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## Insect control in cool-season turf

**There is little scientific data offering high marks on efficacy for organic, natural and biological insect controls.**

by Harry Niemczyk, Ph. D.  
Ohio State University

■ Interest in—and demand for—organic, natural, biological and bio-rational ways to control damage from insect pests of turf-grasses remains high.

The EPA, as well as other agencies and organizations, strongly encourages the use of some such insect control materials. *Collective scientific data* to date still provide relatively little encouragement where their effectiveness is concerned.

**Grub control**—Various species of insect pathogenic nematodes have been evaluated over the last eight to 10 years. While successful control is occasionally reported by researchers, no single species has provided consistent results. In the view of this author, nematodes and other forms of biological control will meet with limited success—at best—until equipment is developed to place these agents directly into the zone of grub habitation. The distance from the turf surface to the target is a formidable one for these agents to transverse. We are simply not there, *yet*.

**Cutworms and sod webworms**—Grass-eating, thatch-inhabiting sod webworms and cutworms are more readily reachable targets for biological control materials than are subsurface pests such as grubs.

Results with surface applications of

insect pathogenic nematodes such as Exhibit (*Steinernema carpocapsae*), a Ciba Geigy product for control of cutworms on golf course greens, have been somewhat encouraging. This writer encourages golf course superintendents to try them in 1992 and report their impressions and results to the company.

Further encouragement for control of this group of pests has been seen with the use of insect growth regulators (IGRs), some of which are natural extracts from the neem tree.

**Chinchbugs**—Few, if any, of the biological control materials have been effective against this thatch-inhabiting pest. Insect growth regulators show some promise for control when applications are made to the early developmental stages.

**Billbugs**—The fact that the larval stages of this—the No. 1 pest of cool-season lawns—feeds in the stems and crown of grasses, makes it a more reachable target for insect pathogenic nematodes and other biological control materials. Results of 1991 research have been encouraging, but broader field evaluation is needed to confirm effectiveness.

**Expectations**—Biological controls will not totally replace insecticides for control of insect pests of turfgrasses. Our

expectations for biological agents should be for them to act as suppressors of pest populations, not as complete control agents in themselves.

Knowledge about the lifecycle of pests in any specific area and the determination of the need for treatment based on evaluation of populations at vulnerable periods during the insect's life cycle remain the keys to successful control.

This guide points out the seasonal occurrence of the eight most important cool-season pests of this region and some of the insecticides that may be effective.



**Billbug damage is often mistaken for drought, disease or other stress. Examination of the grass removed and the root zone distinguishes billbug damage from that of other pests.**

No endorsement of products is intended, nor is criticism implied of those not mentioned.

—The author is Professor Emeritus and turf insect research coordinator at the Ohio State University's Ohio Agricultural Research & Development Center, in Wooster, Ohio.

### ELSEWHERE

**Warm-season  
insect tips,  
p. 31**

**Ornamental  
insect control,  
p. 34**

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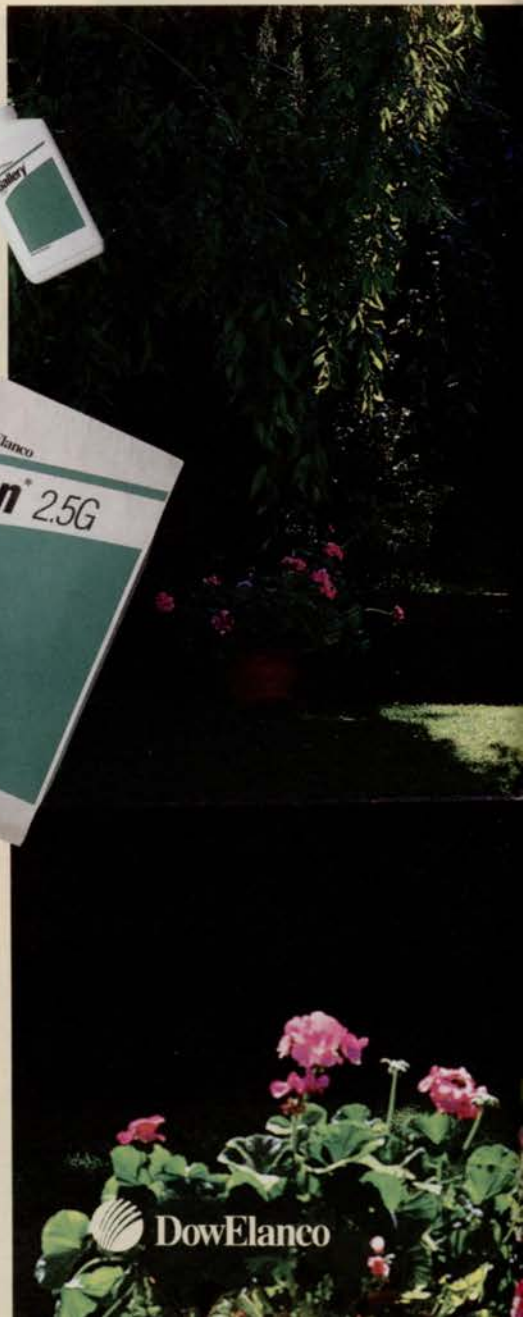
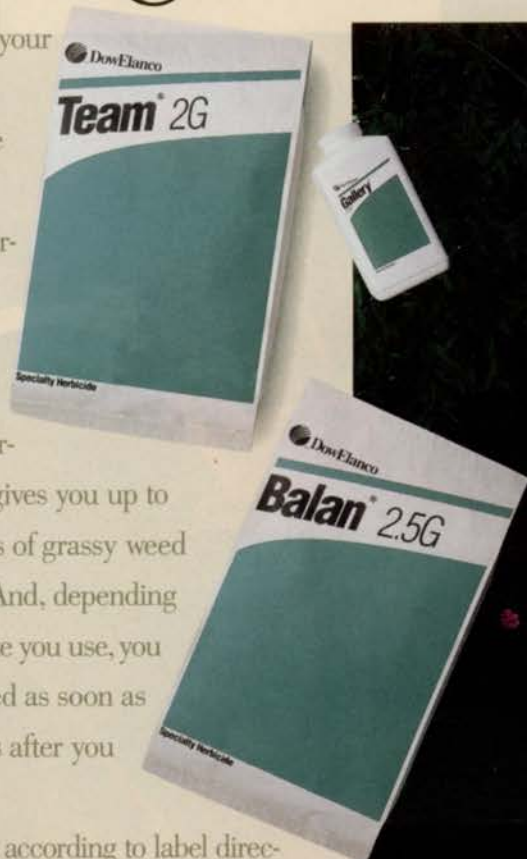
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# for people interested in



# Cool-Season Insect Control Strategies

Pest	Spring April-May	Summer June-August	Fall-early winter Sept.-Dec.
<b>Chinch bugs</b> 	When summer damage expected, preventive application of liquid or granular Dursban (1 lb. ai/A); Triumph <sup>1</sup> (1 lb. ai/A) may be used as soon as the insects become active. Applications of insecticides should be completed by first week in May.	Treat before injury is severe, with Dursban (1 lb. ai/A); diazinon** (2.5-5.5 lbs. ai/A); or other labeled insecticides.	Treat if necessary. Generally, infestation not high enough to warrant using insecticides.
<b>Billbugs</b> 	Same as for chinch bugs.	Treat at grub rates with Triumph <sup>1</sup> , diazinon**, Turcam, Mocap or Sevimol. App. in mid-late June most effective. Irrigate following application.	Treatment is usually not appropriate at this time.
<b>Sod webworms</b>	Overwintered larvae can cause damage in April or May. When necessary, apply diazinon** (5 lb. ai/A); Triumph <sup>1</sup> (1 lb. ai/A); Dylox or Proxol (6-8 lb. 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 <sup>1</sup> (1 lb. ai/A); diazinon** (5 lbs. ai/A); Sevin-Sevimol (6-8 lbs. ai/A); Proxol-Dylox (6-8 lbs. ai/A), or other labeled products.	Larvae cause little damage at this time. Treat in Sept. to reduce spring population. 
<b>Cutworms</b>	Use insecticides that are effective against sod webworms. Apply late in afternoon. Do not irrigate after liquid applications unless specified on label.	Use Orthene (1-3 lbs. ai/A); Dursban (1 lb. ai/A); Triumph <sup>1</sup> (1 lb. ai/A); Proxol-Dylox (8 lbs. ai/A). Do not irrigate following liquid applications unless specified on label.	Same as for summer. 
<b>Greenbug aphid</b> 	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 the same insecticides as in summer.
<b>Grain mites</b> 	If treatment is necessary, 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 Dec. use summer treatment.
<b>Clover mites</b> 	Liquid diazinon** (2.5 lbs. ai/A) or Dursban (1 lb. ai/A) may be used.	Treatment usually not needed. Mite is in egg stage.	Treat as needed, with liquid diazinon** (2.5 lbs. ai/A) or Dursban (1 lb. ai/A)
<b>Grubs</b> 	If treatment of overwintered grubs is necessary, apply when all grubs are in the first two inches of surface soil. General or spot treatment with Triumph <sup>1</sup> (2 lbs. ai/A); Oftanol, Sevin-Sevimol or Mocap. Mocap (5 lbs. ai/A) or Turcam (2-4 lbs. ai/A) may be used. 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 <sup>1</sup> , Dylox, Proxol, Turcam, Oftanol, Sevin-Sevimol or Mocap. Apply at label rates. 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 <sup>1</sup> , Mocap, Dylox, Proxol at labeled rates may be effective.
<b>Black turfgrass ateniensis</b>	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 may be necessary.	If preventive applications were not made, spot or generally treat with Triumph <sup>1</sup> (2 lbs. ai/A); Proxol-Dylox (8 lbs. ai/A); Turcam (2-4 lbs. ai/A) or Mocap (5 lbs. ai/A), as needed.	Undeveloped larvae die with development of ground frost.

<sup>1</sup> 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.

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

Source: Dr. Niemczyk

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