

grass growth. No set specifications can be made that will satisfy all conditions. Physical testing of soils and soil amendments is necessary to prescribe the right soil mix. Such a mix will not only promote grass growth, it will also favor the activity of soil organisms.

Topdressing. Material used for topdressing must be of the same texture as that of the root zone. Any variation from this in terms of higher silt and clay content could be disastrous. Sand topdressing is used under some conditions with satisfactory results. However, for best microbial activity select material exactly the same as the root zone.

Biological Activators. Some topdressing materials are formulated with biological activators. These contain organic substances that are conducive to the population growth of soil microbes. Some contain cultures of specific organisms.

A good healthy sports turf soil will not require biological activators and little benefit should be expected from their use. A poor sports turf may benefit from treatment with these activators, however. The critical factor is the amount of root growth. Where roots are inactive and organic matter content of the soil is low, activators seldom do much good. When applications of the activator are timed so that roots are still active and organic matter is still readily available for decomposition, benefits are more frequently noted.

Slow-release natural and synthetic organic fertilizers best meet the needs of both turfgrasses and soil organisms.

Pest Control. Insecticides, fungicides and herbicides are essential in the culture of heavily used sports turf. "Organic" methods of turf management will *not* make turf sufficiently resistant to insects, diseases and weeds to eliminate the use of pesticides. Do not exceed the rates and frequency of application that are recommended by the manufacturer. Also apply pesticides at the proper time to achieve the best results. When this is done, injury to turfgrasses and soil organisms will be minimal.

Fertilization. Slow-release natural and synthetic organic fertilizers best meet the needs of both turfgrasses and soil organisms. These are subject to decomposition by soil microbes. Other fertilizers used in

sports turf fertilization should be applied in such ways that they duplicate the the slow nutrient release properties of natural and synthetic organics. This may involve use of sulfur-coated urea or IBDU. It may mean frequent applications of urea or methylene ureas or inorganic materials in relatively small amounts. Most importantly, it means reducing nitrogen applications during stress periods and occasionally utilizing iron, either as chelates or other turf formulations, instead of nitrogen to maintain turf color and vigor.

Wetting Agents and Irrigation. Soils that do not wet uniformly cannot support either a healthy, vigorous turf or an active population of soil organisms. Regular use of non-ionic surfactants is advised.

Rainfall is seldom adequate for meeting the water requirements of sports turf. Although some fields are overwatered, many others dry down too far because of inadequate irrigation systems. Irrigation schedules should be programmed to prevent excessive dry down while avoiding constantly-wet conditions. Soils probes or moisture meters can be utilized to determine the necessary frequency and depth or irrigation for each field. Take factors such as shade, wind and weather into consideration and check and adjust system operation frequently. You want to apply water in such a way as to encourage deep root penetration.

continued on page 32

One bad Fall Could change a Child's whole Life

The National Sports Turf Council

Young athletes need your help

Let's look at reality...many, maybe even most, of our sports and playground surfaces are in deplorable condition. Many of these are unsafe and even treacherous. We still tolerate this even though we have the finest agronomic knowledge, turfgrasses and equipment at our disposal. Add this to our collective enthusiasm for physical activity... watching and participating...and we have a powerful force to construct quality fields, maintain them, and/or correct existing sports field turf problems. We believe that lack of vital information and blurred focus of intentions have slowed progress. NSTC will take all of this talent, information and material, focus, then project the essence into an active force for sports and playground safety.

Who do we need to get involved? Support from organizations, institutions and associations is essential, but individual efforts from parents, teachers and coaches is mandatory. We need input... emotional, testimonial, technical, statistical and physical. Then we need funds to fuel the mechanism. We need you.

We need community liaison, people who will grab the ball on a local level and run with it. We need people in the right places who can implement a plan to tackle a problem, devise game plans in the community and make them work. We need people of conscience who realize that falling is a part of physical activity and that getting up and shaking it off is a right, and pain and injury are not acceptable. We need you.

You can help by joining today!

Become associated in some category with NSTC and with affiliated organizations. Give financial aid to NSTC to assure continuity of Safer Sports Turf operations. Help implement plans on a local/community level.

Talk to others... get them involved. Join today.

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- Local Commercial \$100
- Donor (not a member) ... Any Amount
- Contributor (Receives Mailings) \$25 to any amount

I (We) wish to support NSTC in the above category (check appropriate box)

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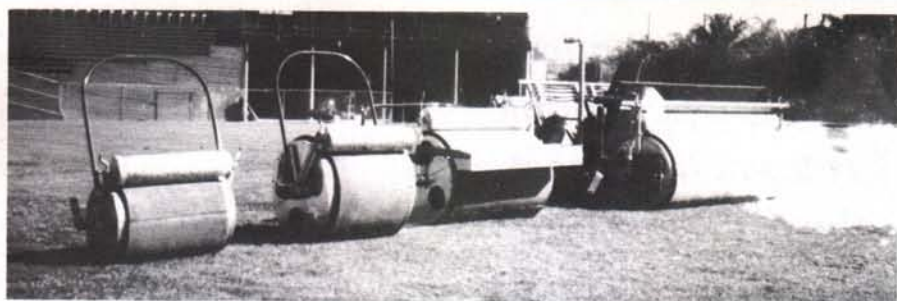


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This patented design, the only one of its kind in the world, removes up to an inch of water with each pass without damaging or compacting even the softest surface. SUPER SOPPERS come in four models, ranging from the WHALE which is used on large areas like football fields, baseball fields and horse racing tracks, through the SHARK and DOLPHIN which are the mid-range sizes, to the MACKEREL which is ideal for tennis courts and smaller jobs.

"The SUPER SOPPER is great! We use it every time it rains."

David Frey, Field Maintenance Dir.
Cleveland Indians and Browns

"Compared to what we've used in the past, the SUPER SOPPER is fantastic!"

Butch Stemp, Parks & Rec. Dept.
South Holland, Illinois

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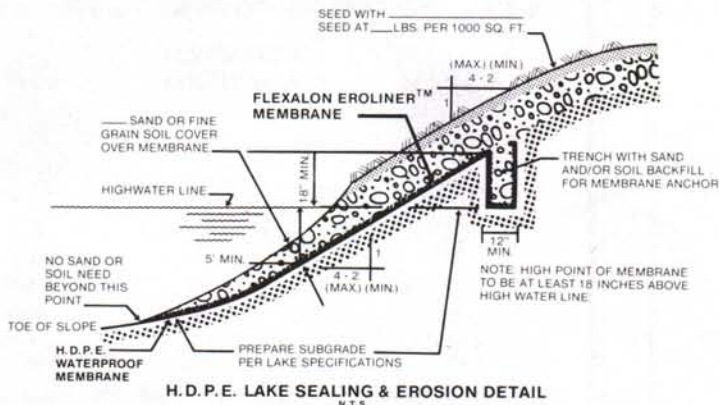


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The Living Soil

continued from page 31

Aerification. Sports fields are always prone to compaction regardless of the soil mixture used. This means that regular aerification or coring is necessary. Spiking may also be needed on a frequent basis to loosen up surface compaction. Both grass roots and soil organisms require oxygen and release carbon dioxide. Neither can survive in compacted soil.

Mowing. In sports turf, the grass roots are the source of organic matter that conditions the soil and makes it a living, dynamic system. Close mowing restricts root growth and reduces the amount of soil organic matter that is available for soil microorganisms. Mow sports turf as high as the play of the game will allow. Even a small increase in leaf length will help make a sturdier grass plant by increasing carbohydrate production for use in root growth.

Seeding. As grass plants wear out, they must be replaced by new plants. The frequent seeding of sports fields is necessary in order to introduce new plant life. Use seed that germinates quickly and produces seedlings of high vigor such as the new turf-type perennial ryegrasses. Fine fescues, Kentucky bluegrasses and turf-type tall fescues are also used for sports fields. New improved grasses that have increased disease and insect resistance, enough vigor to heal injuries fast and crowd out seedling weeds are highly recommended.

Conclusion. Scientific information on soil micro- and macro-biology is much more extensive than many people realize. In 1955, Dr. William Albrecht of the University of Missouri published a paper entitled "The Living Soil" in *The Golf Course Reporter*. Thirty-three years later the subject is still very much alive. A one-day seminar entitled "The Biology of Turfgrass Soils" will be presented at the Golf Course Superintendents Association of America Convention in Houston, TX, in February 1988.

There is no doubt that soil microbiology and biochemistry are complicated subjects. Despite the wealth of information on the subject, only limited discussion of soil microbiology is found in the trade journals or in the programs of leading turf conferences across the country. Clearly it is a difficult subject to learn. Nevertheless, it is very important for sports turf managers to have a grasp of the fundamentals to protect the beneficial organisms and the roots below the surface of our valuable sports turf.

We must keep in mind that sports turf-grasses are living plants subjected to harsh growing conditions most of the time. Without the assistance of the organisms living in the soil, the physical and chemical processes taking place there can change little to accommodate the stress of unfavorable conditions imposed on the grass, particularly its roots. It is the living organisms in the soil that share the good times with the bad with turfgrass roots. They work together to make things better for each other. ☺

GOLF COURSES INCLUDED IN HALF OF NEW REAL ESTATE PROJECTS

The appeal and profitability of golf courses has convinced the developers of one out of every two new real estate projects to include courses as a centerpiece, according to the American Society of Golf Course Architects (ASGCA).

The results of the society's study showed three primary reasons for the popularity of golf courses among real estate developers. The first is the attraction of golf courses to golfers and non-golfers when they look for year-round or resort residences. Since 1960, the number of golfers in the U.S. has more than quadrupled while the number of courses has only doubled. Home buyers, conventioners and vacationers like the convenience of being able to play a course associated with a development.

Finally, ASGCA cites the excellent track record of profits for developers and soaring property values for homeowners. Such success is not limited to southern resort areas. One New England resort and conference center that included a golf course had sales more than twice its projected target. Buyers who paid \$90,000 for their units were able to sell them two years later for \$150,000.

ASGCA says developers can expect to spend at least \$1 million to build a regulation 18-hole golf course. The society said developers should plan on spending between \$100,000 to \$250,000 annually for course maintenance.

The complete report, "Planning the Real Estate Development Golf Course," is available from ASGCA, 221 N. LaSalle St., Chicago, IL 60601.

NATIONAL CAMPAIGN DIRECTED AT SLOW PLAY

A national campaign to address the problem of slow play on golf courses has been launched by *Golf Digest* magazine. More than 13,000 golf facilities in the U.S. will be receiving large posters featuring a turtle with a golf club and 11 symptoms of slow players. "We want to gently remind all golfers that slow play is a disease that can strike golfers of both sexes and all handicaps," says Jerry Tarde, editor of the magazine.

Part of the program allows club members to identify the slow players at their own clubs to their club professionals. In addition to posters, there are buttons and decals to keep the message alive.

"We believe that the players on the PGA and LPGA Tour have contributed to the problem because many amateurs imitate what they see on television," said Tarde. "At the same time, golfers like Fuzzy Zoeller, Tom Watkins, Lee Trevino and Patty Sheehan prove that you can still play well if you play fast."

LOFTS EXTENDS LINK WITH FIRM IN HOLLAND



Bert Barenbrug (left) and Jon Loft.

Lofts Seed Inc. recently signed an agreement to extend its 15-year-old relationship with Barenbrug of Holland for another decade. The marketing and production pact started in the early '70s with Baron Kentucky bluegrass.

The popular bluegrass developed by Barenbrug is produced and marketed by Lofts in the U.S. More than 70 million pounds of Baron are sold worldwide each year.

Jon Loft, president of Lofts Seed Inc. announced the two companies will continue to cooperate on research, development and marketing of new turfgrass varieties to be sold in this country.

You Could Win the BEAM CLAY® BASEBALL DIAMOND OF THE YEAR AWARD

Enter your best baseball field in the Beam Clay Baseball Diamond of the Year Award contest. No entry fee is required. You could receive the beautiful trophy to display at your facility during the upcoming Sports Turf Managers Association Awards Banquet.

The Award is sponsored by Beam Clay, the Sports Turf Managers Association and *sportsTURF* magazine in recognition of efforts in promoting excellence in the management and appearance of baseball diamonds. Entries will be judged in three categories: professional diamonds, college diamonds, and school, municipal or park diamonds.

Send the information below to enter:

1. Age of baseball diamond (year of installation).
2. Geographic location (city and state).
3. Operating budget for baseball diamond.
4. Irrigation: None _____ Manual _____ Automatic _____
5. Total number of maintenance staff for field.
6. Does baseball field have lighting for night games?
7. Number of events on baseball diamond per year.
8. Types and number of events on diamond other than baseball?
9. How many months during the year is the field used?
10. Why do you think this field is one of the best?
11. Include an assortment of color slides or prints of diamond.

Deadline for entries

Entries must be postmarked no later than November 30, 1987. Mail your entry to *sportsTURF* magazine, P.O. Box 156, Encino, CA 91426. Selection of winners will be made by a committee of the Sports Turf Managers' Association.

Mail entries to: Beam Clay Award
sportsTURF magazine
P.O. Box 156
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sportsTURF



PRO SHOW '87 TO DEBUT IN DALLAS

The Pro Show, a new international trade show for landscape contractors, park and recreation personnel, golf course superintendents, sports turf managers and everyone associated with the green industry, will make its debut November 18-20, 1987. It will be held at the Dallas Convention Center, Dallas, TX.

Sponsored by the Outdoor Power Equipment Institute, Pro Show 87 will feature more than 200 manufacturers displaying new products and equipment inside the 100,000 square foot center. A one-million-square-foot outdoor area has been provided for exhibitors to demonstrate their equipment. Attendees can see, compare and evaluate the performance of the various products.

Products on display will include, grounds maintenance and installation equipment, horticultural chemicals and plant foods, irrigation equipment, landscape accessories and materials, maintenance supplies and services, and outdoor power equipment.

"We are filling a need for a show that encompasses all segments of the industry at the user level," says Helmut Adam, president of Ransomes Inc., chairman of the Show. "And we chose the Southwest because of its convenient location, easy accessibility into Dallas, and the growth of the Southwest."

In addition to the trade show, Pro Show 87 will also serve as an educational learning experience. A comprehensive seminar program featuring speakers with an international perspective on industry topics will offer information on a variety of subjects, ranging from equipment maintenance and irrigation design to the business end of the landscape industry.

Many of the industry's major equipment and irrigation manufacturers, as well as manufacturers of landscape supplies, have already committed for exhibit space.

For more information contact Mary Jane Reynolds, Visitor Information, Pro Show 87, 101 N. Seventh St., Louisville, KY 40202 or call (502) 582-1672 (In the U.S.A.-toll free 1-800-654-0349.)

NEW YORK CONFERENCE EMPHASIZES SPORTS TURF

The New York State Turf and Grounds Show will be held November 3-6, in Rochester, NY, will have more sessions on golf and athletic turf management than any other topic. There will be two sessions each on golf course and athletic field management, in addition to one session on lawn care, one on weed control and one on pest management.

George Toma, turf consultant to the Na-

tional Football League, will have more than two hours to discuss sports turf-related problems and solutions. John Liburdi, grounds managers for the New York Yankees farm club in Albany, NY, and winner of the 1987 Baseball Diamond of the Year Award, will discuss his turf program at Heritage Park. Dr. Robert Shearman of the University of Nebraska will focus on maintaining wear-tolerant turf while Jim Kelsey of Partac Peat Corp will talk about in-field safety. Cornell University's Dr. Martin Petrovic completes the second sports turf session with a discussion on wetting agents.

Pesticide leaching and groundwater will be the chief concerns addressed during the first golf session. The second session will concentrate on water restrictions and reducing turf water needs. Drainage and aquatic weed control will also be discussed.

Tree care and irrigation system maintenance will be the topics of two pre-conference seminars this year to provide sports turf managers with valuable landscape maintenance tips. Many national companies and regional distributors will participate in a two-day trade show during the conference. For more information contact Beth Seme, New York State Turfgrass Association, P.O. Box 612, Latham, NY 12110, (518) 783-1229.

RANSOMES PURCHASES BRITISH REEL COMPANY

Ransomes Group in England has purchased Mowing Machine Maintenance (MMM), a British manufacturer of reel cylinders, bed knives and grinding machines. Ransomes Group Chief Executive Robert Dodsworth said the acquisition will allow the company greater potential for both replacement parts and original equipment parts in its growing export market.

The company will operate under the MMM name with minimum interference from Ransomes. Founder Ralph Winstanley will serve as a consultant to MMM for the next two years.

MMM's U.S. dealer, Mowing Machine Grinders and Reels, Inc., of Andalusia, AL, will also operate independently, said Don Cotton, vice president. "Ransomes support will help us expand our supply to the U.S. market greatly," said Cotton. "We will continue to supply reels and bed knives to a number of U.S. manufacturers in addition to a complete line of replacement reels and bed knives for other company's mowers. We also expect to increase our line of grinders and sharpeners."

MMM reels and bed knives are utilized in Bunton, Brouwer, John Deere, Ransomes, Roseman and Steiner mowers. The company also has replacement reels for Toro and Jacobsen reel mowers.

"The two companies will operate independently with one exception," said Mark Foree, marketing manager for Ransomes Inc., in Johnson Creek, WI. Foree said Mowing Machine Grinders and Reels products will probably be sold by Ransomes distributors.



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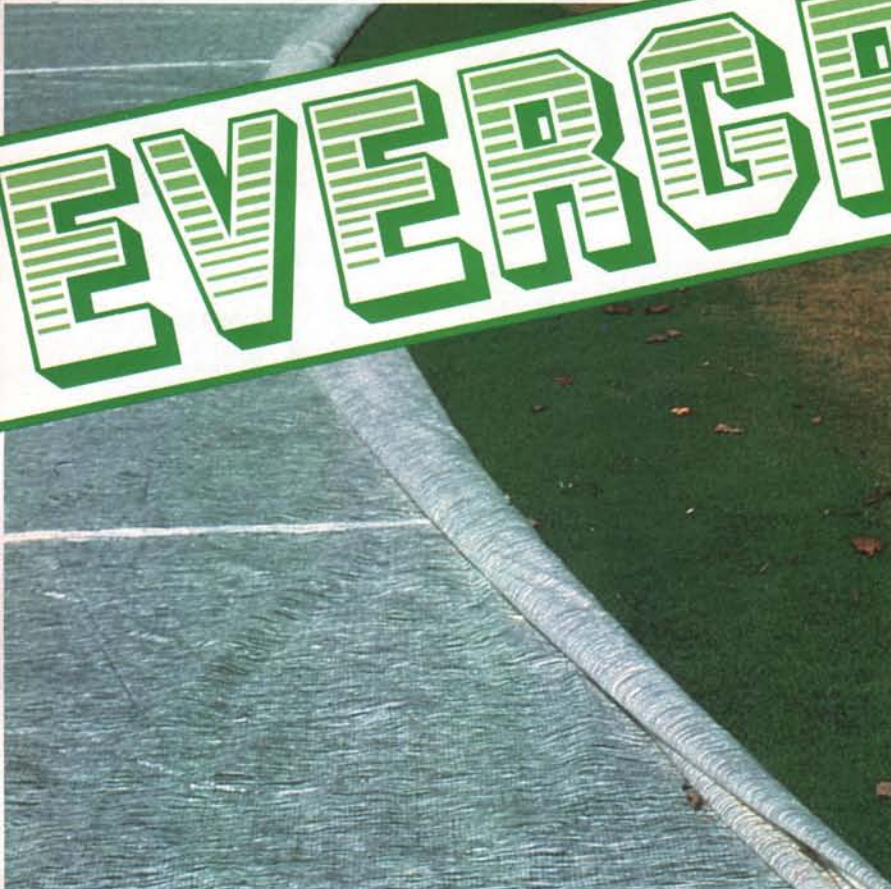
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EVERGREEN is designed with the superintendents and turf managers convenience in mind. The covers are lightweight and strong, for easy handling. The one-piece construction and simple anchoring peg system allow installation or removal in less than half an hour per cover. These simple steps are all that's needed to provide trouble-free protection and enhanced germination throughout the year.



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to the recreation and horticultural markets throughout North America and Europe. Prevents desiccation from strong winds and keeps soil temperatures several degrees warmer than the surrounding areas. **EVERGREEN** is 85% transparent allowing grass to receive the proper amount of sunlight to survive winter and get a head start on growth in early spring.

Healthy root development is already underway very early in spring.



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EVERGREEN covers create a greenhouse effect stimulating more rapid growth than uncovered grasses.

Acting as a soil blanket, **EVERGREEN** covers retain necessary heat for plant growth while the patented weave construction allows the cover to "breathe", minimizing the risk associated with excessively high temperatures.

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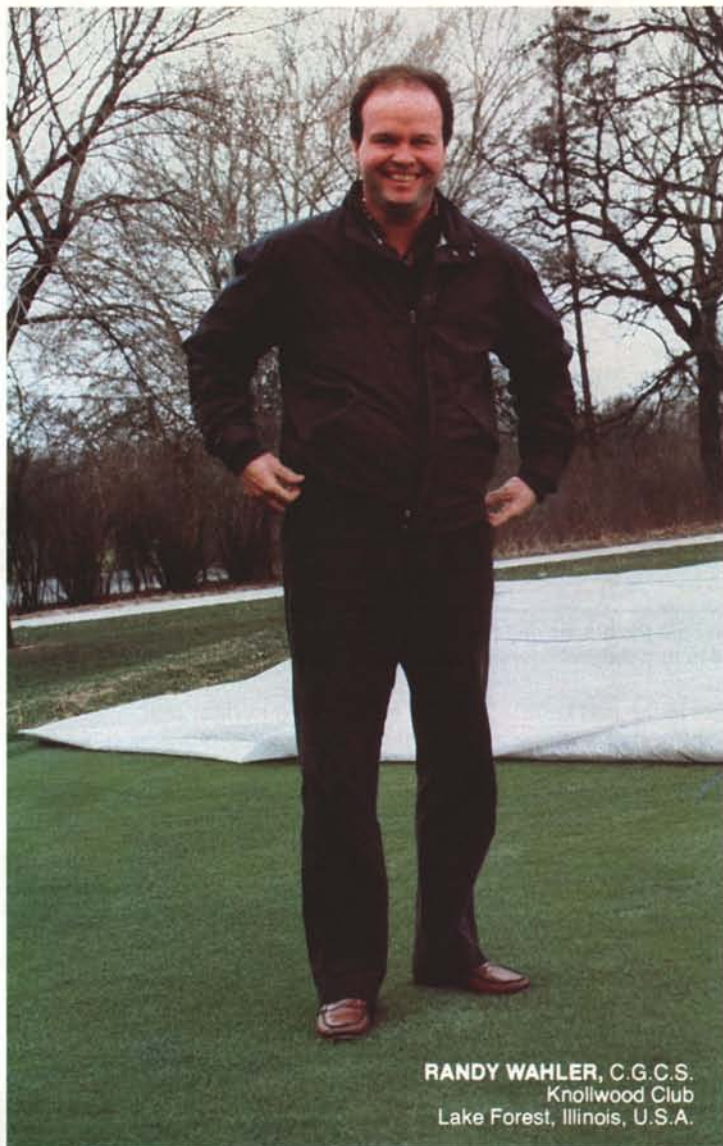


3) The cover is unfolded onto green or tee.



4) **EVERGREEN** is secured with anchoring pegs supplied with each cover.

APPLICATION PROVEN ON GOLF COURSES THROUGHOUT NORTH AMERICA AND EUROPE



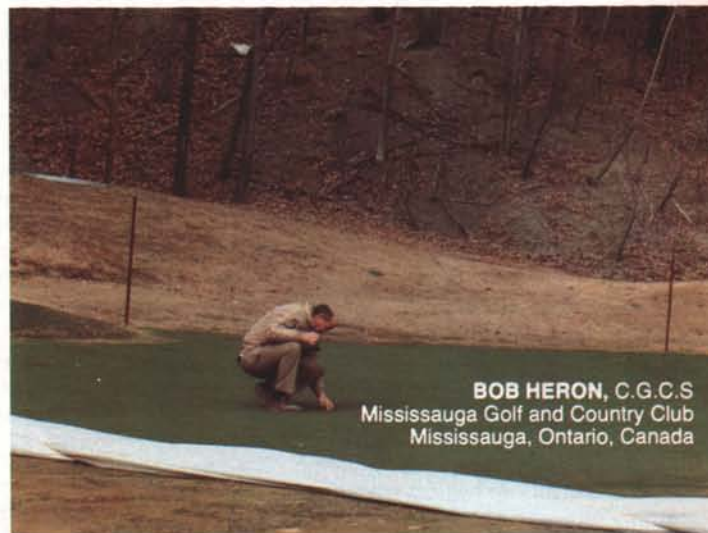
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Knollwood Club
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CHALKBOARD

TIPS FROM THE PROS

GRINDING AND BACKLAPPING TO REEL BLADE SHARPNESS

Few turf managers doubt that the reel mower makes an impressive cut. The scissor action of reel blades against a bed knife cuts turf almost like a razor. When operating properly, a reel mower uses less energy than rotary or flail mowers to cut the same turf. It's getting reel mowers to operate properly that drives some turf managers away from them.

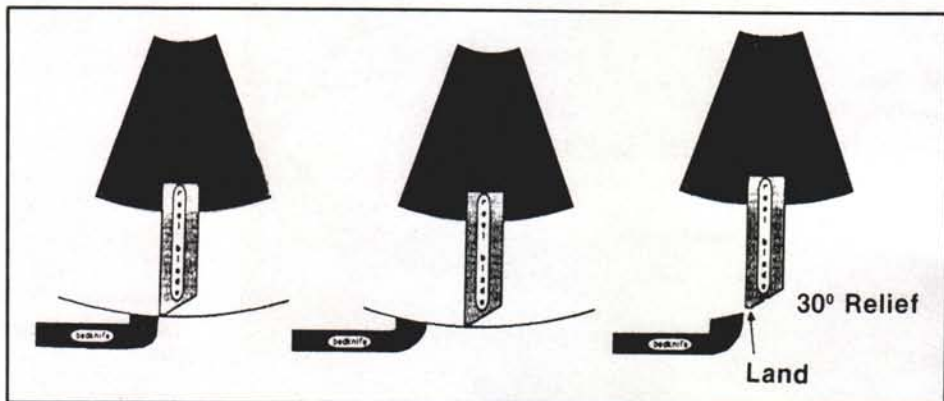
Don Cotton of Mowing Machine Grinders and Reels Inc., Andalusia, AL, has been trying to calm the nerves of frustrated reel mower owners for almost ten years. More than once he has seen reel gang mowers just sitting idle, abandoned because the operator couldn't figure out how to adjust the reels. "The clients said the mowers worked beautifully the first year or so, but eventually got to the point that keeping belts on these units was nearly impossible. If they worked when new, there was no reason why they couldn't be repaired to mow again." In the end, he discovered that the belts weren't at fault, the problem was how the blades and reels were ground.

When he attended the GCSAA Show in Atlanta he found that every grinder representative had a different theory about grinding reels and bed knives. He heard about spin grinding, relief grinding, cylindrical grinding and single-blade grinding. No wonder reel mower owners were confused, he thought.

During the show, Gerry Brouwer, president of Brouwer Turf Equipment Ltd., of Ontario, Canada, introduced Cotton to a British gentleman by the name of Ralph Winstanley. For more than 25 years, Mr. Winstanley had been making reels and grinding equipment as owner of Mowing Machine Maintenance in Wath-upon-Dearne, UK. His company makes more reels than any other company in the world.

As Winstanley explained to Cotton, the movement of the blades across the bed knife creates heat and friction. As blades wear down with use, the part of the blade contacting the bed knife is thicker thus increasing the amount of friction. One way to reduce this friction is by decreasing the blade thickness by "relief grinding," or making the tip of the blade thinner. The other way is to add a relief angle to the bed knife. Winstanley said relief grinding both blades and bed knife would greatly enhance the performance of a reel mower and produce a more consistent quality of cut.

After grinding, the mower operator can maintain an adequate cutting edge by fre-



Grinding a relief angle on both the blades and the bed knife of a reel mower greatly reduces the amount of power needed to turn the reels during mowing.

quently adjusting the reel to the bed knife. Eventually, the edges of the reel and the bed knife become rounded. It then becomes necessary to back lap until the blades are square again. Back lapping, says Cotton, is nothing more than a grinding job using a grit compound and the friction produced by spinning the reel in reverse and adjusting it toward the bed knife to rapidly wear the blades down to a sharp edge.

Back lapping is also the norm for producing a perfectly round reel after individual blades have been ground. The ideal situation, according to Winstanley, is to relief grind the individual blades and then spin

grind to assure a perfect reel.

When adjusting reel mowers, the blade should be as close to the bed knife without actually touching. Make this adjustment with the trailing edge of the blades, not the leading edge. The leading edge can cut ribs out of the bed knife if they touch.

So, if you have a reel mower sitting in the maintenance building because it is out of adjustment, take it to someone with the proper grinding equipment and give it another try. With a better understanding of reel adjustment, you should be able to bring that mower back into full production once again.

MOLE CRICKETS AND FLORIDA COURSES



Layton Overstreet, superintendent of Marriott Orlando World Center, manages a two-pronged assault against the southern mole cricket.

When the leaves start falling up North in autumn, the starters at Florida's prestigious resort golf courses get busy. That's the way it has to be for these courses to be profitable. One of the biggest threats the past few years has not been the weather or airline fares, but rather an inch-and-a-half-long insect called the southern mole cricket.

This hard-to-control pest hides from the

daytime Florida heat in burrows as deep as ten inches below the surface. As temperatures drop in the evening, the mole cricket burrows up to the surface to feed on the turfgrass roots, especially those of bermudagrass and bahiagrass. The insect's enlarged front legs act like spades for digging and also serve as scissors for cutting

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Photo courtesy of Nat Binns, golf course superintendent, Lakewood Country Club, Rockville, Maryland. (unretouched photo)

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Southern mole cricket nymph.

Chalkboard

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grass roots. Their tunnelling causes severe damage to roots and can create mounds in the turf. Before the crew can get the sprayer out at dawn, the pest is out of reach once again deep in the ground. As a result, insecticides are often applied in the evening to catch the insects near the surface.

Although its damage is most evident in July, the southern mole cricket is a concern

during much of the year. In central Florida, the insect's eggs hatch in late spring, while in southern Florida spring and fall hatches are common. Turf managers must stop the feeding nymphs as well as the adults before they can reproduce.

Layton Overstreet, superintendent at Marriott Orlando World Center resort, has seen the damage mole crickets can do to greens and tees and has instituted a two-wave attack against it. In addition to his regular dur-

ban applications for mole crickets, armyworms, and sod webworms, Overstreet also spreads a mole cricket bait containing the insecticide throughout the summer. The bait and insecticide are impregnated on a corn cob carrier. It is applied at 150 pounds per acre on all important turf areas as well as areas adjacent to that turf. When the nymphs feed at night, the bait is there too.

In southern Florida, superintendents must contend with two generations of mole crickets every year. "We're learning we have to worry about them year-round," notes Dan Jones, manager of Banyan Golf Club in West Palm Beach. Luke Majorki, general manager of golf course maintenance at PGA National in Palm Beach Gardens, has to balance his mole cricket control program with more than 900 golfers per day in the fall. "We make an extreme effort to keep spray tanks invisible to golfers," he states. "We'll start spraying with Orthene in the evening on the front nines only when everyone has made it to the back nines. If we need to spray the back nines, we reverse the tee times for that particular day so by six p.m. we can spray the back."

Majorki likens mole crickets to northern dandelions. "You can have them completely eradicated and then find them coming in from an adjoining property. While you can't totally get rid of them, you can certainly control them. If left unattended, mole crickets will stay in one place until they absolutely devastate you."

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