

## Best Management Practices: Chinch bugs

**Description:** The southern chinch bug, *Blissus insularis* (Barber), is the most damaging insect pest of St. Augustinegrass. It will occasionally feed on other grasses including bermudagrass, bahiagrass, zoysiagrass, and centipedegrass. The distribution of *B. insularis* ranges from southern North Carolina south to the Florida Keys and westward to central Texas. Damaging populations have also been reported in southern California, Mexico, and Hawaii. The hairy chinch bug, *Blissus leucopterus hirtus* (Montandon), is a serious pest of cool season turfgrasses. Preferred hosts are fine fescues, perennial ryegrasses, bluegrasses, bentgrass and zoysiagrass. These grasses are also susceptible to damage by the common chinch bug, *Blissus leucopterus leucopterus*. The physical appearance of these species is very similar and it is difficult to positively identify which species is infesting cool season turf. The hairy chinch bug is distributed through eastern Canada and the northeastern United States as far south as Virginia and west to Minnesota. The Buffalograss chinch bug, *Blissus sp.*, is a common pest on Buffalograss and resembles the hairy chinch bug.

**Environmental Condition:** Chinch bugs damage turf by inserting their piercing-sucking mouthparts into the crowns, stems and stolons of grass plants to remove sap. During this process they inject a toxin that causes the grass to turn yellow. Thus, damage appears as irregular yellow patches of turf. These areas turn reddish brown and eventually die, while the chinch bugs move outward into healthy turf. A yellow halo around the damaged area is typical of a chinch bug infestation. Chinch bug damage usually shows up first in sunny areas that contain heat or drought stressed grass and very often in areas near pavement or sidewalks. Although damaging infestations commonly occur from June into September, weather conditions may prolong this period, especially in the range of the southern chinch bug. In south Florida, all stages of the southern chinch bug are present during the entire year.

**Symptom and Identification:** Adult chinch bugs are black with white wings and are 3.0-3.6 mm long. Some adults possess short, non-functional wings. Chinch bugs develop through five nymphal instars. First and second instars of the southern chinch bug are bright orange while the third and fourth instars are dark red and the final instar is black and closely resembles the adult. First and second instars of the hairy chinch bug are bright red; the third instars are orange; the fourth instars are orange-brown; and the final instar is black. The eggs of all species are white and oval with a blunt end and measure 0.25 X 0.75 mm. Chinch bug development is temperature dependent, and eggs may require as little as one week to hatch during the summer but may require more than a month during the spring. Nymphal development typically requires four to six weeks during the summer. Southern chinch bugs produce three to seven generations per year, depending on the geographic location and weather. Hairy chinch bugs produce two generations per year from southern New England through the Middle Atlantic States and west to Ohio and one generation per year in upstate New York and southern Ontario, Canada.

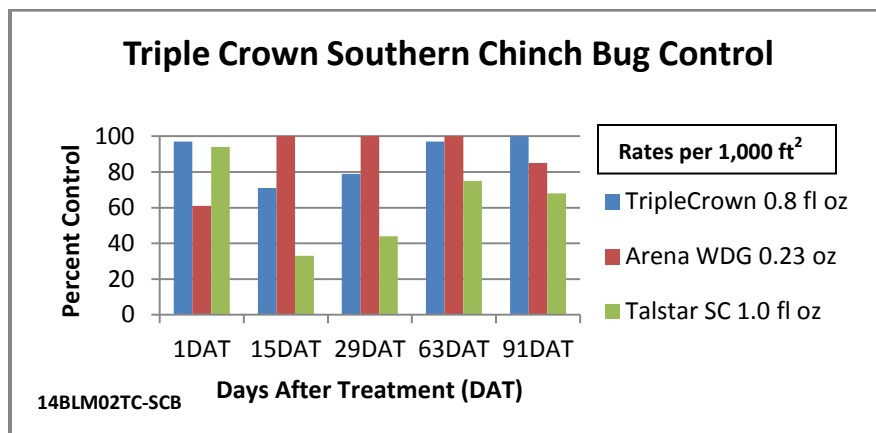
**Management:** Insecticide applications are typically used to reduce chinch bug populations to a manageable level. Early detection is the key to optimizing chinch bug control because damage symptoms continue to appear for one or two weeks after an insecticide application has stopped chinch bug feeding. Undetected chinch bug infestations can result in population explosions, containing all life stages, which are much more difficult to bring under satisfactory control. Turf exhibiting drought or heat stress symptoms should be visually inspected by spreading the canopy or by using the flotation technique.

A generally recognized threshold warranting control is 25 chinch bugs per square foot. When drought conditions are coupled with irrigation restrictions and high summer temperatures, the resulting turf stress invites serious chinch bug infestations. Such situations may require additional insecticidal treatments to reduce the chinch bug infestation. Too little water applied with the insecticide can result in poor control of the chinch bug population, especially with increasing amounts of vegetation. Application volumes of 2.0+ gal/1000 sq ft should resolve coverage related control problems.

**Cultural:** Maintain healthy turf and reduce stress through proper irrigation and maintenance. Avoid excess nitrogen that could produce excess growth which is inviting to chinch bugs

**Chemical:** Apply **Triple Crown® T&O Insecticide** or **Triple Crown Golf Insecticide** at the rate of 0.46 to .08 fluid ounces per 1,000 square feet in a manner that maximizes penetration of the insecticide into the thatch layer where most chinch bugs are located. Applying Triple Crown in a sufficient volume (2.0+ gallons of water per 1,000 square feet) allowing it to reach the base of the grass plants will also minimize its removal by subsequent mowing. Where feasible, irrigation of the grass area before treatment will increase penetration to the thatch as will higher application volumes. This is especially true on sites where a long mowing height is maintained or where the thatch layer is excessive, as commonly occurs on St. Augustinegrass.

During midsummer, higher application rates may be required to control heavy populations where various life stages are present. The maximum application rate of Triple Crown for chinch bug control is 0.8 fluid ounces per 1,000 square feet.



**Selected References:**

Niemczyk, H. 1981. Destructive Turf Insects. HDN Book Sales. Wooster, OH. Reinert, J.A., P.R. Heller and R.L. Crocker. 1995. Chinch Bugs. In Brandenburg, R.L. and M.G. Villani (eds.) Handbook of Turfgrass Insect Pests. Entomological Society of America, Lanham, MD. Tashiro, H. 1987. Turfgrass Insects of the United States and Canada. Comstock Publishing Associates, Cornell University Press. Ithaca, NY. Watschke, T.L., P.H. Dernoeden and D. Shetlar. 1994. Managing Turfgrass Pests. Lewis Publishers, CRC Press. Boca Raton, FL.

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