of the cool-season insect pests in this region and some of the insecticides that may be effective in reducing damage from them are listed on page 52. No endorsement of products is intended, nor is criticism implied of those not mentioned here.

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Cool-season insect control strategies

Pest	Spring April-May	Summer June-August	Fall-early winter Sept.-December
Chinch bugs	When summer damage expected, preventive application of liquid or granular Dursban (1 lb. ai/A); Triumph ¹ (1 lb. ai/A) may be used as soon as bugs are active. Complete applications of insecticides by first week in May.	Treat before severe injury with Dursban (1 lb. ai/A); diazinon ^{**} (2.5-5.5 lbs. ai/A); Crusade ² (3-4 lb. ai/A) or other labeled insecticides.	Treat if needed. Generally, infestation not high enough to warrant insecticides.
Billbugs	Same as for chinch bugs.	Treat at grub rates with Triumph ¹ , diazinon ^{**} , Turcam, Mocap or Sevimol. App. in mid-late June most effective. Irrigate following application.	Treatment usually not appropriate at this time.
Sod webworms	Overwintered larvae can cause damage in April or May. When necessary, apply diazinon ^{**} (5 lb. ai/A); Triumph ¹ (1 lb. ai/A); Dylox or Proxol (6-8 lb. ai/A). Crusade ² (3-4 lbs. ai/A) Use flush of water/liquid detergent to scout for infestation level.	Apply when damage is seen, or larvae are present. Use Dursban (1 lb. ai/A), Triumph ¹ (1 lb. ai/A) diazinon ^{**} (5 lbs. ai/A); Sevin-Sevimol (6-8 lbs. ai/A); Proxol-Dylox (6-8 lbs. ai/A); Crusade ² (3-4 lbs. ai/A) or other labeled products.	Larvae cause little damage at this time. Treat in Sept. to reduce spring population.
Cutworms	Use insecticides that are effective against sod webworms. Apply late in the afternoon. Do not irrigate after liquid applications. Irrigate granular applications.	Use Orthene (1-3 lbs. ai/A); Dursban (1 lb. ai/A); Triumph ¹ (1 lb. ai/A); Proxol-Dylox (8 lbs. ai/A); Crusade ² (3-4 lbs. ai/A) Do not irrigate after liquid applications. Irrigate granular applications.	Same as for summer.
Greenbug aphid	Aphid numbers too low to detect.	Orthene (1 lb. ai/A); Dursban (1 lb. ai/A); diazinon ^{**} (2.5 lbs. ai/A)	Severe infestations may occur as late as Dec. Use same insecticides as in summer.
Grain mites	If treatment is needed, use liquid diazinon ^{**} (2-3 lbs. ai/A) or Dursban (1 lb. ai/A). Avoid repeated use of Sevin-Sevimol.	If needed, use spring treatment.	If infestations develop in December, use summer treatment.
Grubs	If treatment of overwintered grubs is needed, apply when all grubs are in the first two inches of surface soil. General or spot treatment with Triumph ¹ (2 lbs. ai/A); Oftanol, Sevin-Sevimol or Mocap (5 lbs. ai/A) or Turcam (2-4 lbs. ai/A) may be used. Crusade ² (4 lbs. ai/A). Irrigate as soon as possible after application. Green June beetle larvae are difficult to control at this time. Sevimol (2-4 lbs. ai/A) may be effective.	Existing grubs found in July or August may be treated with Triumph ¹ , Dylox, Proxol, Turcam, Oftanol, Sevin-Sevimol or Mocap. Apply at label rates. Crusade ² (4 lbs. ai/A). If soil and/or thatch is dry, irrigate thoroughly before and as soon as possible after app. Treat green June beetle with Sevin (2-4 lbs. ai/A)	Treatment can be made as late as mid-late Sept. as long as grubs stay in first inch of surface soil. Triumph ¹ , Mocap, Dylox-Proxol at label rates may be effective
Black turfgrass ateniaus	Dursban (1-2 lbs. ai/A) applied to fairways in April for control of overwintered, egg-laying adults, reduces potential for summer larval infestations. Retreatment after two weeks will provide best control.	If preventive applications were not made, spot or generally treat with Triumph ¹ (2 lbs. ai/A); Proxol Dylox (8 lbs. ai/A); Turcam (2-4 lbs. ai/A); Crusade ² (4 lbs. ai/A); or Mocap (5 lbs. ai/A) as needed.	Undeveloped larvae die with development of ground frost.

¹ For use only by commercial lawn pest control personnel, and only on golf course tees, greens and aprons, and on sod farms. See soil restrictions.

² For use in professional turf areas such as golf courses and commercial sod.

** Diazinon may not be used on golf courses of sod farms.

Source: Dr. Niemczyk