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# Floods, herbicides conspire to threaten '96-97 seed supply

by TERRY McIVER / Managing Editor

Ten to 30 percent of the 1996-97 tall fescue and perennial ryegrass seed crop will be lost due to winter floods and residual herbicides which killed grass plants that sprouted during a fall warming spell. The shortage could frustrate what is expected to be high demand for turfgrass seed in the fall of 1996.

Unseasonably warm weather caused late-sprouting plants to be killed by herbicides that were intended to remove seed remnants from the 1995 harvest. Severe flooding in early February capped off an unfortunate turn of events in an industry that prefers its plagues one at a time. Older ryegrass fields—those planted to ryegrass for the past three or four years—took the most damage.

"Generally, the 'volunteer' seedlings—the worthless sprigs that sprout after the seed harvest—are all that need to be controlled

by field burning, or—since field burning has been limited—by herbicides," explains Dr. Jerry Pepin of Pickseed West. Under normal conditions, the herbicides will not kill the established plants.

"I'm sure everybody used the recommended rates, but the recommended rates are for a certain set of conditions. This year, the herbicides just

worked much more effectively."

Adds Dave Nelson of the Oregon Fine Fescue Commission: "[The shortage] could be 10 to 15 percent. We won't know until the harvest. It could well be 15 to 30 percent."

Mike Robinson of Seed Research of Oregon says he is seeing a three percent loss of crops to floods, but "there will be a reduction of at least 30 percent...on the perennial ryegrass fields...especially on the older fields" because of herbicide damage.

"Another concern," Robinson points out, "is that some of the fields continue to show increased damage—the chemical is still working."

According to Nelson, perennial ryegrass—and to a lesser extent, tall fescue—is sold out for the 1995-96 season. Additionally, says Nelson, some seed companies were unsuccessful in planting sufficient tall fescue and perennial ryegrass acreage in the fall, largely due to competition from high-priced wheat crops.

Tom Stanley, marketing manager for Turf Seed, says water overflowed the banks of the Willamette River by 20 feet or more.

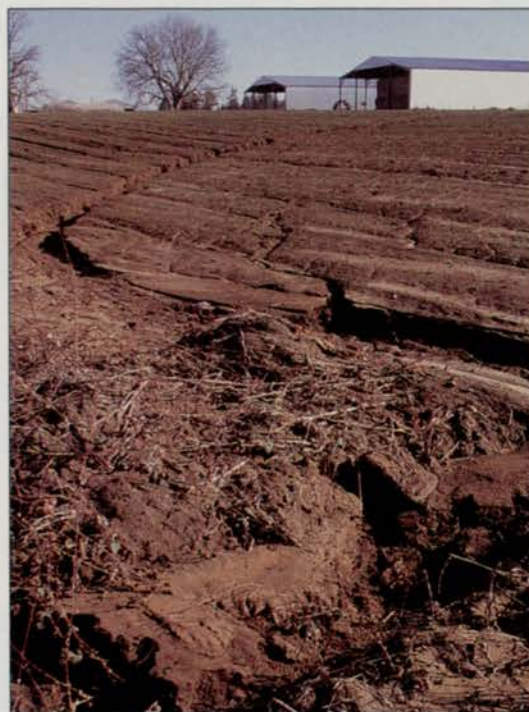
## Higher prices

"Because the Oregon seed industry had massive carry-overs for the last three to four years, they cut back acreage to reduce inventory," says Stanley. "Turf-type tall fescue prices have gone wild, and there's not going to be enough to go around." He believes that prices for tall fescue and perennial ryegrass next year will be 25 and 15 percent higher, respectively.

"We're going to be short for another couple of years," says Nelson, who suggests that green industry seed buyers get their 1996-97 orders in as soon as possible. □



**Pepin: Weather conditions a factor in control product efficacy.**



**Flooding through Oregon's Willamette Valley reduced portions of seed fields to bare ground.**



**Stanley: Seed prices are likely to rise.**

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# Harsh winter means probable turf damage

Although the Blizzard of 1996 has gone, the amount of damage this extreme winter did to home lawns is still unknown.

Ohio State University turfgrass specialist Joe Rimelspach says you should be on the lookout for snow mold in lawns this spring, especially where snow has drifted or been piled up by plows.

Slimy, circular patches from two inches to a foot in diameter are the distinguishing mark of snow mold damage, Rimelspach says. Sometimes the patches overlap, creating the illusion of extensive damage. Patches begin as a light yellow-green color, become bleached white, and

progress to a tan or brown over time.

Though the damage is cosmetic, Rimelspach recommends lightly raking the dead patches to break up crusted grass and let air and light get to the crown. Fungicides rarely cure the problem, but affected areas should be treated in the fall so the snow mold does not occur again next season.

Other possible problems associated with hard winters, according to Rimelspach:

1) **Salt injury along streets, driveways and walks:** Check the base of the plants for growth once the rest of the lawn starts

growing. If the plant is dead, the only solution is to resod or reseed.

2) **Traffic:** The chances of long-term injury from foot traffic is minimal when the ground is frozen. But if it's covered with slush and then the ground freezes, turf crowns and stolens can be extensively damaged and the chance of recovery is usually poor.

3) **Ice cover:** Thick, clear ice is much more damaging than porous white ice because it seals out oxygen. Turf can survive periods of ice cover longer if it is cushioned by a layer of snow between it and the ice.

4) **Frost heaving:** Reduce heaving by mulching areas seeded in the fall. Roll the lawn just after heaving occurs to press turf roots back into the soil and reduce wind damage. □

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## Dodger Stadium goes with 'Prescription' turf

The Los Angeles Dodgers will begin the 1996 baseball season at Dodger Stadium in Los Angeles on the most advanced natural athletic turf system in operation today, according to The Motz Group, which owns the license on Prescription Athletic Turf (PAT).

The installation, which began in November, was due to be completed this month.

"The entire field has not been replaced since Dodger Stadium opened," notes Doug Duennes, director of operations for Dodger Stadium. "The new technology is extraordinary and we believe that it is time to make a change...that will be pleasing to both our fans and ballplayers."

On the surface, the new PAT system provides a level, bermudagrass playing field that is grown on pure sand. Below the surface, the system has a vacuum chamber connected to a drain line matrix that is laid over a water-tight plastic barrier. During heavy rains, water is forcibly extracted from the field profile. A computer controller and moisture gauges automatically track water levels and transmit data to a microprocessor that initiates drainage.

The system can also subirrigate the field when moisture readings drop below optimal levels.

"Given the arid climate of southern California, the system's water conservation technology is a very important asset for the Dodgers," says Joe Motz, president of The Motz Group, which also recently installed PAT systems at Joe Robbie Stadium in Miami and at the University of Virginia's new David A. Harrison III Field. □

## Expo 96 has ideas to 'grow your business'

The International Lawn, Garden and Power Equipment Expo (Expo 96) will feature a series of Professional Landscape Seminars, including an "Ask the Pros" panel, "Growing People Who Grow Your Business" and "Technology You Can Use to Grow Your Business." Total cost for the seminars is \$25.

The event will be in downtown Louisville, Ky. at the Commonwealth Convention Center. Free shuttle service will be provided from most Louisville hotels.

The annual trade show, scheduled for July 28-30th at the

## RISE gets new state government manager

Fred Langley has joined RISE (Responsible Industry for a Sound Environment) as manager of state government relations.

He works on a consultant basis to monitor and analyze state legislative and regulatory activities, testify on behalf of RISE, build coalitions and provide regular updates to members.

Langley was eastern region government relations manager for DowElanco and is an arbitrator for the American Arbitration Association. He is now available to address state pesticide issues of concern to green industry professionals: 17 Tidewater Farm Rd., Greenland, NH 03840; phone (603) 430-8907; fax (603) 430-8906; e-mail [langleyf@ix.netcom.com](mailto:langleyf@ix.netcom.com). □

## Trend toward total renovation on golf courses

The next few years will see many historic, established cool-season golf courses renovate their greens to the new elite creeping bentgrasses now entering the marketplace, believes Lofts Seed turfgrass breeder Dr. Richard Hurley.

Two cases in point are The Desert Inn in Las Vegas and Wilmington (Del.) Country Club. The Desert Inn course, which used Crenshaw bentgrass on greens and washed sod, wanted something to hold up to 250 rounds a day and the city's extreme heat. Dan Pierson at Wilmington renovated 18 greens by sterilizing the soil surface in early September, 1994, then sowing bentgrass seeds in the middle of the month.

Superintendents are discovering that they do not have to continue to put up with older greens that do not hold up as well against disease problems as the new, improved varieties, says Hurley. □

Kentucky Exposition Center, is free to pre-registrants.

New country music superstar Martina McBride will sing at the Expo's annual dinner/concert on Monday, July 29th. The Drifters—whose song "Under the Boardwalk" was one of the great hits of the early 60's—will also perform.

"With a bargain ticket price of just \$35 for the concert and buffet dinner, this is an outstanding opportunity to enjoy an industry event," says Dennis Dix, president and CEO of the Outdoor Power Equipment Institute, Inc.

To receive a free copy of the Expo 96 registration brochure, call (800) 558-8767—(502) 562-1962 in Kentucky. Fax number is (502) 562-1970. **LM**

# [ DRUG PROBLEMS ]

by JERRY ROCHE / Editor-in-Chief

*"Hung-over employees have caused problems ranging from simple tardiness to embarrassing the company, and even destroying equipment. I've seen hung-over employees throw up on a customer's front lawn while raking leaves. I've watched a hung-over employee back the truck through the wall of the garage. I attribute problems like forgetting to latch the pintal hook for the trailer and crashing mowers into cars, buildings and flowerbeds to hung-over employees."*

Like the diseases you control in turf-grass, the diseases of drug and alcohol addiction are easier to handle on a preventive rather than a curative basis.

This is what readers who responded to our February "Talkback" seem to think, anyway.

"Like many problems, they're easier to prevent than to repair," notes Bill Wattendorf of the Grass Man Lawn Care Co. in Brant Rock, Mass.—who also wrote the introductory paragraph to this article.

"I check up on an employee's personal background extensively before hiring him or her," Wattendorf writes. "I put a lengthy explanation of my drug/alcohol policy in the employees' handbook. Strict intolerance of possession or use of alcohol or drugs is clearly explained."

Chuck Twist of TNT Lawn & Landscape Management Co. runs his business in a college town, "so there's lots of partying.

"Our help-wanted ads say, 'must be able to pass drug screening,'" Twist notes. "This brings us about half as many applicants as before. So far, we never have implemented any drug testing, but it keeps the 'dopers' away."

Tom Shackelford of Shackelford Landscape & Lawn in Anaheim, Calif., uses two preventive measures—drug screening and pre-employment evaluations—and one curative measure—"employee rehab through the insurance company" to control drug and alcohol abuse.

"Employees 'under the influence' mean poor productivity, unnecessary financial bills and loss of business," Shackelford writes.

Regulations for government workers, generally, are much stricter than in the private sector. Dale W. Ivan of the Moses Lake (Wash.) Parks and Recreation Department says tough new laws "get people's attention quick." Moses Lake has had a written policy and has random drug/alcohol testing procedures.

"In the parks department," Ivan continues, "we have a core of good full-time folks. We have been very fortunate to not have had any incidents related to drugs on the job. Over the past five years, there were two part-time folks with a first-time DWI that couldn't drive for a few weeks. This happened after hours. We worked with them through the problem."

Jim Haines of National Turf in Newport News, Va. has a little talk with first-time offenders. "They are given 30 to 45 days, during which an unannounced re-test is given. They do not operate equipment until after the new test, and if they fail, they are fired."

The people who responded to our February article report an average of one drug- or alcohol-related incident in the past 12 months and five in the past five years.

One landscaper wrote that he's had

three problems in five years, each of which was "cured," one way or another: one employee went into rehab, one quit and one was fired. These are the normal alternatives.

One golf course superintendent who wished to remain anonymous wrote:

"Our long-term conscientious employees quickly allow us to know when job performance is hurt because of drugs or alcohol. Our dependable employees will not long stand for others being 'under the influence' and, of course, management will not, either. So this incompetent type of worker is soon gone."

Robert J. Shoen of Burlington Country Club in Mt. Holly, N.J. demands a hiatus from drinking or doing drugs 11 hours before employees are scheduled to work.

"If, for instance, employees know that they are working Monday, they then must put the drugs and/or alcohol down 11 hours before work. If they can't schedule their recreation around work, they are not responsible enough to work for me," he writes.

Ken R. Meredith of Harbour View Golf Complex in Little River, S.C. believes in rehab. "But it will only work when the person has a strong desire to stop," he writes.

*—Thanks to all who contributed. The nine respondents quoted in this article will receive free LANDSCAPE MANAGEMENT painter's caps.*



## Via mail, e-mail, fax, etc.

### No throw-away

To the editor:

Finally, after years of throwing the trade mags in the magazine rack due to lack of good, solid information, I can enjoy this one. The November, 1995 issue was loaded with good tips for this 11-year warrior.

I look forward to next month and intend to follow some new paths due to an article or two. Thanks.

Shawn Wakefield  
Wakefield Landscape  
Auburn, Calif.

*(Shawn: Ahhhh. Like the homeowner or golfer who gushes over the property, it's comments like this that keep us editors going every month.)*

### Editors' choice?

To the editor:

Referring to your article in the February '96 issue of *LANDSCAPE MANAGEMENT* "Editors' Choice: Products for 1996," you made the statement that the Groundtek Lady Bug is "neat." It seems to me that this machine compromises operator safety.

The spray boom is in front of the operator, subjecting him/her to spray drift. The rotary spreader is in front of the operator as well, subjecting him/her to fertilizer dust or—even worse—chemical dust in the case of combination products. Mounting these behind the operator seems like a much safer way to go.

As a golf course superintendent, I am very aware of the safety concerns the public has regarding pesticide usage and the importance of having professionals apply these products. This machine does not look very professional to me.

I am very interested in hearing your comments regarding this.

Larry Livingston  
via e-mail

*(Larry: George Bori, general manager at Groundtek, addresses your concerns about the Lady Bug:*

*"There is a safety shield behind the spreader, and—as always—it's suggested that the operator wear the proper clothing and respiration equipment.*

*"The sprayer works with a low rate of pressure—10 psi—at the boom, and the special nozzles we use are low to the ground. The sprayer is also angled for good coverage, and the boom is so close to the operator that, as you travel forward, the product goes away from you. So drift is practically non-existent. You should, however, make sure to use quality materials with low dust to further reduce any potential problems.*

*"Obviously, if there was a problem, I wouldn't have large companies interested [buying] in the unit.")*

# Events

MAY

**3-4: Homestead International Plant Show**, Youth/Fair Expo, Miami, Fla. Phone: (305) 246-2113.

**6-8: Southeastern Turfgrass Conference**, Tifton, Ga. Phone: Jeanne Werner, (912) 386-3416.

**7: Outdoor Power Equipment annual meeting of the Certification Test Committee and Engine & Equipment Training Council**, Irving, Texas. Phone: Tom Kane, Kubota Tractor Co., (310) 370-3370.

**7-11: International Society of Arboriculture Western Chapter annual conference**, Hawaiian Regent Hotel, Honolulu, Hawaii. Phone: (916) 641-2990 or Roger Garrigue, (818) 246-5260.

**20-21: Developing a Golf Course Community seminar**, Buena Vista Palace, Orlando, Fla. Phone: (800) 999-3123.

**23-25: People/Plant Interactions in Urban Areas symposium**, San Antonio, Texas. Phone: Dr. Jayne Zajicek, (409) 845-4482.

**27-June 11: Garden Tour of Scotland**. Phone: (800) 757-0404.

**29-June 1: American Association of Botanical Gardens/Arboreta annual conference**, St. Louis, Mo. Phone: Kate Broniflawski, (610) 688-1120.

**29-June 5: International Plant Propagators' Society meeting**, Buenos Aires, Argentina. Phone: Jim Booman, (619) 630-4170.

**30-31: Elements of Color; Color Magic conference**, Inn at Maingate, Kissimmee, Fla. Phone: Merry Mott, Florida Nurserymen and Growers Association, (800) 375-3642.

**30-June 1: American Horticultural Society annual meeting**, St. Louis, Mo. Phone: Bridget Flint, (703) 768-5700.

**31-June 2: Christmas Decorating Conference**, Pittsburgh. Phone: Kathy Pizon, Plantscape, (412) 281-6352.

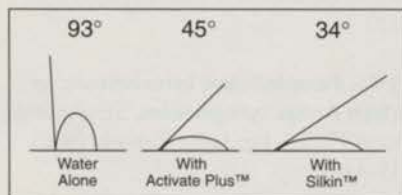
## Using Adjuvants In Your Plant Protection Program

Here's how adjuvants can improve the performance and coverage of your plant protection product applications.

Using adjuvants in your turf management program can help you improve plant protection product performance. They can even make the difference between peak and poor performance. The starting point is to find the right adjuvant for the job. The most commonly used adjuvants for turf are: wetting agents; spreader/stickers; spreader/activators; sticking agents, and buffering and compatibility agents.

### Wetting Agents

If you've been making thorough herbicide, fungicide and insecticide applications but still aren't getting the control you expect, your plant protection product may not be penetrating plant tissue surfaces. This reduces control and leaves spray residue susceptible to wash-off. The wetting agent Riverside® Silkin™ helps sprays penetrate plant tissue quicker for improved overall performance.



The wetting agent Riverside Silkin and spreader/activator Riverside Activate Plus™ reduce surface tension of spray so that it forms "flatter" droplets, improving coverage and absorption.

### Spreader/Stickers

Good control in some areas and poor control in others could mean drift and wash-off are taking their toll on spray performance. During application, spray droplet size varies, reducing adhesion and causing spray to miss the target. To improve coverage and adhesion, use the spreader/sticker Riverside Complex™. It adjusts droplet size for better performance, even under adverse conditions. By reducing surface tension in the spray droplet and keeping the spray mixture suspended, Complex can dramatically improve the efficiency of herbicides, fungicides and insecticides.

### Spreader/Activators

Droplet size varies during applications, making retention and distribution more difficult. Spreader/activators work in much the same way wetting agents

do. They deliver more uniform droplet distribution, quicker wetting and increased spray retention on leaf and stem surfaces when used with herbicides, fungicides and insecticides.

The spreader/activator Riverside Activate Plus improves performance and efficiency by moving the spray into plant tissue more quickly. By speeding up penetration, you get increased pest control.

### Sticking Agents

Contact herbicides, and non-systemic fungicides and insecticides can sometimes be washed away by rain, irrigation or even dew. Plant protection product sprays are also affected by drift. The sticking agent Riverside Plex® helps plant protection products penetrate the vegetation canopy and stick to plant tissue. That also helps control drift. Using

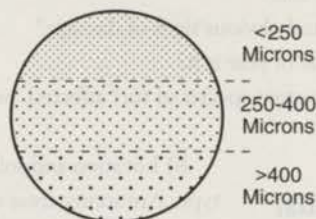


# Riverside® Adjuvants Maximize Your Pest Control.



Plex will help you make applications that will last longer, even in wet conditions.

### Approximate Actual Size



Spray droplets under 250 microns are susceptible to drift and poor coverage. Using Riverside Plex or the spreader/sticker Riverside Complex to control droplet size effectively controls drift and

improves coverage. Both maintain droplet size near 400 microns, ideal for the best application.

### Buffering and Compatibility Agents

If you're not getting the control you want but have followed label directions to the letter, it could be a pH problem in your tank mix. The buffering agent Riverside Combine® will help you correct the pH level for maximum performance from your spray mixture. If you're unsure of your pH level, use a pH test kit or, if you don't have one, contact your Terra representative.

### Combine® pH use chart.

		Starting pH			
		9	8	7	6
Desired pH	8	2	0	0	0
	7	4	2	0	0
	6	16	12	8	0
	5	20	16	12	8
		Oz/100 gal. water			

A chart like this one makes it easy to adjust pH level for optimum results. For example, if your desired pH is 7 and your starting pH is 9, you would need to mix 4 ounces of Combine per 100 gallons of water to get the proper pH.

In addition to buffering, Combine also works as a compatibility agent. The compatibility agent Combine should be used when: more than one plant protection product is included in a tank mix; when tank mixing different formulations like wettable powders and liquids; or when applying micronutrients or plant protection products with fertilizer. Also, Combine improves spray mix stability and dispersion.

To see if a compatibility agent will help your tank mix, try the jar test. Fill two quart jars each with a pint of water or carrier. Use the same source and temperature as you would in your actual tank mix. Mark one jar "with" and one "without." Add 1/4 teaspoon of Riverside Combine to the jar marked "with" and shake it gently for 5-10 seconds. Add the plant protection product(s) to both jars in the proper volume and sequence according to the label directions. Shake gently before adding each new product. Wait 5-10 minutes. Check both jars. If no gels, sludge, flakes or other irregularities are present, the mix is compatible.

If the jar marked "with" is compatible and the jar marked "without" isn't, a compatibility agent should be added to your tank mix. If the jar marked "with" isn't compatible, the tank mix shouldn't be used.

Wait 30 minutes. If the mixture separates but readily mixes again, the tank mix can be used with proper agitation.

### Adjuvants Pay Off

Overall, adjuvants can help you protect the investment you make in plant protection products by making them more effective. Whether you're using wetting agents, spreader/stickers, spreader/activators, sticking agents, buffering and compatibility agents or all five, they can help you overcome some of the common problems faced by turf professionals.

For more technical information on adjuvants, contact your nearest Terra Professional Products representative.



**G**et maximum plant protection product performance with Riverside® adjuvants. They make spray mixes work harder, perform better and control more.

Adjuvants help you get the most out of your program and protect your plant protection product investment at the same time. Riverside adjuvants make the difference between a good job and a great job. Use them with your spray applications to maximize performance.



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# Follow the clues to identify pests

*Turf managers who seek to classify insect pests must follow the clues and use the process of elimination.*

by PATRICIA J. VITTUM, Ph. D./  
University of Massachusetts

**T**he keys to successful insect control are: (1) identifying the pest insect; (2) determining when the insect will be in its most vulnerable stage for control; and (3) choosing an insecticide which is best suited for the conditions.

## The clues

- 1) Are there any insects in the area?
- 2) What do they look like? Insects are able to damage turf when they are in both the adult and immature stages.
- 3) Are these insects active in the daytime or only

at night?

- 4) Are they found near the surface, well into the thatch or in the soil?
- 5) Do you find obvious signs of damage?
- 6) What time of year is it?
- 7) Are just certain species of turf affected, or all species?

8) Location and soil type. Are sunny areas or slopes affected. How about sandy soils?

For example, several species of sod webworms

damage turfgrass throughout the northern half of the United States. The adult moths have tube-like mouthparts which are projected forward. The moths often fly just above the turf at dusk, looking for places to lay eggs. The caterpillars, which often are gray, green or brown and have dark spots scattered over their bodies, stay hidden in the thatch during the day and feed at night. The first visible damage is as small, brown or yellow patches, which grow larger over time, and is most evident during the summer months.

## Biological controls

Most healthy turf settings have natural predators or parasites which provide some level of natural control. Birds, skunks or raccoons often scavenge for insects in turf. In addition, there are numerous predatory insects—such as ants, ground beetles, lady beetles and spiders—to feed on pest insect eggs and small larvae.

Some parasitic insects lay eggs on or inside the bodies of pest insects. The young larvae hatch out and feed on the internal tissue, eventually killing the host. Unfortunately, most of these predators and parasites are very sensitive to many of the broad spectrum insecticides used in turf settings, so when we apply an insecticide to control a pest insect, we often also kill some of the beneficial insects.

In recent years, several biological control agents have been developed commercially, which can be applied to turf settings to reduce insect pest populations.

*Bacillus thuringiensis* is a bacterium which paralyzes the target insect's gut system. This bacterium exists in several different strains, each of which is effective against certain kinds of insects. *Bt var.*

## Sample the soil

Turf managers in cool-season locations should know at least three sampling techniques for measuring insect populations.

1) A soil sample is used to scout for white grubs. Dig a square six inches square, and about four inches deep. This is equal to 0.25 square feet, so four samples equal one square foot.

Turn the sample upside down on a piece of plywood and use a small trowel to break up the soil and dislodge it from the thatch. Remove any white grubs and place them in a small dish or pan until they can be counted. An alternative is to use a cup cutter to remove a 4.25-inch diameter core and inspect the soil in the core. The area happens to be 0.1 square ft.

2) Flotation, or flooding, is used to sample for chinchbugs. Remove both ends of a

coffee can, and insert it into the soil to a depth of at least two inches. Fill it with water. Within two or three minutes, insects which were trapped inside the can will float to the surface, where they can be counted.

3) A soap flush can be used to sample for cutworms or webworms. Add one or two tablespoons of a lemon-scented dish detergent to one or two gallons of water and spread the frothy mix over an area two feet per side.

Caterpillars and earthworms will be irritated by the solution and will wriggle to the surface where they can be counted. Do not use this test when the turf is under drought stress; do not use on short-cut bentgrass during heat of the summer unless you can rinse the area with straight water after the test. The soapy water serves as a magnifying glass and can burn the turf. □