

## EQUIPMENT

# Lesco gets rights to mixing system

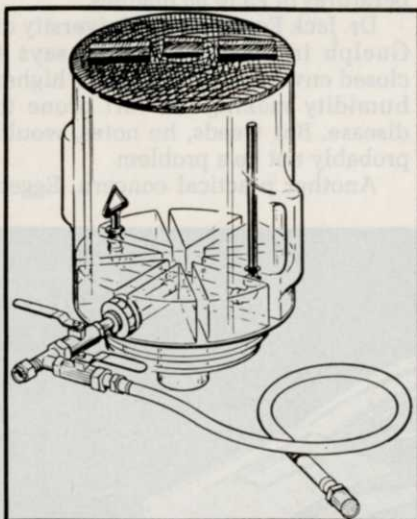
A Closed Mixing System for use with pesticide containers and wettable powder bags has been obtained by Lesco, Inc., Rocky River, Ohio.

"This system minimizes pesticide exposure during the most critical period, spray tank loading," notes Dr. Bruce Augustin of Lesco, who refined a design of Bob Brock, a golf course superintendent in the Washington, D.C. area.

The system mixes bagged pesticides into spray tanks without opening the bag. The rinsing action of the system efficiently empties wettable powder bags. The system is completely portable, allowing it to be used on any spray tank.

Wettable powder bags are opened by thrusting them on top of an arrowhead-shaped knife mounted on a spray nozzle. A water valve is opened, and the Closed Mixing System does the rest. All the operator needs to do is remove and dispose of the bag and triple-rinse the containment vessel by turning the valves back on three times.

A hole in the bottom of the containment vessel allows all product



and water to run directly into the spray tank.

"We use 3/4-inch pipe, which gives maximum pressure for a quick wash-out," notes Augustin.

The vessel can also be used for washing out one- to five-gallon containers, which are placed upside-down over another, taller nozzle.

Lesco hopes to have the Closed Mixing System on the market soon. For more information, call Dr. Augustin at (800) 321-5325 nationwide, (800) 362-7413 in Ohio.

## ATHLETIC TURF

# Real grass in a dome?? Maybe, say Toronto fans



Rose Marie Branson: tired of living in a plastic world

It was a meeting of the minds...Some of the best in turf science. And, a meeting of emotions...some of the best Blue Jays fans in Toronto. Together, it made for an historical day in the athletic turf industry: The first time that a North American city has seriously looked at putting natural grass in a new dome stadium.

Well, some skeptics might point out that years ago Houston tried it in the Astro Dome, but the grass died. No one has dared discuss the issue since.

Things have changed. The turf industry has changed. "The technology is available although it may not have been applied previously," says Dr. Jim Watson, vice president of Toro. "There are new construction techniques which were not available five to seven years ago. There are new management techniques. We know far more today than previously."

*continued on page 12*

# 1-2-3

"In case of accident..."

This is a common phrase, but in the case of pesticide storage and use, it can be backed up by some valuable information.

Roger Cagle, superintendent at Indian Hills Country Club, Marietta, Ga., gave attendees at the GCSAA show some tips on surviving chemical accidents and—just as important—preventing them.

If an accident occurs, he says, the worst thing to do is to attempt to cover it up. Do the opposite:

- Inform everyone affected by the problem, including the greens committee chairman, the club pro and manager and members.

- Take action. Develop a plan to deal with the problem, keep a high profile and keep unaffected areas of the course in good condition.

A good prevention plan can reduce the possibility of accidents, Cagle says.

1. Store chemicals properly.

- Store chemicals in their original containers and keep them labeled.

- Isolate higher-risk chemicals.

2. Use proper application techniques.

- Train employees properly on equipment and chemicals.

- Clean spray equipment thoroughly after use.

- Calibrate the equipment frequently to ensure proper application rates.

- Maintain good records. If a problem does occur, good records can go a long way toward diagnosing them.

3. Color code the chemicals. This can be done by manufacturer or type. Doing so reduces the chances of mistakenly using the wrong chemical for a job.

## **DOME** from page 11

The day of grass education was organized by Blue Jays fan Rose Marie Branson who says she's tired of living in a plastic world. The *Toronto Star* sponsored the seminar.

Besides Watson, Dr. Bill Daniel, inventor of the Prescription Athletic Turf system and Steve Wightman, field man-

degrees, while shoots need temperatures of 75 to 85 degrees.

Dr. Jack Eggen of the University of Guelph in Ontario, Canada says a closed environment may have higher humidity making the turf prone to disease. But weeds, he notes, would probably not be a problem.

Another practical concern, Eggen

## **CHEMICALS**

### **EPA, scientists call Milorganite safe to use**

Researchers and federal environmental officials have stressed the fact that no link exists between amyotrophic lateral sclerosis—also known as Lou Gehrig's Disease—and Milorganite.

"You can continue to use Milorganite," says Alan Rubin, chief of wastewater solids criteria branch in the U.S. Environmental Protection Agency's Office of Water. "There has been no causal link between Milorganite and ALS," Rubin emphasizes that the cause of ALS, a rare disease that kills by slowly destroying nerves that control muscles, remains unknown.

Possible links between the disease and the natural organic fertilizer were first made in the *Milwaukee Sentinel* before quickly spreading to national media.

The link was first suggested after it was learned that three former San Francisco 49ers had contracted the fatal disease. Three out of 55 team members is an unusually higher incidence for ALS.

No one could confirm Milorganite was used on the field when the three played. But Dr. Benjamin Brooks, director of a research clinic at the University of Wisconsin-Madison, told the *Sentinel* that the fertilizer might have been the cause. Some research has suggested a link between the disease and exposure to a toxic substance in diet or environment.

In a televised interview in Milwaukee, Dr. Alfred Rimm, chief of biostatistics at the Medical College of Wisconsin, said Dr. Brooks was "out of his water"—that as a neurologist, he should stay out of epidemiology. Dr. Rimm also said there was no need for a study of Milorganite since there is no basis for the alleged link.

One television editorialist in Milwaukee accused the *Sentinel* of sensationalism in its handling of the story.

At this point, it is too early to tell if the allegations will have any effect on spring sales. Milorganite is manufactured from sewage sludge by the Milwaukee Metropolitan Sewerage District.

## **SEED**

### **Turfseed supply may remain low**

Though it is a bit early to tell for certain, indications are that the 1987 seed supply will be similar in quantity to



The proposed Toronto dome stadium may use natural turf.

ager at Denver's Mile High Stadium, which uses a PAT system, addressed the crowd of about 100.

The Toronto dome stadium will be built with a retractable dome. Daniel suggested leaving the stadium open most of the time, closing it only to protect people. Daniel says the underground pumps in the PAT system would help the turf to survive indoors.

"We're making a living area for roots," Daniel says. "We now have the technology to manage the root zone."

Watson says that turf variety would depend on what's available in the area, but recommended a fine-leaf tall fescue with a five to 10 percent Kentucky bluegrass.

"The most critical thing is light," Watson says. "You cannot give consideration to grass unless you're prepared to provide light."

Even if the dome is left open most of the time, lights will be necessary for those times when it is closed.

Watson says that 10,000 foot-candles of light are necessary for turf to grow at its full capacity. It can grow, however, with 2,000 foot-candles. He recommends at least 40 to 50 percent of full sunlight capacity.

The lights could be on retractable tracks, although such aspects are engineering considerations.

Heat is another consideration. Watson says roots grow in 55 to 65

points out, is an external greenhouse to grow extra sod or store the turf if it's taken out each winter so trade shows can be used in the dome. Another option is to let the turf die and re-sod each winter with new sod. Or, the stadium committee may decide to maintain the turf year-round, with a raised floor for trade shows.

Wightman says that stadiums can be used for multi-purpose events, like rock concerts. He says the use of geotextile materials, such as Warren's TerraCover, to cover the turf before laying down plywood or chairs helps distribute weight, protects the blades, and allows the turf to breathe. When he used this system for the Bruce Springsteen concert, the turf received little damage.

Mile High Stadium can be converted from football to baseball in 13½ hours, says Wightman. This conversion includes completely moving the seats.

"We have overnight versatility and yet we have not sacrificed the safety and playability of the field," Wightman says.

Safety is the prime motivating factor in going with grass. Statistics prove that injuries occur more often on synthetic surfaces.

"Technologically I have no question about our ability to grow grass in a dome stadium," Watson says.

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last year's supply—not good.

Many of the shortages, says Gayle Jacklin of Jacklin Seed, would be a result of limited supplies in 1986 being drained. Because of heavy demands from the south, tall fescue supplies in general will be down a bit. Bluegrass will also be down, despite an increase by Jacklin to 80,000 growing acres producing about 58 million pounds of seed. "No carryover will cause the shortages," she said.

However, turf-type ryegrass supplies will be up 10 to 15 percent, but

again, shortages from no carryover will keep supplies tight and prices up. Bentgrass also has been given an increase in acreage, up 35 percent, and supplies of Pennlinks, Penn-cross and Seaside should be good, she said.

For those who can hold on, Jacklin said 1988 could prove to be a good year for seed. With more acreage, bluegrass should be in good supply, and prices will begin to fall once again.

Jacklin made her observations at the Iowa Turfgrass Conference.

## CORPORATIONS

### Company offers \$285 million to purchase ChemLawn

Waste Management Inc. has offered ChemLawn president Jack Van Fossen \$285 million to purchase the company. But Waste Management might not be the only company interested in buying out ChemLawn.

According to market experts, the fact that 4.1 million ChemLawn stock shares changed hands the day following Waste Management's offer might point to the possibility of other companies also being interested in purchasing the Columbus, Ohio-based company.

Another development was that stockholders bid ChemLawn stock up to \$29 per share, two dollars more than Waste Management's offer.

In a letter to Van Fossen, Waste Management chairman Dean Buntrock wrote: "Should ChemLawn enter into discussions with any other party, we would expect any discussions conducted on an even and illuminated playing field. You may be able to demonstrate to us that there are values in ChemLawn that we have not recognized which would justify an even higher price."

Waste Management, one of the nation's largest solid waste disposal and recycling companies, is based in Oak Brook, Ill.

## PESTICIDES

### Acclaim! finally given registration

The Environmental Protection Agency has granted registration to Hoechst-Roussel Agri-Vet Co. for Acclaim! 1EC herbicide.

Acclaim! controls crabgrass, goosegrass and other grassy weeds. It can be tank-mixed with pre-emergence products as part of a planned program or used alone as a single-application post-emergence treatment. Acclaim can also be applied selectively to specific problem areas, eliminating broad coverage waste, Hoechst notes.

## GOLF

### Aerial photography aids superintendents

Aerial photography can help train new employees, says Pat Lucas, superintendent of Innis Arden Golf Club in Old Greenwich, Conn. Lucas, who spoke to the GCSAA conference, says aerial photography is a good manage-

*continued on page 18*

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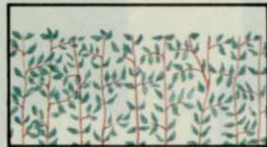
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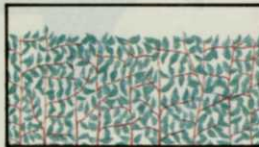
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Featured photo is hedge in Nutley, N.J. treated May 8 and photographed July 15.

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ing will cause them to thicken-up and become more attractive.

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# SHORT CUTS

**MIXING IT UP...**Landscape managers mixing pesticides have more exposure than applicators, Dr. Bruce Augustin of Lesco told the audience at Maryland Turfgrass '87. "Be sure to use impervious aprons, gloves and maybe even a respirator when mixing," he said. He added that most turf pesticides used professionally can be bought retail. The only real difference is the concentration. Augustin said that windshield washer fluid has a higher toxicity than any pesticide you could use.

**SPEAKING OF MARYLAND...**Another speaker at Maryland Turfgrass '87, Dr. John Street of Ohio State University, said that landscape managers should concentrate on mixing nitrogen put on turf in spring and early summer. "The more nitrogen you put down, the more top growth you get," Street said. "Top growth shoots take priority over roots and rhizomes for available nitrogen in rapid growth situations. You don't want to take your turf into the summer stress period with bad roots." He added that more emphasis should be placed on fall and late-season fertilization. He said that spring green-up can be speeded up by two to four weeks with this type of fertilization, and that the greening-up period can be extended one to two months in the late season.

**HEAR YE, HEAR YE...**Knox Russell, landscape superintendent at the Bahama Princess resort in Freeport, calls it his "messenger plant." It's not uncommon to see initials carved in or other messages written on the clusia plant outside the front entrance of the hotel. "The leaves are soft," Russell explains. "It doesn't really hurt the plant."

**'SUPER' GOLFER...**Mike Apodaca, golf course superintendent at Revenaux Country Club in Springs, Texas, won the 1987 golf championship with a two-day total of 144. This was his second GCSAA golf championship, the first coming in 1982. Gary Bennett of South Carolina, who was one stroke back after the first day, finished second at 145. The championship was played at Fred Enke Municipal Golf Course and Ventana Canyon Golf and Racquet Club.

**TREE MAN...**Dr. Alex Shigo, the retired chief scientist for the U.S. Forest Service, has completed work on two books concerning proper tree care. *A New Tree Biology* provides new information on pruning, defects, fertilization timing, tree starvation and numerous diseases affecting trees. The second book, *A New Tree Biology Dictionary*, is an expanded index for the first book, providing terms, topics and treatments for trees and their proper care. The two-book set sells for \$61, which includes postage and handling inside the United States (\$2 extra for each set ordered outside the U.S.). Orders can be sent to: Shigo and Trees, Associates, 4 Denbow Rd., Durham, NH, 03824.

**PHOTOGRAPHY** from page 14  
ment tool.

"Go over aerial photos with new employees so they can get areas set in their mind," Lucas says. "But it's still not a substitute for going out in the field."

Lucas says superintendents need to follow a few simple steps to get a workable aerial photo of the course:

- Clear the course of all leaves and debris. The picture should be shot at a time when trees are dormant and no snow or ice is on the course.

- Avoid shadows. It's best to take the picture at noon.

- Take it on a day when the weather is clear.

- Allow adequate lead time for painting of the golf course.

How long this last step takes depends on the size of the course. Lucas uses a painting machine to paint an "X" about three feet across every irrigation head. He uses paint to outline all greens and fairways.

Use a reasonable scale for the photo. Lucas recommends that one inch equal about 80 feet.

"The photos can provide improved communication with crew members and greens committees," Lucas says.

To explain things, Lucas places a clear plexi glass sheet over the photo and draws on the glass rather than on the actual photo. For example, he will circle the areas which received wetting agents, how much, and what time the applications took place.

He does the same thing for tree maintenance by coding each tree with a number and letter. The number represents the hole; the letter shows the tree type.

He inputs much of this information into his computer so he can get printouts of work from past years.

## CEMETERIES

### **Computers help cemetery managers**

Preserving the nation's heritage is the responsibility of cemetery managers. Jan Burrows from the Cemetery Mapping Service says computers can help managers live up to that responsibility.

"Cemetery managers have the responsibility to create, maintain and preserve," Burrows told the Kentucky Cemetery Managers Association. "You are part of your community whether you have a monument or memorial park...20 acres or 100 acres."

At small cemeteries, landscape managers are sometimes asked to know where to find information on past burials. Families who come in



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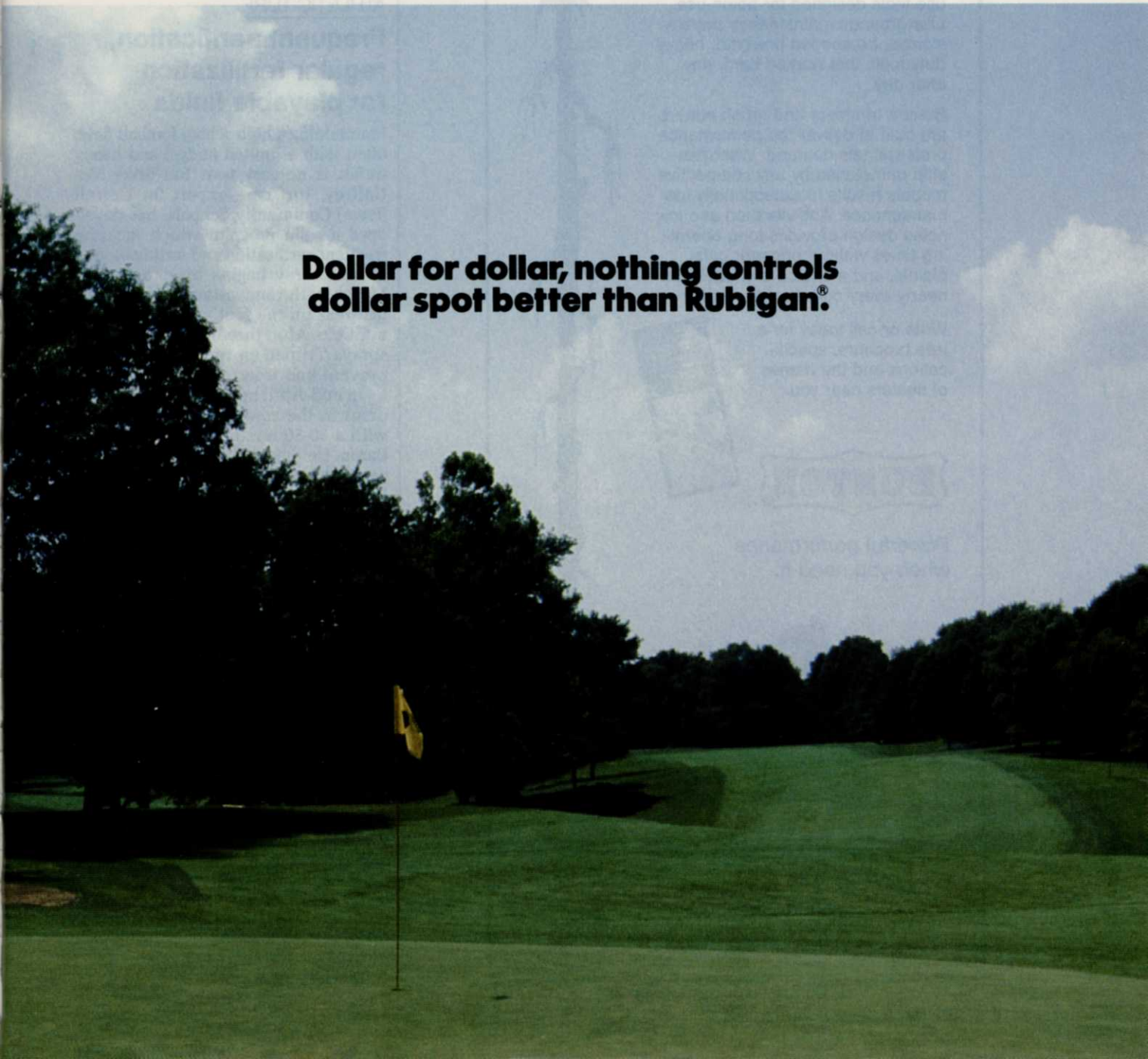
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from out of town may need to find out where a loved one is buried.

Burrows says custom-designed software makes that job much easier than looking through the cemetery.

Through such software, maps can be made of the cemetery. The maps can show sections of the cemetery, which lots are sold, and information about who is buried in which lots.

Burrows says all programs should have print-out capabilities in case the family wants a record. But, she warns, don't rely solely on the computer.

"I strongly believe in storage off premises," she says. "Keep extra maps in a safety deposit box. I know of one cemetery that lost 30 years of records in a fire."

### ATHLETIC TURF

#### Frequent aerification, regular fertilization for playable fields

Maintaining a high school football field, often with a limited budget and heavy traffic, is no easy task. But Mike McCaffrey, turf care expert for Carroll (Iowa) Community Schools, has developed a solid program which includes frequent aerification and fertilization.

McCaffrey begins his program in March with renovation to heavy traffic areas on the football field such as midfield. After three or four weeks, he sprays Trimec on renovated areas to prevent knotweed.

In mid-April he aerifies the field and drags in the cores before overseeding with a 50-50 mix of Manhattan II and Baron. He then fertilizes with two percent siduron and ¼ lb. of nitrogen, and lets the field set for a month.

In May he applies two percent siduron again, and in another month applies Dacthal and 1 lb. of 19-4-6 fertilizer.

After a July 1 field evaluation, he applies ½ lb. of 18-5-9 for green-up, and in early August aerifies in three directions.

The third week of August he aerifies again and applies 21-2-20 at 1 lb. in preparation for the first scrimmage the next week. By mid-October he sprays with Trimec for broadleaf weeds.

His final treatment, in late October or early November, includes aerification in four or five directions and an application of 8-4-24 fertilizer for good spring green-up.

He irrigates on the average of 1¼ inches per week and keeps the grass at three inches, cutting in varying patterns three times a week.

McCaffrey suggests keeping play

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