



Update on Southern Chinch Bug Management in Florida (March 2007)

Eileen A. Buss, Ph.D., Entomology & Nematology Dept., UF/IFAS

What are chinch bugs and why are they killing my St. Augustinegrass lawn?

Chinch bugs are small insects (1/8th inch long) with straw-like mouthparts that feed on the fluids in grass plants. Immatures (nymphs) and adults feed in groups while hidden at the base of the grass. Infested turf eventually grows slower, yellows, then dies in small patches. The speed of turf death probably depends on chinch bug density and the turf's overall health.

Why are chinch bugs hard to control?

- The insects and/or their damage could be easily misdiagnosed. Scalping, animal urine, diseases, and other things can cause dead spots in St. Augustinegrass.
- Each year, chinch bugs have 3-10 generations (active from April to October in northern Florida, and from March to November in southern Florida). All life stages (eggs, nymphs, adults) are present at the same time. Current insecticides only kill nymphs and adults, so eggs can still hatch and produce another generation. Chinch bugs usually complete their development from egg to adult in 5-6 weeks. One female can lay up to 300 eggs in her lifetime.
- Natural enemies (e.g., big-eyed bugs, spiders, a parasitic wasp, and others) are not abundant and efficient enough to keep chinch bug populations under complete control, all the time.
- Some insecticides bind tightly to organic matter (e.g., leaf blades, thatch) if they are not applied with enough water volume or are not irrigated soon after an application. The insecticides must get to where the insects are living and feeding to be effective.
- Most insecticides used against chinch bugs break down within 2 months or less, and might need to be reapplied. Factors that affect the length of insecticide residual include pH, soil type, and amount of thatch.
- The insecticide dose may be too low. Be sure to follow label instructions to apply the correct amount of product.
- Some chinch bug populations have been repeatedly treated with similar insecticides for years. A few chinch bugs may survive each treatment, reproduce, and pass on their ability to tolerate the insecticides. Since chinch bugs don't move far, insecticide tolerance/resistance may be localized to areas that have been under long-term, intensive lawn care.
- Over-fertilization may lead to excessive thatch build-up and provide chinch bugs with more food, so they may develop faster, more of them may survive, and females may lay more eggs.

Should I work with a professional lawn service or manage the lawn myself?

- Commercial applicators are trained to correctly identify pests, and can better manage pests with properly timed applications of products known to be effective.
- Some new insecticides and certain formulations of older ones are not available to homeowners, so only professional applicators can buy them.
- If a lawn has a history of infestation, consider doing one spring and maybe a late summer application to keep pest numbers low. Fewer applications mean that natural enemies can live to help suppress pests.
- Lawns that are not treated with insecticide 3-6 times a year are less likely to have pesticide resistant chinch bugs.

What can I, the consumer, do to help?

- Notify your lawn service before chinch bugs are abundant and turf damage becomes severe.
- Turn on the irrigation after an application has been done, if directed to do so.
- Make sure your irrigation system is functioning properly. Chinch bug damage resembles drought damage.
- Try to understand that lawn care is a service industry, and they are doing their best to ensure that you have a lawn that you can safely enjoy.

What is the industry doing about insecticide-resistant chinch bugs?

- Where resistance is suspected, insecticides with different modes of action should be rotated. Based on UF testing, consistently effective products contain one of the active ingredients: bifenthrin, carbaryl, clothianidin, or trichlorfon.
- Higher label rates of these insecticides might be used to ensure that most of the "resistant" chinch bugs are killed. This may, however, increase the cost of chinch bug control.
- UF researchers are studying how cultural and biological controls affect chinch bug populations.