

# GRUB BE GONE!

Grub control—especially with the most modern, effective insecticides—is a tricky business. Landscapers and lawn care operators are advised to meticulously follow these guidelines to avoid costly callbacks.

by Jerry Roche, executive editor

“It isn’t as simple as everyone would like it to be,” says Ohio State University’s resident bug guru Harry Niemczyk. He is speaking, of course, about controlling lawn-munching grubs.

Keeping grub populations from damaging lawns has been, unfortunately, a hit-and-miss proposition among many professional lawn/landscape companies. Some of the problems are the fault of the applicator, some the fault of the homeowner and some the fault of the actual chemistry involved.

The first thing that should be done before applying a grub control insecticide is to check the soil pH and irrigation water pH, if possible.

“It is a problem,” notes Dr. Michael

Villani of Cornell University. “A lot of insecticides break down fairly rapidly in high or neutral pH.”

“Treating at the right time is also important,” Villani adds. “People who treat in New York State in the spring have had trouble with control. And there isn’t a manufacturer who will guarantee control of grubs if you put the material down in June or July.”

With many new products, residual activity is not as long as older products, Villani continues, because of environmental considerations. This creates a smaller “window” of effective application. “Materials work under the best conditions, but there’s very little margin for error now,” says the Cornell entomologist. “You just

don’t have a leeway any more.”

According to most experts in the North, early August is a perfect time to treat for grubs for control the rest of the year and into the next spring. Treatment can be made as late as mid-September. But because this is usually a time of extreme heat and drought that drives the grubs deeper into the soil, Niemczyk recommends “irrigation several hours before treatment and a thorough soaking afterward.”

Insecticide applications made during the day—many times when homeowners are not present—also cause problems. If homeowners water at all, it is when they return at the end of the workday, at which time the insecticide may already be dried on the turf



## SOME INSECTICIDES FOR GRUB CONTROL IN TURF

COMMON NAME	TRADE NAME	MANUFACTURER	TOXICITY <sup>1</sup>
beniocarb	Turcam	Nor-Am	40-179
carbaryl	Sevin	Rhone-Poulenc	246-283
chlorpyrifos	Dursban	Dow	96-270
diazinon		Ciba-Geigy	300-400
ethoprop	Mocap	Rhone-Poulenc	62
isazophos	Triumph	Ciba-Geigy	40-60
isofenphos	Oftanol	Mobay	20-30
trichlorfon	Proxol	Nor-Am	250

Rat oral LD<sub>50</sub> in g/kg<sup>1</sup>

Source: Farm Chemicals Handbook

leaf blade.

"You must insure proper watering," says Ciba-Geigy technical representative Don Wilson.

When he was working for Chem-Lawn, Wilson saw many instances when insecticides would be applied first thing in the morning but the client's landscaping service would mow and remove clippings before the lawn was watered.

"So we used to leave behind a packet of information with the invoice," Wilson remembers. "We'd put a fluorescent orange sticker on the invoice saying, 'CAUTION: Failure to water immediately will result in poor control.' It was very effective for us, especially with mole cricket control in Florida.

"The orange stickers are outstanding; they get the customer's attention and show him or her that you're concerned."

Wilson suggests knocking on the client's door before and after application of a grub control, if possible, to explain what applications were made. He also says that handwritten notes left behind work better than printed material.

"If a company really wanted to go above and beyond the call of duty," Wilson notes, "a phone call that night to remind the customer to irrigate helps."

Bob Staib, sales representative for Nor-Am Chemical, knows of some companies that call ahead of time to schedule grub treatments. That way,

the homeowner will be home during treatment and can water immediately afterward.

"It behooves the lawn care operator to stress immediate watering, especially if the materials are liquid; granular materials aren't quite as immediate," Staib says.

Another problem is that no product yields 100 percent control.

"Eighty to 90 percent control is the norm," notes product specialist Tom Davidson of Rhone-Poulenc. "In the ag business, if you don't get 99 percent control, you're not doing well. Most everybody in the turf business has gotten used to 80 to 90 percent, but when you get this level on some populations, it just isn't enough." Davidson says that more than eight to 10 grubs per square foot will result in visible turf damage.

Another problem is what Dr. Niemczyk calls "microbial degradation."

According to Niemczyk and Dr. Adam Krause, also of Ohio State, "hungry" microbes in turf can adapt to residues of certain insecticides and quickly use the molecules of the compounds as an energy source. The phenomenon, seen before in herbicides, is known as enhanced microbial degradation.

"We found that microbes in the soil and thatch—fungi, bacteria and actinomycetes—are very important in the fates of insecticides," Niemczyk says. "Whenever you apply a compound to turf, degradation begins with the microbes. They're in the turf naturally, and they're far and away the main cause of degradation."

"But the bottom line is that once the adaptation is complete, applying the material to the turf is no longer effective."

Two ways for landscapers or lawn care operators to increase the efficacy of these insecticides are rotating them and timing their applications more accurately.

"Resistance to insecticides has not been a big problem," Staib says, "but it's probably a good idea to alternate products, especially those that have shown tendencies toward microbial degradation."

Says Niemczyk: "The whole phenomenon is still poorly understood. We have to find out a lot more to see if it's going to be a long-term problem."

The bottom line for effective grub control: test the soil pH, put the right material down at exactly the right time, and make sure the client waters as soon as possible after application. Those factors insured, adequate grub control is probably insured as well. **LM**