

Controlling Hairy Chinch Bug, Increasing Peril to Turf*

By ROBERT S. FILMER

Associate Research Specialist in Entomology, New Jersey Experimental Station

THE hairy chinch bug (*Blissus hirtus*) is distributed in the eastern seaboard states from Maine to Florida and westward to Alleghany Mountains and eastern Ohio. While we think of this insect as a new turf pest reports can be found of severe chinch bug injury to turf grasses from Brooklyn, N. Y. 1898; Bristol, Connecticut 1915 and 1923; Boston, Massachusetts 1920, and Florida 1921. Reports in recent years indicate that this insect has become an established pest of turf grasses in the eastern seaboard states.

Adult chinch bugs are black in color and vary from $\frac{1}{8}$ to $\frac{1}{4}$ inch in length. The wings, which are white with black markings, are folded flat on the back and give this insect a greyish appearance when viewed from above. The nymphs are wingless and at first bright red in color but become darker as they mature. As the insect feeds on the crowns of grasses the young nymphs are rarely found unless a careful search is made.

There are two generations of hairy chinch bugs per year. They overwinter as adults in dense stands of grass or turf. Adults become active with first warm days of spring but mating and egg laying does not take place until mid May. First generation nymphs appear about the first of June and pass through 5 nymphal instars to become adults about the first of July. The second generation nymphs appear about the middle of July and complete their development by late August or early September. Adults of the second generation are active until cool weather forces them to seek hibernating quarters.

The food of the chinch bug is plant juices which they obtain by piercing the plant with their mouth parts and by sucking out the plant juices. Excessive feeding, or possibly the toxic substance which the insect injects into the plant as it feeds, is responsible for the injury or death of the plant. In the early nymphal stages chinch bugs are ravenous feeders and have pronounced gregarious tendencies which results in localized areas or spots of injured turf. As soon as a food plant is weakened or killed the nymphs move to nearby uninjured plants thus causing a gradual extension of the injured turf area. During the early stages, nymphal activity is restricted to movement to new food

plants but as they approach maturity they become wanderers and at this period migration to uninfested areas occurs.

The hairy chinch bug feeds primarily on grasses; rye grasses, blue grasses, the fescues and bent grasses. All are subjected to chinch bug attack, but the most serious injury has been observed in bent grass turf mixtures during hot, dry seasons.

Earliest symptoms of chinch bug feeding is the browning of the grass, usually in spots. Injury resembles drought injury or sun scald, and may be confused with brown patch or other turf diseases or with webworm or Japanese beetle injury. Severe chinch bug infestations usually cause death of grasses and result in pure stands of clover, crabgrass or weeds. Injury first appears on high, dry areas and along borders of lawns where walks or roads serve as barriers to chinch bug migrations. They are sun-loving insects and will avoid shaded areas.

The most satisfactory method of determining the density of chinch bug population in a turf area is by the hot water method. We found a very satisfactory counting chamber can be made from a 5 gallon oil pail, by cutting off the bottom of the pail with a hacksaw. This cylinder is then pushed into the turf and water heated to 105°F. is poured into the cylinder. The hot water activates the chinch bugs which rise to the surface where they can be removed with a small vial and counted. Ten to 15 minutes is adequate time for all the chinch bugs to rise to the surface. Where hot water is not available, pyrethrum solutions at 1 to 2400 dilution can be used to stimulate the insects, but this method is not as satisfactory as the hot water method.

Chinch Bug Controls

Various materials have been tested for chinch bug control. Calcium cyanide, tobacco and rotenone dusts and nicotine sprays have been recommended by various workers and have been used with varying success in recent years.

During 1945 the New Jersey Agricultural Experiment Station workers tested 10 per cent Sabadilla dust and 10 per cent DDT dust and found these new materials more satisfactory than the older treatments. Applications of 100 pounds per acre of 10 per cent dust of either material

* (Notes of GSA convention paper.)

(Continued on Page 61)

JACK L. DARAY

Golf Architect

Designing and building fine golf courses for more than 25 years Consultant on postwar remodeling.

Cherry Hills Golf Club, Flossmoor, Ill.

Phone Homewood 781

SEEDS - SUPPLIES - EQUIPMENT

for

The Most Exacting Golf Courses

McMAHAN'S SEED STORE

LaPorte

Indiana

ground, thereby reducing the loss of moisture from direct evaporation. Consequently the turf stays green longer and survives drought better. Shade also helps discourage clover and crabgrass.

Mowers can be raised at any time, but should never be lowered drastically in hot weather. The only safe way is to lower the cut slowly, just a little each week.

Fairway watering has brought several vexing problems. Mowing is one of them. Present mowing equipment was designed before fairway watering started. The grass on watered fairways is softer and grows faster than on unwatered ones. Higher cutting of watered fairways would be possible if the grass could be cut before wheels of any sort passed over them. Under existing conditions, higher cut fairways are ragged and unsatisfactory for play a few hours after being cut because of the longer grass in the lines left by the tractor and mower wheels.

Controlling Chinch Bugs

(Continued from Page 40)

applied with power dusting equipment gave better than 90 per cent reduction in chinch bug population.

Tests conducted in 1945 with DDT and Sabadilla dusts of less than 10 per cent concentration failed to give satisfactory control of chinch bugs and the DDT dusts failed to exhibit any marked residual toxicity. DDT applied as spray and mixed with top dressing and sand also gave excellent control of chinch bugs when 10 pounds or more of technical DDT was applied per acre.

The conditions for applying DDT sprays are not so exacting and we have obtained satisfactory control even when sprays were applied in a light rain. Where dust applications are made with hand equipment we found that from 150 to 200 pounds of dust per acre was required to obtain thorough coverage. Dust applications should be made when the grass is dry and the grass should be cut as short as possible so that the dust can be forced to the base of the grasses where the chinch bugs are feeding. Both of these materials are contact poisons so the dust must contact the insects to be effective. Thorough coverage is necessary with both materials.

DDT is a slow acting poison and a period of at least 5 days should be allowed

before judging the effectiveness of DDT treatments. DDT treatments have exhibited a residual toxic action to chinch bugs for a period of 10 to 14 days in tests conducted in 1945. This period was of sufficient duration to kill any nymphs that might hatch from eggs deposited by adults that were present when the treatment was applied, consequently one DDT treatment controlled the chinch bugs for the season in our 1945 tests.

Sabadilla is a much faster acting poison than DDT but a period of 48 hours should be allowed before judging the effectiveness of a treatment. Sabadilla did not exhibit any prolonged residual toxic action in our tests in 1945. Sabadilla is apparently highly irritating to chinch bugs and they become very active following dust applications, this activity is apparently accelerated by high temperatures. During the past season, 10 per cent Sabadilla at the rate of 100 pounds per acre was generally recommended in New Jersey. Reports reaching the Experiment Station indicate that the home owner found that this treatment gave satisfactory control of chinch bugs during 1945.

CLASSIFIED ADS

Other Classified Ads on Page 65

ATTENTION CLUB OFFICIALS: Are you looking for a qualified greenkeeping superintendent? Our association has on file men who can qualify for that position. Some are returning veterans who desire to again enter this field. Address: The Greenkeeping Supts. Assn., Secretary's Office, St. Charles, Ill.

Pro-Manager: Veteran recently discharged from Army after three years service desires permanent affiliation with progressive club. Active resort, industrial, or business employees club favorably considered. Fully experienced in the golf business: teaching, administration, merchandising, sales, promotion. A-1 references and credit rating. Wife available as club secretary. Address: Ad 205, % *Golfdom*.

Veteran, 29, married, desires professional job coming season. Available March 1. Will go anywhere. Address: Ad 206, % *Golfdom*.

Expert Club Maker just out of army, desires position as assistant pro or caddy master in private club near Chicago or Aurora, Ill. Age 29, good personality, married. Address: Ad 207, % *Golfdom*.

Expert club repair service. Clubs refinished, rebuilt. Quick service on all types of repair work. Write for price list. E. L. Wilson, Twin Oaks, Route 1, Box 31, Batavia, Illinois.

Pro—Pro-Greenkeeper—Aust. Pro. Ex-serviceman. 27 years old. Excellent instructor and player. Will go anywhere. Box 563, Cheraw, S. C.

Having completed 3 years of essential war work, would like to contact club needing services of Pro-Manager or Pro-Greenkeeper. Can furnish references. Address: Ad 208, % *Golfdom*.