UPJOHN CO.
WELL-TIMED, PROGRAMMED ATTACK CAN SUBDUE WHITE GRUBS

The white grub is a tough bug to beat on today's golf courses, but a well-timed, programmed attack can insure that your course's turf will not be friendly turf for these underground root munchers.

Environmental concerns have eliminated long-residual chlorinated hydrocarbons from the anti-pest arsenal, so today's golf course superintendent must rely on short-residual insecticides to get the job done. He must find an effective treatment and apply it at the proper time so it hits the grub at the most vulnerable point in its life cycle.

Superintendents who have battled the white grub are well-qualified witnesses of this pest's damage. Just ask Jim Baran, superintendent at Arrowhead Country Club, an 18-hole, 115-acre private club in North Canton, Ohio, who has won his war with the white grub.

Baran, who holds a certificate in turf grass management from Pennsylvania State University, is a member of the Northern Ohio Golf Course Superintendents Association and the National Golf Course Superintendents Association of America.

"When I first started here about 2½ years ago, I noticed there was a Japanese beetle grub problem", Baran informs. "At that time, however, the club felt it was financially unable to spray.

"The following year, the problem became even worse. You could take a divot and find 2-3 grubs. The grubs were in just about every area. Skunks and moles would turn up looking for grubs, damaging the turf. And because the grubs were feeding on the root system, it put the grass in a shock. So when heat stress came in late June or early July we had large areas of dead turf."

It was agreed that something had to be done. Baran says he tried chlordane on test spots, but it had no effect at all on the grubs. He then began researching available insecticides to find one which would be safe, effective, yet economical.

"To me, safety is a big factor--I don't want my people to even get close to something that's highly toxic," Baran states. "Proxol turned out to be safe for our people to handle. Yet the insecticide was least expensive and had the highest success rate."

Baran checked with his county agent to learn when the best time would be to apply the insecticide. Fortunately, a rainy period came at about the right time--the first week in September--so Baran told his crew to load up the sprayers and begin the attack. Rain or watering is required after **Proxol** application to move the insecticide down through the thatch to the grubs.

"We sprayed the entire golf course, using 3¾ oz. of formulated ingredient per 1,000 sq. ft.," Baran says. "Residual effect of this insecticide is about three weeks, so we sprayed a week before peak grub population, to pick up early grubs, letting the drug residue cover the next two weeks--one week of peak population, another week to get stragglers."

Baran made a check later in the fall, when grubs could have been detected, but none were found. In the spring, when grubs again would have been evident, another check was made and, again, none were spotted. In late June, with only .08-inch of rain in 15 days--a sure stress test for the turf--there were no problems.

"We'll spot spray again this year in the fall and in another year or two, we'll do the entire golf course again," Baran explains. "We're trying to knock the entire population down far enough so they won't bother us. As they build up, we'll hit them with a once a year fall spraying."

Baran says his program has provided an economical, yet effective, solution to white grub problems at Arrowhead Country Club, where a total maintenance program--including fungus and weed control--is carried out on a continuing basis.

ABOUT DORMANT OILS

Dormant oils are designed to be mixed with water. The rates vary depending upon the pest in question. In some cases, an insecticide is added to the oil to improve the effectiveness of the treatment.

Consider the temperature before applying an oil. It should not be applied if the temperature is below 40 degrees Farenheit or will go down to freezing shortly after applying the oil. On some evergreens, injury may occur if freezing temperatures appear within three weeks after treatment. Oils applied after October 1st, may increase cold damage to some trees. An oil may also cause plant burning if applied when the temperature is 90 degrees Farenheit plus during or immediately before hot, dry weather or on plants suffering from drought.

Oil sprays should not be used on certain plants because the result will be burning. Sugar maples, hemlock, larch, Cryptomeria, Japanese maples, beech, hickory, walnut, butternut, mountain ash, maidenhair, ferns, Cocos palms and African violets fall into this category. Oil will also injure Douglas fir flower buds and will remove the blue color from blue spruce. Oil applied in August or September on fruit trees may affect fruit color and solids content.

Do not use oils with or following the application of certain pesticides: dinitro compounds, sulfurs, captan, Folpet, Pyrene, Karathane, Morestan, lime sulfur, wettable sulfur, Dichlone, Phaltan, or Sevin. Read your labels carefully for additional instructions.

Check your oil to see if it is still good before you use it. The mixture of water and oil should be uniform and milky-white after shaking. If it doesn't emulsify, don't use it.

Stanley Rachesky