

Chinch Bug Control 100% by Chlordane Emulsion

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For years the hairy chinch bug has been a constant threat to better turf. Only bent grasses, young blue grass and fescue were believed to be susceptible to injury by this insect. It appeared during the summer of 1949, however, that old stands of blue grass and fescue in golf course fairways and roughs were being severely damaged by the pest.

Prediction had it in the spring of 1949 that if the season continued as hot and dry in the northeast and other parts of the country as well as it commenced, serious outbreaks of chinch bugs could be expected. Nature gave no lie to the forecast and before early July it was obvious that this season would be one of the worst chinch bug years on record. Now that the season has closed the least that might be said relative to the matter is that the long range prediction was somewhat of an understatement.

In many sections of the eastern part of the United States the Japanese beetle has been acknowledged as the leader among the surface and subsurface insect pests taking an inestimable annual toll of beautiful and valuable greensward. In 1949,

however, the situation was in part reversed with the beetle playing "second fiddle" to the chinch bug. It might be well to point out here that weather conditions favoring the Japanese beetle are largely deleterious to the chinch bug and vice versa. A cool wet spring and a wet summer and early autumn will assure a rapid increase and survival of the currently developing Japanese beetle generation; whereas similar weather conditions discourages chinch bug multiplication and spread. On the other hand, a long, hot, dry season such as prevailed in the northeast last year is the method nature has chosen for quick and effective reduction of Japanese beetle population and rapid rise in chinch bug infestation.

While pursuing tropical earthworm, "stinkworms," research at Pelham Country Club, Pelham, New York, the junior author became perplexed by an increasing number of irregular reddish brown areas appearing in certain fairways where there was sufficient moisture to sustain the turf despite the dryness of the season.

By August first very little probing of the turf was required to disclose the cause of



Patches on above fairway are reddish brown areas infested with millions of chinch bugs.

the trouble. Teeming millions of chinch bugs were discovered throughout the length and width of several fairways and adjacent roughs. Not all of the fairways, roughs, and tees were comparably infested. Some had chinch bug populations of lesser density than others, but all were inhabited to an alarming degree. The insects were for the most part recently hatched nymphs and adults. When the grass was parted in certain areas the turf appeared to be garnished with red pepper. On closer study countless numbers of extremely small, bright red nymphs could be detected scattering in an attempt to conceal themselves.

Immediate steps were taken to secure quantities of 5 per cent Chlordane dust to be used for control. All efforts met with failure. Delivery of the three or more tons necessary to treat the entire course would require three to seven days and perhaps longer. The urgency of the situation demanded that treatment begin without delay. In consequence it was decided to use Chlordane Emulsion (a quantity of which was on hand) and proceed at once with the task of chinch bug control. Unfortunately we had had no previous experience in control of the pest with emulsions to aid in determining dosage level, time and technique of application, etc. However, it was reasoned that since the insecticide when used as a dust had given such remarkable results it could be expected that emulsion if applied properly would give as complete control as dusts or wettable powder compositions.

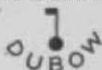
Within 12 hours a 50 gallon twin tank sprayer mounted on a 1½ ton truck was in operation applying 2 gallons of Chlordane emulsion (each gallon contained 4 lbs. of technical toxicant) in 50 gallons of water per acre. A home-made spray boom consisting of 10 nozzles producing a finely divided fan-shaped spray, spaced 18 inches center to center was fastened to the rear of the truck at a height of 30 inches from the ground. Suitable couplings connected the boom with the sprayer. The speed of the truck was maintained at 5 to 6 miles per hour. The spray as delivered by the nozzles criss-crossed so completely at the surface of the turf that every second nozzle could have been removed without endangering the perfect coverage achieved. By the end of the first day 2 fairways and adjacent roughs of approximately 9 acres had been treated.

While the initial application was underway a call was sent out for more emulsion. Within 24 hours six 5-gallon cans were delivered to the golf course and on subsequent days additional quantities of material were obtained. In all, 120 gallons of Chlordane emulsion were used treating 60 acres of fairways and roughs. Because of the difficulty experienced in manipulating the sprayer on the tees and around the greens,



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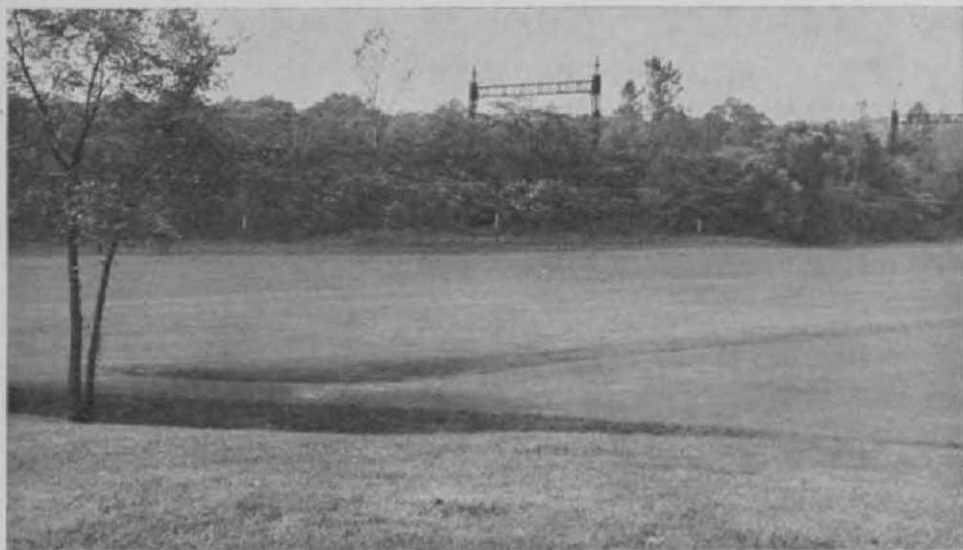
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Same fairway shown on page 54 after area had been sprayed with Chlordane emulsion. Complete kill of chinch bugs reported within 24 to 48 hours after treatment with no injury to turf.

these areas were treated with 5 per cent Chlordane dust at the rate of about 5 pounds per 1000 square feet mixed with Milorganite as a diluent and applied by means of a 3-foot Gandy spreader.

A remarkable development of the unprecedented undertaking was the virtual absence of injury to turf by the treatment. It appears to be even more amazing by reason of the extremely high temperatures existing during the days the control operations were relentlessly pursued. At no time was the mid-day temperature below 95°F. and on several occasions it reached 98° to 100°F. and more. Sunshine, prevailing most of the time was accompanied by oppressively high humidity.

The outcome of the work was extraordinary. Within 24 to 48 hours no living chinch bug could be found in any of the treated turf. Control appeared to be 100 per cent in all areas of the golf course. Subsequent examinations of the fairways and roughs revealed no young or adult chinch bugs in any section of the course. An examination of the treated fairways in mid-October showed the turf to be entirely free from chinch bug infestation. It appeared, however, that a third generation had arisen in an untreated nursery of about 15000 square feet. Both newly hatched young and adults were present in great numbers. Injury was developing necessitating treatment with Chlordane emulsion.

A substantial part of the injured turf recovered rapidly with most of the reddish brown areas disappearing completely. Only an occasional spot required reseeding.

Park Officials Need to Know More About Pros

Parks and Recreation magazine, published by American Institute of Park Executives, recently published a summary of replies received from 19 cities answering a questionnaire on public golf operation.

Two of the reporting courses had Gkpr.-mgr., one Pro-gkpr.-mgr., eight have pros and eight do not. Lessons mostly are \$2 for half-hour. Some went as low as \$1 for half-hour lessons. About half gave some form of free group instruction.

The great increase in free instruction and other services does not seem to support the conclusions Parks and Recreation prints: "A trend apparent in this information is substituting some other kind of management for the golf professional, perhaps mainly for the reason set forth by one city: 'While we were paying him (pro) \$100 a month and giving him a house, his income from the golf shop was netting him in the neighborhood of \$5000 a year. He could make another \$2000 or \$3000 on lessons. It seemed that every time we wanted him to do something, or he was needed at the golf shop, he was out giving lessons or playing golf.'"

The comment doesn't indicate the knowledge of management that might be expected of a park official. The estimate of \$3000 from lessons, at \$2 a lesson, would mean 10 lessons a day thru a 150 day season and no rain-outs. To net \$5000 a year in the shop would mean that the pro had to sell about \$25,000 in merchandise and have low operating costs. This would require the