

Insect control in warm-season turf

Insect control relies on location, identification and determination of numbers.

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■ Certain warm-season turfgrasses species are more commonly attacked by specific insect pests, such as southern chinch bugs on St. Augustinegrass and ground pearls on centipedegrass.

Turfgrass management often relies on insecticides to preserve the desired turf quality. However, many new options are available, and cultural practices can be invaluable for reducing turf insect pests.

Insects damage turfgrass in four ways. They feed:

- by chewing on surface leaves and stems (cutworms, armyworms, sod webworms);
- by sucking juices out of the leaves

and stems, thus discoloring the turf (chinch bugs, two-lined spittlebugs);

- by burrowing into stems (hunting billbugs); and

- underground on grass roots (mole crickets, white grubs).

Understanding a little about an insect's lifecycle and how, where and when it feeds can greatly enhance your ability to manage that pest. Most pests have certain stages when they are most susceptible to control. This is especially important when using many of the new "biological" products.

During the past two years, we have seen a significant increase in new products like entomogenous nematodes that attack insects, neem seed extract that disrupts an insect's development, and new strains of *Bacillus thuringiensis*.

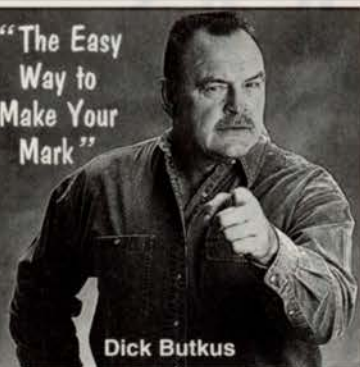


Dead areas in centipedegrass lawn resulting from a severe ground pearl infestation.

We also continue to see changes in product formulation such as the lower odor formulation of Dursban Pro and recent introductions of synthetic pyrethroids such as Astro T&O, Tempo 2, Scimitar WP and Mavrik Aquaflow. New products such as Merit 0.5G offer low mammalian toxicity and are most effective when used preventively for areas of persis-

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CONTROL OF WARM-SEASON INSECT PESTS

INSECT PEST	HOSTS	CONTROL PRACTICES
Southern chinch bugs	all warm-season grasses; prefers St. Augustinegrass	<ul style="list-style-type: none"> ● avoid over-fertilizing ● manage thatch ● irrigate during dry spells ● apply pesticides with plenty of water ● multiple treatments usually necessary
Two-lined spittlebugs	all warm-season grasses	<ul style="list-style-type: none"> ● control adults on ornamentals like hollies ● treat on cloudy days when possible, since spittlebugs are higher up on turf ● begin monitoring in early summer
Cutworms, armyworms	all warm-season grasses	<ul style="list-style-type: none"> ● use "soap flush" to detect ● treat late in day ● do not mow and remove clippings for 1-3 days ● entomogenous nematode products available ● may be present from early spring to late fall
Mole crickets	prefers bahiagrass and close-cut bermudagrass	<ul style="list-style-type: none"> ● use "soap flush" to detect egg hatch ● treat in June/July as soon as eggs hatch ● follow-up treatments usually necessary ● entomogenous nematode products available ● look for adult activity in March/April to define areas of high risk for egg hatch
White grubs	all warm-season grasses	<ul style="list-style-type: none"> ● attracted to low-cut, highly-maintained turf ● dig squares of sod 4-6" deep in late August to detect small grubs ● treatments most effective in late August ● avoid ornamentals attractive to adult stages such as Japanese beetles and June or May beetles
Fire ants	all warm-season grasses	<ul style="list-style-type: none"> ● best controlled in spring and fall when workers are actively foraging for food ● mound treatments generally most effective, but are labor-intensive ● controls must be continued once program is started (fire ants will return at higher levels if treatments are stopped) ● do not disturb mounds during treatment ● use baits prior to contact insecticides to allow workers to return bait to mound
Ground pearls	most commonly attacks bermudagrass and centipede grass	<ul style="list-style-type: none"> ● no known effective control measures ● practice good turf management to increase turf tolerance ● irrigate during dry weather

Source: Dr. Brandenburg

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tent white grub infestations.

Any area suspected of harboring insects must be thoroughly searched to find the suspected pest. The insect must then be properly identified, its relative abundance determined (is it really causing a problem?), and the appropriate control measure applied.

Cultural practices such as thatch management, irrigation, fertility and others work best as strategies that prevent insects from reaching pest status.

Studies in North Carolina show that soil insect pests such as mole crickets and white grubs move deeper into the soil during dry periods, making them more difficult to control. Pre-treatment irrigation can move the insect closer to the soil surface. After insecticide application, a post-treatment irrigation waters in the insecticide and its efficacy is usually improved.

Some of the more common insects attacking warm-season grasses are listed below. Others not discussed here include hunting billbug, bermudagrass mite, bermudagrass scale, sod webworm and rhodesgrass mealybug and southern

chinch bugs.

☐ **Cutworms and armyworms** attack all species of turfgrasses throughout the year, although the fall armyworm is generally a later-season pest. These insects often cause severe damage as they often show up unexpectedly and aren't detected until they have fed for a couple of weeks. Using a soap flush of two tablespoons of liquid dishwashing detergent in two gallons of water will bring these worms to the surface for easy detection.

☐ **Mole crickets** are one of the most troublesome pests in the Southeast. Their aggressive feeding and tunnelling on bermudagrass makes them a serious pest of golf courses, athletic fields and commercial properties. Timing of control measures is critical for effective management.

☐ **White grubs** occur sporadically in warm-season turf. They are difficult to control because they often feed undetected on the roots, and it is more difficult to get pesticides to the target site.

☐ **Green June beetle grubs** tunnel near the soil surface and create unsightly



Severe mold cricket tunnelling in bermudagrass. If left uncontrolled, large bare areas totally void of turfgrass result.

mounds. While they are relatively easy to control, they often cause significant tunnelling damage before their presence is detected. Also, they generally die on the turf surface, leaving an unsightly mess.

☐ **Ground pearls** are a serious pest of centipedegrass. They feed on grass roots, causing the grass to turn yellow and then die. Irregular-shaped areas of dead turf with weeds are a typical symptom. No control measures are known for this pest.

—Dr. Brandenburg is a professor and extension entomologist at North Carolina State University.

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