

# TECH CENTER

## Knowing lifecycle vital to control white grubs

■ Skunks feasted on the grubs buried in the roots of the turfgrass surrounding the corporate office building in suburban Cleveland.

The damage, mostly in the low, moist areas of the property, reaffirmed the adage: to control a pest, first learn its lifecycle. This is particularly true of white grubs since they're below the soil surface. This also complicates their control.

Typically, beetles that develop into white grubs—Japanese beetle, masked chafers, European chafer—lay their eggs in the soil in June or July. The eggs absorb moisture from the soil otherwise they won't grow and develop. The tiny first instar larvae needs sufficient moisture, too.

In fact, research in recent years suggests it's difficult to over-estimate the importance of soil moisture in the lifecycle of white grubs. That's why poor control usually occurs when chemical controls are applied on drought-stressed turf in mid-summer. The white grubs have moved deeper into the soil, in effect, out of reach of the control.

**Tasty summer meal**—But by mid-summer 1991, the grubs at this showcase of a 10-acre corporate office site had grown large and juicy enough—and remained close enough to the soil surface—to attract

skunks. The night-feeding skunks devastated about six patches of turfgrass, really ripping up a 10-by-30-yard oval patch of turfgrass in a depression adjoining a 3-acre marsh. This ribbon of turfgrass separates the natural, marshy area from a patio where company employees lunch if the weather is nice. Everyone in the building watched as the turfgrass damage, worsened by dryness, grew.

The skunks also dug up turfgrass in a scattering of smaller areas, although they did no scavenging in the less intensively maintained, non-irrigated turfgrass fringing of the property.

The on-site turfgrass manager removed the dead grass *and* thatch, and treated the grub-infested areas of the property with diazinon. After the application, he watered the product into the soil. He said the treatment was successful. Skunk predation tapered off. He reseeded the devastated areas. After a mild winter and wet spring and early summer, his grounds are green and healthy.

**They're back**—However, he discovered white grubs began feeding on turfgrass roots earlier this spring than usual. (1991 was one of the warmest years recorded in much of the United States.) Adequate rain-

fall in late spring and early summer is another reason why he began checking the roots of his turfgrass for evidence of white grubs earlier than he normally would.

He, like other turfgrass managers, establishes a threshold to determine if they'll apply an insecticide or not. Healthy turfgrass will sustain a certain population of white grubs before damage becomes visible.

However, if and when a manager determines that a control is needed, he or she must make a decision about control product, the method of application and the timing of application.

For typical weather (when is weather ever typical?), the best time to treat for white grubs is just after small larvae grubs emerge. This could be any time from mid-July through late summer. The tiny grubs are closest to the soil surface then. They're feeding.

As fall approaches, the larvae molt. Falling soil temperatures cause the grubs to burrow deeper into the soil to spend the winter. When the temperature rises again in the spring, they work their way upward again and feed for several weeks, just a couple of inches below the soil surface.

In late spring or early summer, the grubs, in the pupal stage, quit feeding for several weeks. Then mid-June through July they change into adult beetles, emerge and burrow into the soil to lay eggs.

Check with your local extension agent for optimal grub control times.

—Ron Hall

## GRUB CONTROL STRATEGIES

### Spring April-May

If treatment of overwintered grubs is needed, apply when all grubs are in the first two inches of surface soil. General or spot treat Triumph<sup>1</sup> (2 lbs. ai/A); Oftanol, Sevin-Sevimol or Mocap (5 lbs. ai/A) or Turcam (2-4 lbs. ai/A) may be used. Crusade<sup>2</sup> (4 lbs. ai/A). Irrigate as soon as possible after application. Green June beetle larvae are difficult to control at this time. Sevimol (2-4 lbs. ai/A) may be effective.

### Summer June-August

Existing grubs found in July or August may be treated with Triumph<sup>1</sup>, Dylox, Proxol, Turcam, Oftanol, Sevin-Sevimol or Mocap. Apply at label rates. Crusade<sup>2</sup> (4 lbs. ai/A). If soil and/or thatch is dry, irrigate thoroughly before and as soon as possible after app. Treat green June beetle with Sevin (2-4 lbs. ai/A).

### Fall-early winter Sept.-December

Treatment can be made as late as mid-late Sept. as long as grubs stay in first inch of surface soil. Triumph<sup>1</sup>, Mocap, Dylox-Proxol at label rates may be effective

1 For use only by commercial lawn pest control personnel, and only on golf course tees, greens and aprons, and on sod farms. See soil restrictions.  
2 For use in professional turf areas such as golf courses and commercial sod.

Source: Dr. Harry Niemczyk