Turf Tips for the homeowner

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Chinch Bugs: Biology and Control

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The hairy chinch bug (*B. lecuopterus hirtus*) and the common chinch bug (*B. leucopterus leucopterus*) are the most frequently observed species in our area. Chinch bugs can be serious problems in lawns when conditions are warm and dry. Their damage is most frequently observed in late summer or early fall and is often attributed to some other agent. The following information should help in diagnosing and controlling chinch bug problems.

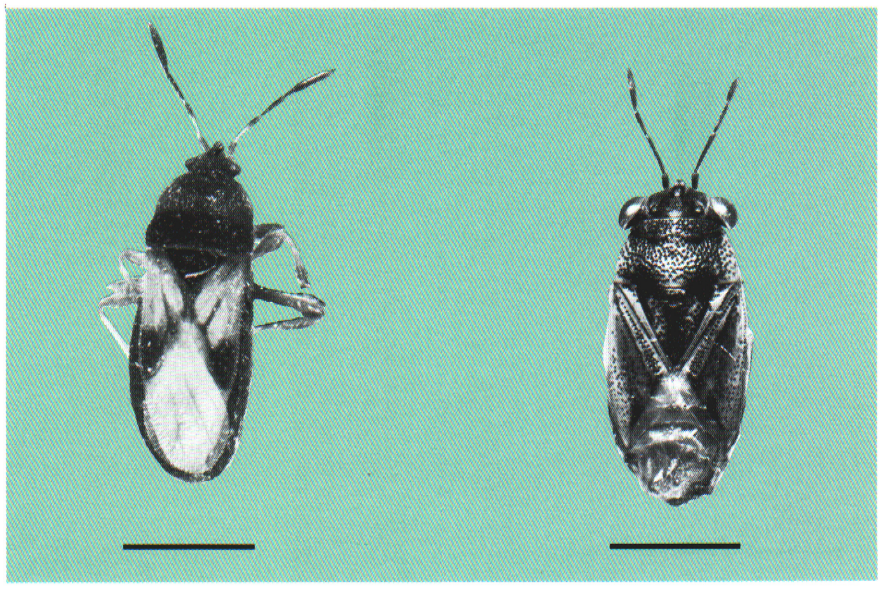

Figure 1. Chinch bug adult (left). Big eyed bug (right), a beneficial insect (predator) often confused with chinch bugs. The solid line under each bug represents 1/16". (Photo by J. Haefner)

Hosts: Chinch bugs will feed on a variety of northern grasses, but there are some preferences. The Kentucky bluegrass varieties Flyking and Barron appear to be less favorable to chinch bugs, while Adephi is very susceptible to injury. The perennial rye grass varieties Yorktown, Diplomat and Citation, among others, are especially favored by chinch bugs. Score, Pennfine, and Manhatten are more resistant to feeding damage. Fescues are also attacked, especially the Jamestown and Barver varieties. Bent grass is also a host for this insect.

Damage: The presence of irregularly shaped yellow patches 2-3 feet in diameter which turn brown and die is characteristic of chinch bug injury. Clumps of clover and other non-grass weeds may survive in these areas. Plant damage results not only from withdrawal of sap, but chinch bug saliva contains substances toxic to the plant and the puncture wounds often block plant conducting vessels.

Similar Damage: Drought or heat stress may cause similar browning of turf, but proper watering will quickly rejuvenate the lawn. Diseases such as striped smut can give the lawn a patchy or clumped appearance, but there is usually more brown or dying grass when chinch bugs are the problem.

How to Identify: Adults are small black bugs, 3/16" long with white wings and reddish legs (Fig. 1). Nymphs are smaller than adults, wingless, brick red in color with a transverse white band on the back, becoming black with age.

Damaging Stages: Both nymphs and adults damage grass, but the most serious damage is done by the nymphs.

Life Cycle: Adults overwinter in protected areas near lawns. They emerge in the late spring and early summer, when temperatures reach the 70's, mate and lay eggs in the leaf sheaths of grass plants. Each female lays an average of 200 eggs near the crown during the 3 to 4 weeks it is alive. Nymphs require approximately 4 to 6 weeks to develop to the adult stage. First generation nymphs occur in late June to July and second generation nymphs are present in mid-August (Fig. 2).

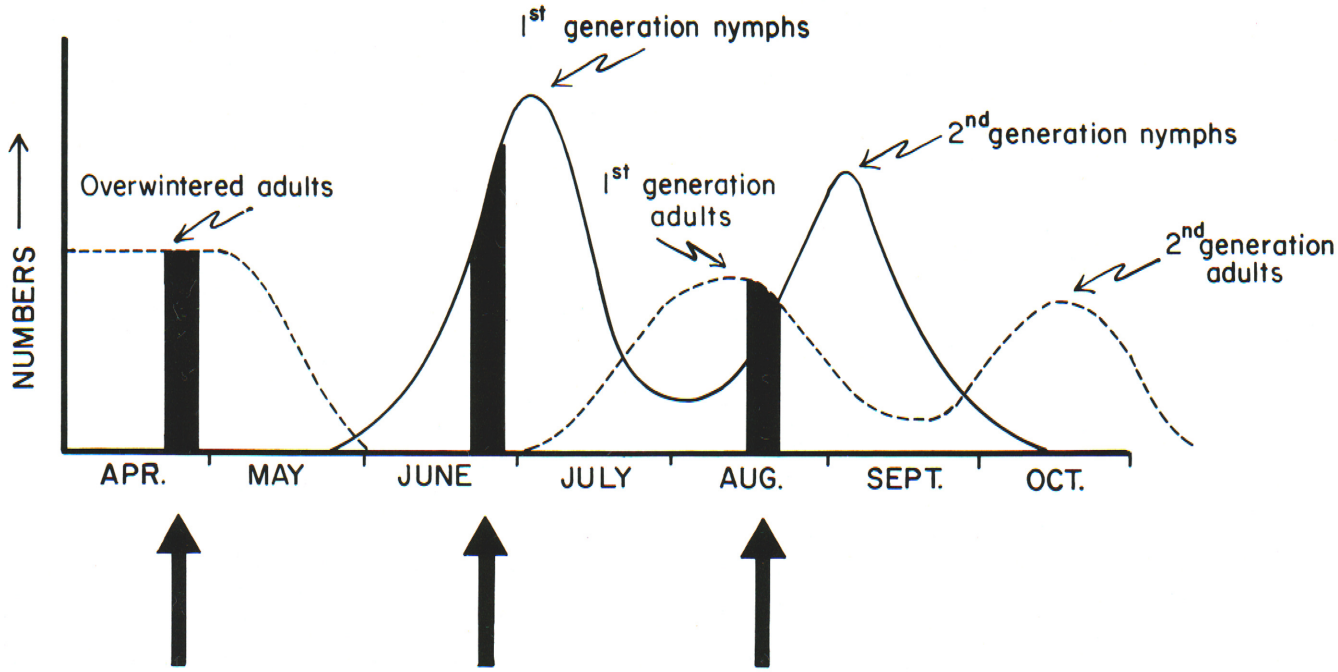

Figure 2. Generalized life cycle of chinch bugs in Michigan. Arrows indicate optimum control periods.

Weather and Chinch Bug Injury: A warm dry spring followed by below average rainfall in the early summer favors the buildup of chinch bug populations. Conversely, a cold wet spring will drastically slow population growth, and heavy rainfall in June and early July during egg hatch will reduce nymph survival. Much of this mortality is due to a fungus (*Beauveria spp.*) that attacks the bugs during cool, wet conditions. The fungus is ineffective during hot dry periods when chinch bug buildup occurs.

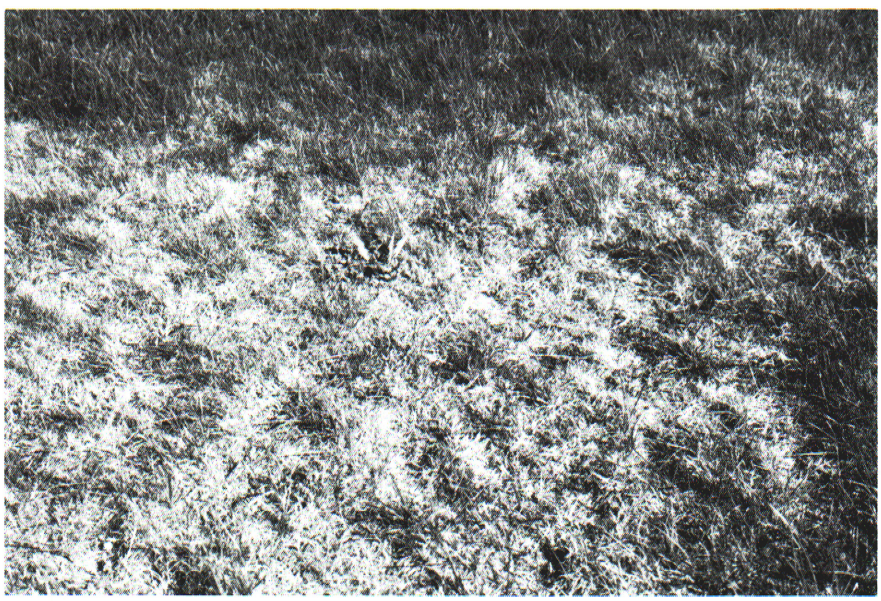

Figure 3. Chinch bug damage.

How to Diagnose Chinch Bug Damage:

1) Closely examine the green borders of the dead or dying turf areas for the presence of nymphs and adults. Remember, these bugs generally move outwards from the center of the initial infestation and feed on living grass.

2) A small area of lawn can be flooded to the puddling point to float bugs to the surface, or a coffee can without a bottom can be pushed into the turf and filled with water. Chinch bugs present will float to the surface in 5-10 minutes. This technique should be repeated 5-6 times in a lawn in case of uneven bug distributions. Several hundred bugs per square foot may be present in heavily infested lawns (Fig. 3).

Control

Cultural: Since chinch bugs are usually not a problem in well irrigated turf, diligent watering of turf during hot dry weather will help reduce it. Reducing the amount of nitrogen fertilization has also been shown to be effective in limiting chinch bug injury.

Chemical: If chinch bug has been a problem, applications of one of the insecticides listed in Table I will prevent additional damage. Two applications 14 days apart, beginning in early to mid-June, will control 1st generation nymphs. Applications in early to mid-August will control 2nd generation nymphs. When there is no history of chinch bug injury, treat when the bugs are first observed. However, in lawns with chronic chinch bug problems, consider treatments in late April to control overwintered adults.

Proper watering and fertilization (see cultural bulletins in this series) will insure that damaged areas of turf will recover quickly. Adjacent lawns should be inspected and treated, if necessary, to prevent reinfestations from occurring.

Table 1. Insecticides for chinch bug control.

Chemical Name	Trade Name	Formulation*	Company Available From**
Aspon	Aspon	G, EC	Blackleaf Bonide Ortho
Carbaryl	Sevin	D; G; WP, EC	Blackleaf Bonide Faesy & Besthoff Pratt Science
Chlorpyrifos	Dursban	G, EC	Bonide Ortho Pratt Scotts Science
Diazinon	Diazinon or Spectracide	G, EC, D	Bonide Ciba-Geigy Faesy & Besthoff Fertilome Ortho Pratt Science Scotts

*D = Dust
G = Granular
EC = Emulsifiable Concentrate (liquid)
WP = Wettable Powder

**Companies listed are those whose products are commonly available in Michigan lawn and garden centers and their inclusion does not constitute an endorsement. Many of the same chemicals are sold by other formulators and will perform equally well. Additional companies were not listed here because of the unavailability of chemical labels.

CONSULT THE PESTICIDE LABEL FOR APPLICATION RATES AND SPECIAL INSTRUCTIONS

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