

Entomologists Continue Study Of Turf Pest *Ataenius Spretulus*

Extensive damage to golf course turf in the East and Midwest has been the result of the appearance of a new, small white grub, *Ataenius spretulus*. The new turf pest has caused considerable damage to fairways, greens and tees in areas ranging from Illinois to Michigan to New Jersey.

Dr. Kent Beckman, turfgrass specialist for TUCO, Division of the Upjohn Co., at Kalamazoo, Mich., told WEEDS, TREES & TURF the grub attacks the tender feeder roots of grass and usually works about a half-inch below the soil surface. "Damage first appears as localized dry spots," he said. "And many turf managers have made the mistake of irrigating the dry-appearing areas without investigating below the soil surface."

Dr. Beckman received his B.S. in forestry at the University of Washington, and his Ph.D. at Oregon State University majoring in biology, plant pathology and biochemistry. He has been involved in turf research for 12 years.

The grub pest particularly likes *Poa* and bentgrass turf, although it has been found in bluegrass and other grass species, he said.

He said the grub has probably existed in some areas before, but was usually identified as something else. He says particularly during the last three or four years that which was described as dry spots may have in reality been the results of the *Ataenius* grub. The grub's sudden wide-spread appearance was attributed largely to ideal weather conditions and a general lack of insecticide programs on fairways and cutbacks in other areas due to economic strains. Entomologists are currently studying the new pest in an effort to learn more about it. Turf conference programs recently have had many programs on the grub, and research on the grub is currently in the process of being funded.

"The adult is a small, black beetle that winters in grass clippings, debris and other such materials," Dr. Beckman said. "The adults come out of hibernation in the spring, lay their eggs in the turf, which hatch into their destructive larvae stage by late June and early July. The adult beetles can fly, so they are able to spread rapidly. If growth conditions are favorable, such as with warm and moist weather, the adults emerging in July will again lay their eggs for a second generation to follow in August."

He said the tiny, white grub is about the same thickness and length of a sharpened pencil lead. He adds that it also has a brownish head and a dark posterior like that of more common white grubs.

"Damage may first appear to be turfgrass wilting about the size of a golf ball which can spread to cover several square yards," he said. "And although it only takes about 30 grubs per square foot to begin

damaging turf, as many as 50 per square inch have been found." Early control is important and special care must be made to insure a complete kill as resistance to various insecticides has been observed.

"Damage from the grub appears in July or August, so one should begin looking for the pest in three-day intervals during the middle to latter part of June," he said. "If a dry-appearing area is spotted, positive identification can be made by pulling up small patches of turf. Turf that has been invaded by the tiny grub will peel back like carpet, he said, and the grubs can be seen working from the soil surface through the first half-inch of the soil."

Because the grub has demonstrated a resistance to some insecticides, control in some areas has been erratic.

"High populations of the grub have been found in areas that had been previously treated with dieldrin, heptachlor and chlordane," he said. "Resistance to these cyclodiene insecticides has been found on courses in Ohio, Connecticut, New York and New Jersey."

"One of the best materials available for controlling the pest is Proxol 80 SP," Dr. Beckman said. "It is essential to get the chemical through layers of thatch to where the grubs are working in order to obtain control of white grubs and the mini-grubs are no exception. Water will carry the material down to the grubs which explains why water-soluble products have proven so effective."

He said the chemical should be applied at 3 3/4 ounce per 1,000 square feet, or equivalent per acre, either early in the morning or late afternoon, followed by thorough irrigation of the turf which carries the material down to the grub feeding zone. He advises inspection 12 to 24 hours following chemical applications to insure that desired levels of control were obtained. □



Dr. Beckman