

Southern Chinch Bug Management on St. Augustinegrass ¹

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Several chinch bug species damage turfgrasses in the U.S., but one of the most destructive species in Florida is the southern chinch bug, *Blissus insularis* Barber. It is distributed throughout the southeastern U.S. and west to Texas. It may feed on other turfgrasses and weeds, but St. Augustinegrass is its primary host.

Biology and Behavior

Adults are about 1/10 of an inch long. Wings are folded flat on the back and are shiny white with a triangular-shaped black marking in the middle of the outer edge of each wing. Adults may have long or short wings, and populations often contain both (Figure 1).

Tiny eggs are laid singly or a few at a time in leaf sheaths, soft soil, or other protected areas. The eggs are white when first laid and turn bright orange just before hatching. Depending on climate conditions, eggs hatch in about 10 days and nymphs mature in about 3 weeks. Young nymphs are reddish-orange with a white band across the back, darken in color as



Figure 1. Nymph (left), short-winged (center) and long-winged (right) adult forms of the southern chinch bug. Credits: R. H. Cherry, University of Florida

they mature, and turn black before becoming adults. All life stages are present year-round in most of the state. There are 3 to 4 generations per year in north Florida and 7 to 10 in south Florida.

Southern chinch bugs usually occur in open, sunny areas, especially drought-stressed areas near sidewalks and driveways (Figure 2). They live in the thatch and suck fluids from the crowns, stems and

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stolons of grasses with their needle-like mouthparts. This causes the grass to turn yellow and die. The insects tend to feed in groups, so dead patches of grass appear and seem to get larger as the chinch bugs spread through the grass (Figure 3). Southern chinch bugs mainly walk and rarely fly.



Figure 2. Patch of St. Augustinegrass killed by southern chinch bugs. Credits: Eileen A. Buss, University of Florida



Figure 3. St. Augustinegrass yard killed by southern chinch bugs. Credits: Eileen A. Buss, University of Florida

Detecting Infestations

Other factors, such as disease, nutritional imbalances and drought, can cause off-color areas to occur in lawns. Therefore, the lawn should be carefully examined to determine if corrective measures are needed.

To find southern chinch bugs, part the grass near yellowed areas and look at the soil surface and base of the turf. Examine several different areas if chinch bugs aren't immediately found. Heavy infestations are easy to identify because large numbers may migrate across sidewalks and driveways.

A flotation technique can also be used to detect infestations. Cut both ends out of a metal can and push one end 2-3 inches into the soil on green or yellowing grass (not dead grass). Slowly fill with water and count the number of chinch bugs that float to the top within 5 minutes. Keep the water level above the grass surface. If nothing emerges in the first area, examine at least 3 or 4 other areas.

Another, less labor-intensive option is to use a Dust Buster or hand-held vacuum cleaner to suck up any chinch bugs near damaged areas. Remove the filter, dump the contents on the sidewalk, and look for nymphs and adults. Repeat in several damaged areas.

Cultural Control

Cultural practices may influence the susceptibility of St. Augustinegrass to chinch bugs. Rapid growth resulting from frequent applications of water soluble inorganic nitrogen fertilizers may increase the chance of chinch bug attack. Responsible use of slow-release nitrogen fertilizers may reduce the susceptibility of St. Augustinegrass to infestations. See ENH 5 St. Augustinegrass for Florida Lawns (DLN LH010).

Prolonged drought stress can encourage southern chinch bug problems. If the edges of the grass leaves start curling and appear to have a dull bluish-gray color, water the lawn as soon as possible with 3/4 of an inch of water. Do not irrigate again until wilting begins to occur.

Many insects, including southern chinch bugs, live in thatch. Thatch is a layer of accumulated dead plant roots, stems, rhizomes, and stolons between the live plant and the soil. Over-watering or over-fertilization can cause lawn grasses to develop a thick thatch layer. Insecticide treatments can also bind to the thatch layer, instead of reaching soil-dwelling pests. Excessive thatch should be mechanically removed (vertical mowing, power raking, etc). Proper mowing practices can make grass more tolerant to chinch bugs and greatly improve the appearance of the lawn. St. Augustinegrass should be mowed to a height of 3 - 4 inches.

Host Plant Resistance

Several varieties of St. Augustinegrass are available for use in Florida, but the most common one is Floratam. Floratam was believed to be resistant to chinch bugs, however, research has identified that most southern chinch bugs can now damage it. Other varieties such as Bitterblue, Floratine, Floralawn, and Seville are somewhat chinch bug resistant. Common, Roselawn, Raleigh, Delmar, and Jade are very susceptible. For more information on these varieties see ENH-5 St. Augustinegrass for Florida Lawns (DLN LH010).

Biological Control

Common natural enemies of the southern chinch bug are big-eyed bugs (*Geocoris* spp.) (Figure 4) and a predatory earwig (*Labidura ripara*). A small wasp, *Eumicrosoma benefica* Gahan, parasitizes chinch bug eggs. Big-eyed bugs and anthocorids (another group of predators) are similar to chinch bugs in size and shape and are often mistaken for them. Unnecessary insecticide use can reduce these natural enemies and their ability to suppress pest populations.

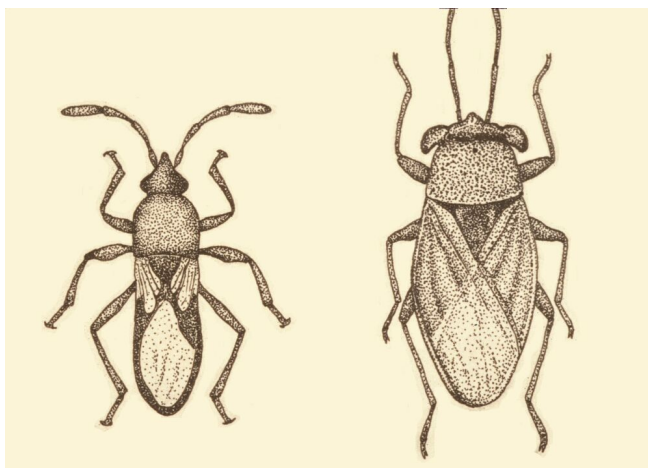


Figure 4. Southern chinch bug and big-eyed bug adults.

Chemical Control

If 20 - 25 chinch bugs per square foot are detected, an insecticide application may be necessary (Table 1 and Table 2). Spot treat when infestations are first noticed and damage is minimal. However, the entire area should be treated if damage is widespread. Treat dead and dying St. Augustinegrass and a 5-foot buffer area around the damage. Inspect two to three

times at biweekly intervals to determine if the infestation has been controlled. Since most insecticides do not kill the eggs, repeated applications may be needed to gain control.

All directions and the insecticide label should be read and understood before a product is used, particularly the dosage rates, application procedures, and precautions. Immediate irrigation following treatment may be necessary.

Table 1. Active Ingredients, trade names, and formulations of turfgrass pesticides available for professional use.

Active Ingredient	Florida Registered Products	Chemical Class	Signal Word
Bifenthrin	Talstar Lawn & Tree Flowable Talstar F, CA Granular, PL Granular Talstar 0.069% Plus Fertilizer	Pyrethroid	Caution Caution Caution
Carbaryl	Sevin 10G, SL Sevin 80 WSP	Carbamate	Caution Warning
Cyfluthrin	Tempo 20 WP, SC Ultra, Ultra WP	Pyrethroid	Caution
Cypermethrin	Demon TC	Pyrethroid	Warning
Deltamethrin	DeltaGard T&O 5SC, Granular, T&O Granular	Pyrethroid	Caution
Imidacloprid	Merit 0.5 G, 2, 75 WP, 75 WSP	ChloronicotinyI	Caution
Lambda-cyhalothrin	Demand CS Scimitar CS Scimitar WP	Pyrethroid	Caution Caution Warning
Permethrin	Astro Permethrin Pro Termite - Turf - Ornamental	Pyrethroid	Caution Caution

Table 2. Active ingredients, trade names, and formulations of turfgrass pesticides available for homeowner use.

Active Ingredient	Florida Registered Products	Chemical Class	Signal Word
Bifenthrin	Scott's MaxGard Insect Protection with Turf Builder	Pyrethroid	Caution
Cyfluthrin	Bayer Advanced Lawn & Garden Multi-Insect Killer	Pyrethroid	Caution
Lambda-cyhalothrin	Spectracide - Triazicide Soil & Turf Insect Killer Granules	Pyrethroid	Caution
Neem Oil	Safer® BioNeem	Biorational	Caution
Permethrin	No Pest - Ant, Flea, and Tick Granules Real Kill Multi-Purpose Insect Killer Real Kill Ant & Grub Lawn & Garden Insect Killer Spectracide Bug Stop Insect Control Granules	Pyrethroid	Caution Caution Caution Caution