



Don't Bug Me!

Bugs, or more properly, insects are just another part of the turf management challenge facing golf course superintendents. Just when we get the turfgrass lush and healthy the bugs move in for a feast. If they aren't watched carefully, they can turn a velvety-smooth putting green into a ragged, pock-marked embarrassment.

If there is a trend in insect control, it would be that more and more superintendents are applying chemicals less often and to smaller areas on the golf course. Superintendents, who once used to spray all 18 greens if any signs of insect activity were spotted, now spray only those greens where actual damage is seen. If there are concerns about additional infestations, soap flushes are used to bring potential turf gobblers to the surface to evaluate populations and make more intelligent spraying decisions.

The good news is that insects have pretty consistent and definite life cycles which can be monitored to avoid surprises. The bad news is that, thanks to the 1996 Food Quality Protection Act, some of our familiar weapons against the creepy-crawlies are becoming endangered or extinct. There's more good news in that manufacturers are coming up with new products that require lower doses, are less toxic and are highly effective. The down side is that they tend to be specific to one kind of insect and they are more expensive than the older products. The cost factor added to reduced broad-spectrum control has superintendents looking for new ways to combat insect pests.

The following articles will look at some strategies and products for keeping the bugs on your course under control. Other suggested references for insect control are the *2000 University of Florida Pest Control Guide for Turfgrass Managers* and *Best Management Practices for Florida Golf Courses*. Both publications are available from your county extension offices or by calling the UF/IFAS Publications office at 800-226-1764.

JOEL JACKSON, CGCS

New Weapons for Old Enemies in Y2K

Even in the new millennium, and the computer age continuing to give us new technology, it is still the same age-old problems with insects that our men-

tors faced. I would have to say that the "big three" are nematodes, mole crickets and grubs.

"Todes" are probably the most frustrating to all superintendents because of the difficulty in controlling them. The majority of control needs to be done in the spring (March and April) to allow

the grass to set roots and get healthy for the summer heat.

My application weapon of choice has been Toro's high-pressure injector, and spot treating using liquid Nematicur 3 at a rate of 3 gallons per acre, with good results. Critical to good application coverage is to make sure the swaths are close together to avoid a zebra-stripe look that will not "green up" like the treated areas. An added benefit of using the injector is that the product is applied directly into the soil and doesn't sit on the grass surface waiting to be watered in after the entire area is treated, which equates to less exposure.

When it comes to controlling "crickets," scouting and timing are everything! The IPM specialist must scout and map the areas that need to be treated. Adults that have over-wintered become active in the spring and one or two treatments are required immediately.

And right away we have to prepare for the nymphs. Monitoring the adults and the egg development is an ongoing process. When the eggs get hard and become a pearl color, it indicates that they are ready to be laid.

At that point, we begin treating with a long-term-residual product, such as Merit. What we are looking to do is create a generation gap in the life cycle of the crickets, and grub control. By reducing the number of nymphs that survive, then you reduce the amount of adults to deal with later. After nymphs are controlled, adult mole crickets and grub control can be reduced.

For instance, we spot treat, and alternate spraying between the front nine and the back nine, once a week, with Turcam or Orthene (depending on the target), on approximately 6 acres, for the rest of the summer. Our IPM specialist continually scouts and maps areas that need treating, reducing wasted time looking for problems while out on the spray rig, and can go right to the areas that need treating.

Our greens get foliar fed at least once a week, year round. We treat for worms on a preventive basis with Dipel during periods of pressure. The results are usually very effective, yet, when the rains are

coming everyday, the webworms become relentless in their egg-laying. It is then necessary to apply a quick knock-down product such as Conserve or Astro.

There is no doubt in my mind that when a pesticide is improperly used, it results in a negative impact on the environment. It never fails that when we experience a *naturally occurring* fish kill in one of our lakes — due to a low-dissolved oxygen problem caused by a warm, cloudy day with a rain shower (like that never happens in Florida) — a club member will ask if all of the chemicals I use killed the fish! I have seen a fish kill due to the application of a pesticide with the onset of an unexpected afternoon rain that washed the treatment into the water, but it is my opinion that a lot of the fish kills caused by pesticides are actually the misdiagnosis of the low dissolved oxygen in the water.

As far as any problems with humans, the only incident that I can recall of someone being affected by a pesticide

application was myself. I was exposed to a chemical that caused me to have a bad reaction, and believe me, it was a living hell. Just remember, believe what they say on the label about possible effects on humans.

Always keep in mind, too, any possible exposure to any human when applying materials, and take all of the recommended safety precautions. Having experienced it myself, I would not wish a reaction to exposure on anyone.

For the most part, I am enthusiastic about the low dose, highly effective types of new chemistry that is being introduced. I focus on using products that are safe to us and to the environment. I believe that chemical manufacturers recognize the fact that they must produce safe, environmentally friendly products for golf courses because superintendents have come to demand them.

I also believe that the FQPA could result in the loss of some of the safe chemicals out there due to lack of — or

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Chip Fowkes
Frenchman's Creek Golf Course.
Photo by Kenny Brooks.

misrepresentation of — the truth, plus some hard-nosed science. Hopefully, golf courses will not suffer too much, and that new, improved products will continue to be developed for our use.

Keep in mind, however, that it takes approximately 10 years in research and \$50 million to bring a new product to market. It is a lengthy and costly process, and I, for one, am glad that manufacturers are keeping up with the advances in new science and technology.

BILLY DAVIDSON, GCS
Colliers Reserve

Stewards Beware: Mole Crickets Afoot

Say the words "mole cricket" to any superintendent in the Southeast, and you'll likely see him flinch, grimace or simply shake his head. That's because most superintendents in the region have either experienced the devastation and frustration of mole crick-

ets firsthand or know of another superintendent who's been plagued by them.

Mole crickets arrived in Georgia and Florida from southern South America in about 1900.

Currently there are 10 mole cricket species in the United States, but the three major species inflicting the most damage in the South are the tawny mole cricket (*Scapteriscus vicinus*), southern mole cricket (*Scapteriscus borellii*) and short-winged mole cricket (*Scapteriscus abbreviatus*).

The tawny and southern mole crickets reside primarily in the lowlands of Florida, Georgia, Alabama, Mississippi, Louisiana, North and South Carolina; however, there have been reports of the southern mole cricket as far west as Arizona and California. The short-winged mole cricket resides mainly in Florida.

Overstaying Their Welcome

Since their introduction into the

United States, mole crickets have done nothing but wreak havoc on turfgrass and turf soil.

In fact, some have compared the mole cricket to house guests who overstay their welcome — and unfortunately for superintendents, these guests won't leave without a fight.

"Mole crickets caused complete devastation in parts of fairways on both of the Boca Woods courses," says John Gallagher, Boca Woods Country Club superintendent in Boca Raton.

"The way I understand it, the crickets were here before the golf course was. This area used to be a dairy farm. From the moment the course was completed, we spent all summer trying to control crickets. Damage was everywhere."

The damage mole crickets cause to both turf roots and soil with their feeding and tunneling can be devastating. They feed voraciously on roots, stems and ground-level plant leaves. One mole cricket may tunnel and feed several yards each night.

They also disrupt the soil by tunneling underground, loosening the soil and uprooting turf.

The tunneling destroys roots and causes the soil to dry out, placing added stress upon plants. Not to mention, tunnels located just below the ground surface cause soil to bulge above the surface.

The raised tunnels spoil the smooth surface of the greens, affect play and can be hit by mowers or other maintenance equipment.

"One of the biggest problems with mole crickets is that you get disruption to the root system," says Chip Fowkes, superintendent at Frenchmen's Creek in Palm Beach Gardens. "The roots and soil dry out, and the ground is not as firm for mowers and people walking, because of all the mole cricket tunnels. Turf quality, in general, decreases."

Biological Controls

Since mole crickets have no native insect parasites in the United States, scientists have researched what insects