

Preemergence Weed Control

continued from page 21

tournament or series of games, aerifying afterward to relieve compaction and restore drainage and soil gas exchange may be more important than preemergence weed control. You can reapply the herbicide after aerifying, but you really don't lose that much control with normal cultural practices. Oxadiazon seems to hold up better to soil disturbance than some of the other preemergence products."

David Ball, product manager for Elanco, says combinations of preemergence herbicides with fertilizer from major formulators such as Regal, Lebanon, The Andersons, Lesco, Gordon and Scotts, have made preemergence weed control more affordable for many sports turf managers. "These formulators have helped educate the turf manager to the benefits of preemergence herbicides. With their help we have been able to develop products which fit regional as well as national turfgrass markets." Elanco has a new preemergence turf herbicide with improved broadleaf weed control called isoxaben in the process of registration for introduction in 1989. "It is the first premergents that was developed specifically for broadleaf weed control, instead of grassy weed control," states Ball.

Safety is the goal of Rhone Poulenc with oxadiazon, says Dan Stahl, marketing manager. "We look for products with a high margin of safety and low toxicity potential



A walking boom sprayer and indicator dye can provide an extra level of certainty during pre-emergence herbicide applications.

to desirable turf," he states. Oxadiazon is very insoluble in water and stays at the soil surface. "If a turf manager accidentally applies too much Ronstar by using an improperly calibrated spreader, he can use activated charcoal to fix his mistake. Also, since it stays at the surface, it does not get absorbed by the roots of sprigs.

"You don't have to be an expert with spray equipment to use premergents," says Welch with ICI. "There are effective products in

both liquid and dry-applied forms. Golf courses and stadiums tend to use spray equipment, but there is no reason to buy this equipment if you have a spreader that can be calibrated."

Sports turf under heavy use is ripe for invasion by annual weeds. Preemergence herbicides were invented specifically for this reason. A sports turf manager needs to use every tool available to him to keep his fields safe and playable.

NEW!!! ROLL-N-TILT Manual Dumper Available for the Daihatsu Cut Away



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BUFFALO BISON OPEN IN NEW PILOT FIELD



For years, the Buffalo Bisons fought off embarrassment in what they admitted was one of the worst stadiums in the country, War Memorial Stadium. Nevertheless, more than a half million fans came to see the AAA American Association baseball team last year.

This spring the team will play its home opener in the pride of Buffalo, Pilot Field, a new 19,000-seat stadium built with \$30 million of state, local and private funds this past year. Bob Rich, owner of the Bisons, hopes to double attendance in the new facility and set a new record for minor league baseball. Rich and 84 other investors paid \$1,000 each to save the 100-year-old franchise in 1979. Rich took over the team in 1983.

HOK Sports Facilities Group designed the new stadium to blend in with the architecture of historic downtown Buffalo. "Pilot Field follows the tradition of Ebbets Field, Wrigley Stadium and Comiskey Park," explained Ben

Barnert, project architect. "It looks like it has been part of Buffalo since day one." To preserve tradition on the field, the new stadium also has natural turf.

Rich said the stadium is, "the cornerstone for a downtown turnaround." It is located less than two blocks from a recently completed mass transit terminal and shares numerous parking facilities with the War Memorial Auditorium. Part of the turnaround could be a Major League Baseball expansion franchise. In that case, a third deck would be added to Pilot Field to increase seating to 40,000.

Pilot Field has all the amenities of Major League stadiums. HOK included 38 luxury boxes, a 3,500-seat club level, complete press facilities and computerized scoreboard. The die-hard bleacher fan also has 1,000 seats to choose from in right field. "Pilot Field is a downtown stadium designed so that all Buffalo sports fans can enjoy baseball in comfort," remarked Barnert.

BALTIMORE APPROVES TWIN HARBOR STADIUMS

An abandoned rail station three blocks from The Inner Harbor area of downtown Baltimore, MD, will be turned into a multi-sport complex with both a football and baseball stadium by 1991 it was announced in January. Using part of the old station for a stadium club, team offices and concessions, HOK Sports Facilities Group will design a 55,000-seat outdoor baseball stadium and a 75,000-seat, possibly domed, football stadium.

The Baltimore project will be the second twin-park facility in the U.S. The Truman Sports Complex in Kansas City, MO, is the only one now in existence. HOK's Ron Labiniski designed the complex including Arrowhead and Royals Stadiums. Design work

is just beginning on the Baltimore project.

Baltimore was trying to convince St. Louis Football Cardinals William Bidwell to move his team to their city before he selected Phoenix, AZ.

FIVE RUTGERS STUDENTS WIN LOFTS SCHOLARSHIPS

Five graduate turf students at Rutgers University, New Brunswick, NJ, have received Peter Selmer Loft Scholarships from Lofts Seed Inc. The number of scholarships has increased each year since the awards began in 1984 in memory of the late Peter Loft. The scholarships were presented by his brother Jon Loft, president of the company.

The students were selected for their

scholastic achievements and interest in turf-grass science. They are Scott Sherman, Kathi Lynch, Melodee Kemp, Jane Breen and Jennifer Johnson-Cicales (a three-time winner). The scholarships are funded by Lofts, as well as corporate and private sources in the turf industry. Royalties from Lofts new tall fescue, Tribute, will be used to endow the scholarships.

OHIO SUPERINTENDENT TAKES SKINS AT PGA WEST

Steve Blackburn, superintendent at Briardale Greens Golf Club in Euclid, OH, first thought club professional Fred Schneller was kidding when he asked him to be his partner for the USF&G National Pro-Am Skins Game competition. They had played together in a number of pro-am events, but never anything as big as this. As the pair won a local round and made the final cut at TPC of Sawgrass in Ponte Vedra, FL, Blackburn got psyched. The next stop was PGA West in La Quinta, CA, to play on the same course and at the same time as Jack Nicklaus, Lee Trevino, Arnold Palmer and Fuzzy Zoeller.

Blackburn and Schneller continued to dazzle the television audience as they fought for the lead, winning more than \$19,000 in skins. Victory was in their grasp, but it slipped away in the final moments. The pair had to settle for second place. Blackburn, an amateur, had the experience and \$400 in prizes to take home to Euclid, an eastern suburb of Cleveland.

During an interview on ESPN, Blackburn praised the course and urged other superintendents to find the time to play as many courses as they could. "I try to look at my course as a player first and then as a superintendent," he stated. "The more a superintendent plays, the more he'll appreciate the game of golf and what the player sees on his course." After playing many top courses all over the country, Blackburn started keeping his greens at Briardale "really fast." He believes the greens challenge the golfer to concentrate on his putting just as a scratch golfer does.

CORRECTION

A news item on the purchase of Mowing Machine Maintenance (MMM) by Ransomes in the September 1987 issue incorrectly stated that Roseman reels are made by MMM. Roseman mowers are distributed by MMM's U.S. branch, Mowing Machine Grinders and Reels, Inc., in Andalusia, AL.

The photo for the cover of the November 1987 issue of lawn bowlers was shot by Martha Hummel, senior recreation supervisor for Beverly Hills Recreation and Parks Department, not Martha Mull as stated on the contents page.

REBOUND

LETTERS FROM READERS

A SHOW FOR ALL SPORTS TURF MANAGERS

40 Years of Experience

As a Class A member of GCSAA for nearly 40 years, and having attended many GCSAA Conference & Trade Shows, beginning with the 1937 show in Washington, DC, when my dad (Lester Hall) was a speaker, I feel I am qualified to answer your Front Office column in the January 1988 issue of **SPORTSTURF** magazine.

I am sure GCSAA members as a whole feel an acute kinship to any and all managers of intense use turf. I have seen in my more than 50 years of experience in turf many of the changes and the progress in the turf management field that both you and Denne Goldstein wrote about in this issue. Hard work, a quest for knowledge, desire to improve one's self, renewing old acquaintances, making new ones and the desire to be able to present to his employers the latest in equipment and supplies, has made GCSAA's International Turf Conference and Trade Show the greatest assembly of turf managers, educators and exhibitors in the free world. To my knowledge, no one, in any area of turf management the world over, has ever been denied permission to attend.

Turf professionals assembled from the world over have attended and I have had the privilege to have met and spoken with them over the years. These have all added to the outstanding qualities of the truly International Turf Conference & Trade Show. Since its humble beginning in 1926, GCSAA has led the field in the advancement of high-quality turf. Not just for golf, but in all areas of turf, including sports, cemeteries, rights-of-way and home lawns.

The past few years, other professional turf managers have been invited to participate as well as conduct their own educational segment of educational programs. As consultant to the Collier County School Board for their athletic fields, I had the privilege to attend some of the sessions in both San Francisco and Phoenix. Those I attended were very informative, excellently presented and well-attended by many other golf turf managers.

I have never heard a member-at-large or board member say anything negative about our fellow professionals attending sessions on golf turf management. Those in fields of like endeavor must help themselves to the opportunities presented. To malign our board and membership in this manner is, to say the least, unsportsman like. Interest and hard work are the keys to success in any endeavor.

The years of success of GCSAA's Inter-

national Conference and Trade Show are due to these ethics; not only by the board, the show committee, and member participation, but also our fine staff of headquarter personnel. The efforts put forth by all of these and the years of experience gained in 58 years of presenting the show should certainly entitle GCSAA to remain the significant sponsor of the show.

I feel the answer lies more in the next to last paragraph of your article rather than any of those preceding. Are these other organizations willing to accept GCSAA's leadership along with the heading, "GCSAA Presents The International Turf Conference and Trade Show?" I feel GCSAA members, board and staff have been more than generous by making its presentation open to all who are sincerely interested and willing to work to make the show even larger, better and more educational.

After all, the show and conference had very humble beginnings and if allied professional organizations wish to compete rather than join our presentation, that is their privilege. The exhibitors are those who must suffer the most in making multi-exhibits of their wares to those of very similar professions.

Every turf professional manager is or should be aware that an opportunity such as GCSAA's Turf & Trade Show exists, and if they desire to be better, all they have to do is register and more importantly, ATTEND. With such a combined attendance the exhibitors would gain by not only larger attendance, but fewer shows. With this savings in costs, they more than likely could make their participation and exhibits better and even more educational.

Daniel L. Hall, Jr., CGCS
Bonita Springs, FL

An Obligation to Share

The Musser International Turfgrass Foundation and the National Sports Turf Council, with lots of help, unlocked the door and opened it a crack. In your editorial you kicked the door wide open and sent the blockers sprawling. It is wonderful to see the future through an open door.

Those who have the power to raise funds for research and education are morally obligated to share for the good of all who are involved and doing the right things without bias—seeking only to serve those who need it the most. No longer can one segment stand aloof displaying riches beyond measure while another impoverished facet of the industry suffers from neglect.

Thank you Bruce for the clarity with which you stated the equation. Your magazine is reflecting your leadership.

Fred V. Grau
President, Musser International Turfgrass Foundation

Working Together Is All That Counts

The purpose of the Front Office column in the last issue was to bring the industry together. I hesitated mentioning GCSAA board members at all. Anyone who devotes the time and energy to be a board member deserves only thanks, not criticism. From what I've heard, these board members are just trying to protect the conference.

All that matters is that we recognize each other as teammates, not opponents. If a few members of the sports turf market gain special status, it should be their pleasure to help others do the same.

Bruce Shank, associate publisher

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TIPS FROM THE PROS

RESEARCH REVEALS ACCELERATED BREAKDOWN OF PESTICIDES

Evidence is mounting that microorganisms living in thatch are causing some highly effective insecticides for soil pests to break down rapidly after repeated use. Dr. Harry Niemczyk at Ohio State University's Agricultural Research and Development Center in Wooster, OH, suspects that poor late-summer control of grubs (scarabaeid beetle larvae) is being caused by biodegradation of insecticides in the thatch as opposed to ineffectiveness of the insecticides in the soil. He further suspects that this phenomenon is not limited to certain insecticides and in the future may be linked to poor performance of some herbicides and fungicides.

Niemczyk started looking into the problem when turf managers in Ohio, Massachusetts and New York reported isolated cases of poor control of grubs during late summer following a spring application of Oftanol, an insecticide known for season-long control of turf-damaging soil insects. Something had to be changing in the thatch and/or soil after repeated application of the insecticide.

He started combing the literature for reasons to explain the insecticide's decreasing performance in sporadic instances. One by one, he considered application timing, inadequate posttreatment irrigation, disruptive management practices, any unusual climatic factors and insect resistance. He quickly instituted laboratory tests of thatch and soil samples taken from golf courses experiencing poor late-summer grub control.

Niemczyk, with the help of Dr. R. A. Chapman, an entomologist at the Canada Department of Agriculture Research Center, London, Ontario, discovered that when a known amount of isofenphos, the active ingredient in Oftanol, was added to thatch and soil samples taken from the problem courses, it was rapidly broken down. When the same amount of insecticide was added to thatch and soil from previously untreated sites, it did not break down. Niemczyk obtained the same results in field tests last year. The culprit was something in the thatch and soil of previously treated turf, not insect resistance to Oftanol. Niemczyk suspected that microorganisms in the thatch and soil were breaking down the insecticide before it had a chance to control the grubs.

Previous studies had shown that microorganisms can adapt to the presence of a pesticide to the point of being able to use it as a source of energy, degrading the pesticide in the process. These tests also revealed that the population of these microorganisms was higher in the thatch than in the soil.

"We have not directly linked microorganisms to the breakdown of insecticides in turf yet," says Niemczyk, "but something in the thatch and soil is breaking them down, in less than a week's time."

"We (Niemczyk and Chapman) propose that microorganismal adaptation to residues of isofenphos concentrated in the thatch is the major reason for the noted reduction in the residual effectiveness of isofenphos to control summer infestations of scarabaeid larvae," said Niemczyk. "It doesn't appear

Niemczyk suspected that microorganisms in the thatch and soil were breaking down the insecticide.

that this accelerated breakdown is limited to long-residual insecticides. It may well involve short-lived insecticides as well as herbicides and fungicides. It's important to stress that the problems we've seen so far do not apply everywhere. The rule of thumb should be, if a compound works, use it."

However, if a pesticide you have used repeatedly for two or three years is not providing the same control it did originally, accelerated degradation, not insect resistance, may be the problem.

Until more conclusive evidence is obtained, says Niemczyk, the turf manager can try alternating pesticides and managing thatch to reduce the potential for accelerated degradation. Once a turf area adapts to degrade a particular insecticide rapidly, it maintains its ability to break down the compound for years. Furthermore, there is no practical way to completely remove thatch—nor is it desirable.

Niemczyk has found that as much as 95 percent of the residues of many commonly used insecticides applied to turf remains in the thatch even after watering-in. He has also shown that most grub control takes place at the thatch/soil interface where the larvae consume organic material (thatch, tillers, and rhizomes) treated with insecticide. "The fact that the residues are in the thatch is not all bad," he states.

The biggest problem to developing a cure for accelerated degradation is that microor-

ganisms do not always react in a logical pattern, explains Niemczyk. Logic would suggest that if the majority of the microorganisms reside in the thatch, reducing the amount of thatch could possibly reduce the potential for accelerated pesticide breakdown. This would suggest that a program of thatch control, including aeration, proper mowing intervals, turfgrass selection and avoiding excessive fertilization, could reduce the potential for accelerated degradation. While complete removal of thatch is impractical, keeping the thatch layer under control might also permit more insecticide to reach the soil where it can possibly last longer.

Niemczyk has also been researching the movement of pesticides applied to turf. So far, tests of eight different insecticides have revealed that thatch traps much of the residue, even after posttreatment irrigation. These same insecticides applied directly to soil move into the top two inches depending largely on their solubility in water.

AMMONIUM SULFATE BOOSTS HERBICIDE PERFORMANCE

Recent studies by a University of Nebraska weed specialist for Monsanto Corporation have shown ammonium sulfate improves the control of annual grasses and broadleaf weeds by glyphosate, a nonselective postemergence herbicide. Glyphosate is the active ingredient of Roundup and Landmaster herbicides.

"Ammonium sulfate can counteract the effects of unfavorable weather conditions which tend to make weeds more tolerant to herbicides," says Dr. Fred Roeth, weed specialist at the South Central Research and Extension Center of the University of Nebraska. Roeth explains that ammonium sulfate improves the absorption of glyphosate by plants.

In similar field trials conducted by Monsanto, ammonium sulfate improved control of annual grasses by up to 25 percent and control of broadleaf weeds by up to ten percent. "It all depends on how far from optimal weather conditions are in a given year," stated Monsanto's Dr. Neal Hageman. He recommended that landscape managers in areas of unpredictable weather add 17 pounds of dry ammonium sulphate to every 100 gallons of spray solution.



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Buddy Templeton examining his weed free turfgrass quality at the end of the season.

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Buddy Templeton says, if it costs twice as much, he would still use it. Observers say, Buddy has Creeks Bend Golf Club, Hixon, Tennessee, in the best condition ever. The reason, RegalStar. Buddy states that post emerge herbicides were unnecessary due to RegalStar results.

Independent university turfgrass researchers are reporting superior

turfgrass quality when treated with RegalStar. This unparalleled quality is due to two factors: season long weed control from a **single application**, and **no root pruning or other turfgrass injuries**, just healthy turf.

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ROOKIES

PRODUCT UPDATE

VERTICUTTER



A 30-inch verticutter has been designed by Hako-Werke to dethatch grass and collect the clippings in its 7.1 bushel capacity hopper.

The Verticutter's welded-steel construction makes it withstand the rigors of lawn, park and greens maintenance. The unit's blades can be adjusted to provide the spacing of cuts and the depth of penetration required for each particular dethatching job.

Powered by an industrial 203 cc, 3.5 kw air-cooled engine with electronic ignition, the verticutter has two forward speeds and one reverse.

HAKO-WERKE

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TOW-BEHIND VACUUM SWEEPER



John Deere engineers have developed a medium-size vacuum sweeper for turf and grounds applications. The model 141 sweep-

er collects debris through a 48-inch wide vacuum scoop and stores it all in a 1.4-cubic-yard hopper. An impeller compacts the debris by flattening cans, shredding leaves and paper, and pulverizing bottles. A great deal of debris can be stored in the 141's hopper before it's necessary to dump the load.

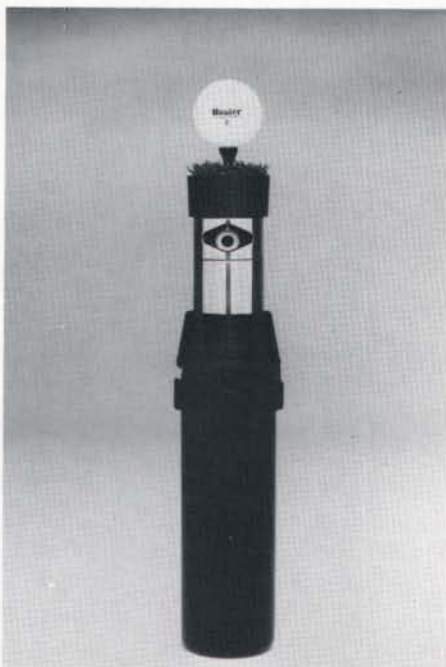
The vacuum sweeper is powered by a 16-hp gasoline engine with a 10-gallon fuel tank and has an impeller speed of 3000 rpm. It also includes a vacuum pick-up hose for hard to reach areas. The vacuum scoop is positioned in front of the pneumatic tires at the widest part of the machine for thorough cleaning of areas where it's difficult to maneuver. It also has an optional filtration system that helps prevent sand loss from the hopper.

Deere recommends that the model 141 be drawbar-mounted to a towing tractor with at least 20 PTO-hp. For ease in dumping, the vacuum has a spring-loaded, self-unloading rear gate. It also has a steerable jackstand for convenient hookup.

JOHN DEERE

Circle 131 on Postage Free Card

POP UP SPRINKLER



The I-44 Sod Cup pop-up sprinkler head from Hunter Industries has the unique ability to disappear into the turf when retracted. The sprinkler is capped with a living plug of sod that becomes part of the playing surface when the sprinkler is not operating.

Designed for moderate- to high-capacity usage on golf courses, playing fields and other public areas, the sprinkler has been extensively field tested at the PGA West Golf Course in La Quinta, CA.

The I-44 has an adjustable discharge rate from 6.5 gpm to 25.8 gpm within a radius range of 45 feet to 67 feet. An interchangeable nozzle/stator set is supplied with each head. The sprinkler is available in 17 fixed arcs and a full circle. Vandal-protection features include a clutch-protected drive system.

HUNTER INDUSTRIES

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ALL TERRAIN FORKLIFT



Spyder, Inc., has designed its new S-35X material handler to be well-suited for virtually any industry that utilizes pallet transportation and storage.

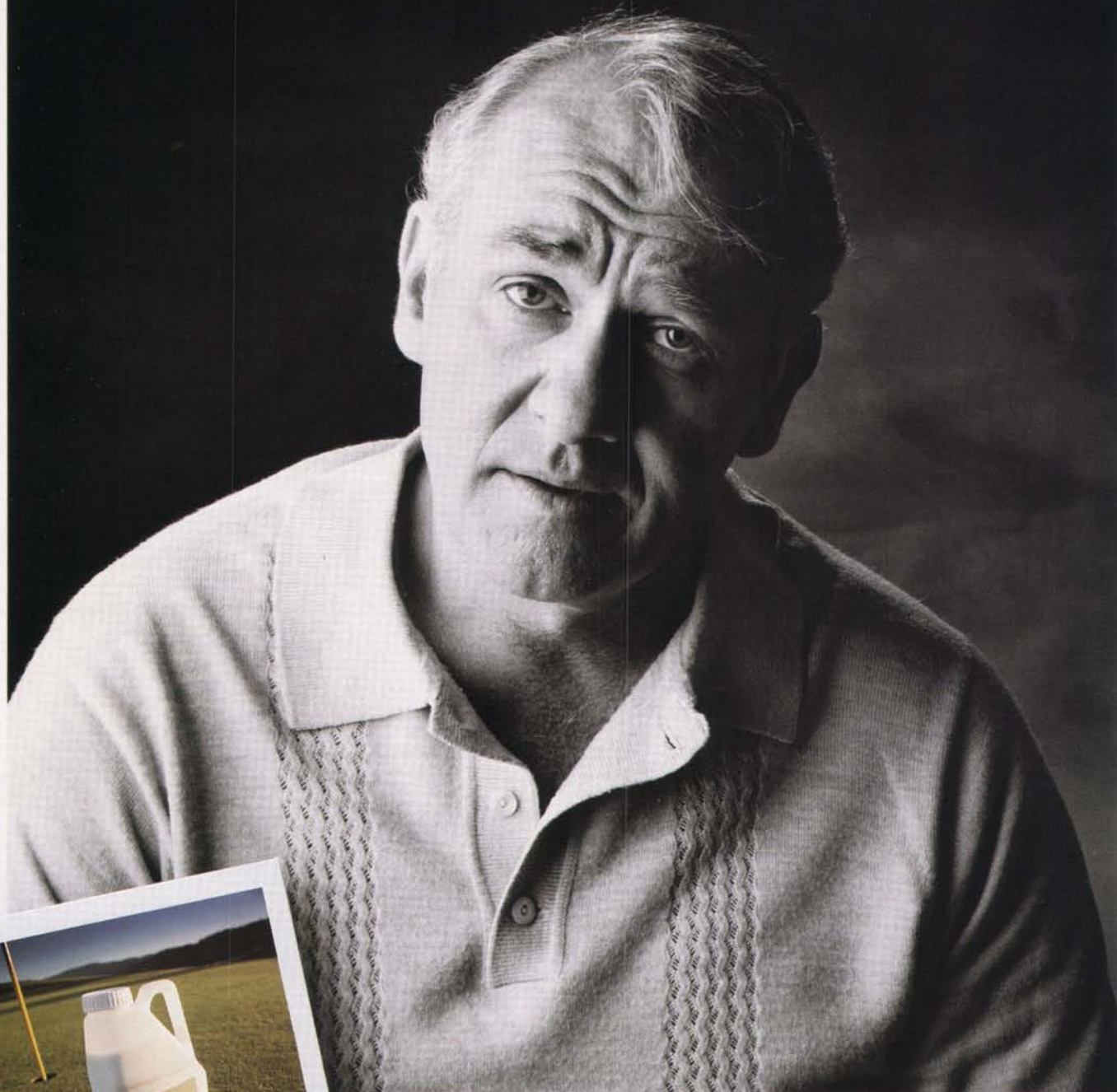
The all-terrain forklift carries its load between two hydraulically-driven front wheels. This carrying system provides for a lift capacity of up to 4,000 lbs even though the S-35X weighs only 3,000 lbs. The light weight makes the S-35X ideal for tough material handling jobs even on rough muddy terrain. Patented telescoping legs enable the forklift to maintain a level load on up to a 30 degree grade.

The S-35X can be towed behind a car or truck when carried on its custom designed light-weight trailer. Independently powered hydraulic drive wheels make the machine extremely maneuverable. A single control provides a backward pull for reverse, a push ahead to go forward and left or right to turn. The distance you push the control determines the speed of the forklift.

SPYDER, INC.

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“One of my employees ran the mower into the lake.
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hair purple. But what really concerns me is Pythium.”



There's one sure way to avoid worrying about Pythium.
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got other things to worry about. **CIBA-GEIGY**

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ROOKIES

PRODUCT UPDATE

STEERING WHEEL MOWER



Middlesworth Engineering and Manufacturing, Inc. has announced the introduction of their new steering wheel controlled zero-turning radius mower. This optional control system can be used in place of the standard lever controls on any of the Middlesworth "C" Series out-front mowers.

The steering wheel option uses a foot pedal to control the ground speed and direction. The steering wheel increases or decreases the individual wheel speed to provide the steering. The system's true zero-turning radius capabilities will appeal to those who are more comfortable with steering wheel type controls than they are with lever type controls.

MIDDLESWORTH ENGINEERING

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LIGHT TOWERS



By utilizing telecommunication towers from UNR-Rohn and light fixtures from General Electric, Chuck Lindstrom and Associates

has developed a cost-efficient lighting system for colleges, parks and high schools.

The hot-dipped galvanized towers have been designed to provide strength and stability at low cost. Steps and service platforms enable the light fixtures to be cleaned, replaced and aimed without lowering them to the ground. Lights can be mounted higher than many pole-mounted systems to reduce interference with player vision during games and practices.

The light fixtures are GE Powr-Spots with metal halide lamps. All lighting layouts and designs are engineered by GE Lighting Systems Division for Lindstrom. The company also offers crossarms, lights and hardware for pole-mounted systems.

CHUCK LINDSTROM & ASSOCIATES

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IMPROVED ST. AUGUSTINE

A significantly improved St. Augustinegrass developed by turfgrass breeders at Scotts will soon be available from Pacific Sod. Known only as 6-72-130 St. Augustinegrass, the hybrid has been selected for its cold tolerance, aggressiveness, low growth habit and resistance to St. Augustine Decline virus.

The semi-dwarf cultivar produces a much lower and tighter turf than Floratam, the largest selling variety of St. Augustinegrass. Its aggressive lateral spread discourages encroachment by weeds. The cultivar has not shown thinning caused by diseases in turf trials conducted over the past 14 years.

Besides its resistance to St. Augustine Decline, the cultivar has not shown significant chinchbug injury. The St. Augustinegrass has shown good persistence in widely separated locations with no indication of cold injury.

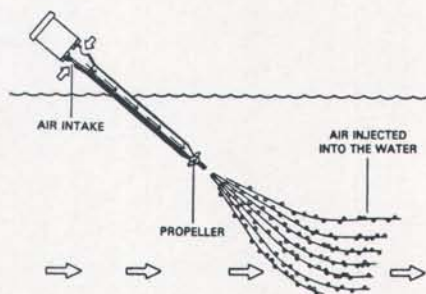
PACIFIC SOD

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LAKE AERATOR

Aeration Industries, Inc., prefers to inject atmospheric air below the surface of lakes and other bodies of water instead of propelling water into the air to mix with needed oxygen. The electric motor on the company's Air-O2, from its position above the water, drives a propeller that creates a horizontal high-velocity flow of air beneath the surface eliminating stagnant spots.

Bacteria in the water utilize the oxygen to break down organic matter without odor.



The abundance of oxygen in the water prevents blooms of algae and breaks down pollutants quickly. The aerator creates a current in the water to spread oxygen throughout the lake or irrigation reservoir.

The Air-O2 keeps injecting air into the water even after the surface has frozen over. The unit can be mounted on a float, bridge, dock or lakeside wall. The air injection housing can be adjusted to direct the flow of air into the water.

AERATION INDUSTRIES, INC.

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REACH MOWER FOR SMALL TRACTORS



A reach-type mower attachment for smaller tractors, the MP-135T from Micro-Mower, allows the sports turf manager to mow in areas only a trimmer could reach before. The unit is easily removed in minutes and allows the tractor to be used for a variety of other jobs.

The model MP-135T is available for tractors from 19 to 30 hp. It reaches 135 inches horizontally on either the left or the right side. Cutting is controlled by an electric/over hydraulic valve that is operated from the tractor seat.

Available with a choice of 52 inch or 44 inch multi-purpose finish flail cutting heads, the mower has a three-point hitch with stabilizer mounting.

MICRO MOWER

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