

HIGH-PRESSURE HEATER: Century Engineering Corp., Farm Equip. Div., Cedar Rapids, Ia.

Here's a 155,000 BTU oil-fired, high-pressure portable heater that can take the chill off an area in a hurry. It has a 12 gallon fuel capacity that provides 12 hours of continuous heating. All you do is plug the heater in and set the thermostat. A high-pressure pump moves fuel from the tank to a valve which controls flow to the cumbustion chamber. A fan puts out 325 cubic feet of heated air per minute. For more details, circle (701) on the reply card.



POST HOLE DRILL: Hoffco Inc., Richmond, Indiana

Drills for post holes, earth or other uses are part of this line of machines. There a choice of one man-two cycle, two mantwo cycle, or two man-four cycle models. Features include: heavy duty transmission fully equipped with precision ball bearing at all load points; centrifugal clutches with overriding abilities for the protection of the operators and machines; anti-weep baffles on all fuel tanks; quick release throttle controls, and more. Low tone mufflers are used on all units which exceed all current, metropolitan anti-noise requirements. There a drill available to handle augers from two inches through eight inches. For more details, circle (702) on the reply card.



SPONGE-IT: Johns-Manville, Celite Div., Denver, Colo.

Water and oil spills on streets, driveways and work area floors can be lifted quickly with this new product. It's available in powder form. Tests have shown the powder to be more effective than commercial floor sweep due to its higher absorptive capacity and dryness of oil and powder mixture, according to the manufacturer. To remove oil spill, pour produce over spot and then sweep away powder and oil mixture. Oil is absorbed by powder and effectively removed from surface. For more details, circle (703) on the reply card.



FLEX-A-MATIC 140: Hahn, Inc., Evansville, Ind.

This five-gang reel mower is now available after four years of development and testing. It cuts a swath up to 12 feet and features five 30 inch wide variable speed heavy duty reels driven by mechanical cables. Other features include: fingertip height of cut adjustment from  $\frac{1}{2}$  inch to  $\frac{3}{2}$  inches; a break-away outboard real device; and reels positioned around traction wheels to avoid running over uncut grass. Unit has a short turning radius and high flotation tires. For more details, circle (704) on the reply card.



Photo by R. H. Bailey.

This green, sixteen miles east of Palm Springs, Calif., shows Penncross creeping bentgrass doing well in 113° temperature. Photo was taken June 26, 1973. Mel Curci, golf director of Indian Wells Country Club commented on that day, "113° in the shade and growing strong." Indian Wells Country Club is one of four sponsoring courses in the Desert Classic.

#### CREEPING BENTGRASS RESEARCH

### Polycross Penncross "... the grass designed for golfers ..."

#### By W. SCOTT LAMB

THERE are many varieties of turfgrass being grown with an eye toward the golf trade. But, based on performance, none have come up to the reputation of Penncross Creeping Bentgrass.

Dr. Burt Musser and Dr. Joseph Duich, Pennsylvania State University developed the polycross bearing the Penncross name, by crossing three strains of creeping bentgrass for the express purpose of making a better bentgrass for golf greens. Their research spread through many lines of bentgrass before they developed the three-line cross with the qualities they were looking for in a putting green grass.

The parent lines developed by the researchers are kept in carefully

maintained condition in Pennsylvania State University greenhouses. From these three varieties come stolons which are planted with great care by selected seed growers in Oregon.

The stolons are field-planted in rows, with the three components planted in separate rows so there are balanced populations throughout the field. The resulting cross pollination makes the polycross (3-plant crossing) throughout the field.

The process sounds simple enough, but the requirements for growing this certified seed are very rigid. No other plantings of bent can be grown near the Penncross, nor may other varieties of bentgrass be grown in the field for a number of years.

The fields are sanitized chemically to eliminate all growth of weeds or other grasses. The rows of stolons are hand planted and constantly patrolled through the early growing season to rogue weeds and unwanted grasses that may contaminate the field after planting.

Each field is registered for certification by the grower. Certification specialists from Oregon State University inspect each field to make sure it complies with planting regulations and to verify isolation from other plants which could cross pollinate.

Harvesting is carried out with immaculately clean combines and the seed is handled by lot number which indicates the field in which it was grown. Samples from the lot are taken by Oregon State University certification specialists to the official laboratory for careful inspection and

#### testing

Oregon certification standards require 98% pure seed and 85% germination with minimum allowance for weed and crop seed. Penncross growers, through their association, have tightened these requirements even more. Putting green quality Penncross must meet the above standards plus be free of all objectionable weeds and crop seeds including Poa annua. This extra effort by the growers makes Penncross one of the purest turfgrass seeds available for putting greens.

Bentgrass seed is extremely small, with approximately 9-million seeds per pound. Since each seed produces a plant, the seeding rate for even new greens is light compared to larger turfgrass seeds sown on other areas of the golf course.

The general recommendation for seeding new greens is one to two pounds of seed per 1,000 square feet. For overseeding existing greens, one to one and a half pounds per thousand square feet is recommended. Rapid establishment of new greens is proven by letters from enthusiastic golf course superintendents who report newly seeded greens being in play from 60 to 90 days after seeding.

This bentgrass variety does receive scattered complaints from course superintendents who run into maintenance problems, such as the requirement for a tight mowing schedule. The hybrid qualities of Penncross require greater attention: brushing and verticutting are necessary to keep greens in top condition. When properly maintained, it will give that consistent texture required for true putting. The rapid growth also repairs the green from heavy traffic associated with today's courses.

The hybrid characteristics of Penncross testify to the ability of Penncross to crowd out Poa annua from greens. Where Poa is a problem, overseeding with this bentgrass on a regular program will indeed help. In fact, according to a letter from one golf course superintendent, it is the only cure he knows for ridding greens of Poa annua.

Penncross is deep rooted, a quality which must be considered in a golf green grass. This factor makes it both cold and heat tolerant. From the rigors of the Canadian and Alaska winters word comes to the Penncross Association that it came through in great shape. Conversely, golf course superintendent in а California reports an irrigation system breakdown for one week in over 100 degree weather and still the Penncross emerged with no visible harm.

The consistent demand for Penncross seed is evidence of its acceptance throughout the golf world and speaks well for this very special polycross developed by Dr. Musser and Dr. Duich. The Penncross Association has adopted the slogan, "the grass designed for golfers" and the reputation speaks well for that slogan []

#### Fertile Tiller Increase Noted By Open Field Burning

Open field burning after harvest has helped control disease and weeds and produce better yields in grass seed crops in Oregon's Willamette Valley since the practice began in the mid-1940s

How does the heat improve yield? Oregon State University crop scientists, working with red fescue, have found part of the answer. The answer is important because Willamette Valley growers, who produce 70 percent of the U.S. supply of red fescue and a large part of the world's supply of other grass seed, face a January 1975 deadline. That is when open field burning is scheduled to be banned in Oregon because of air pollution problems.

Dr. David O. Chilcote, OSU crop physiologist, recently reported on the red fescue results at the annual meeting of the American Society of Agronomy.

"The primary response to postharvest residue burning was an increase in the number of fertile tillers (panicles)," he said.

"Not surprising is that competition for sunlight in the fall is one of the keys to plant growth and yield. With field burning, the plant does not elongate, seeking the sunlight. The shorter plant has more tillers in the fall and the tillers produce more seed heads in the spring."

In tests conducted by graduate student Phillip C. Stanwood, plants in a burned area produced 16 tillers per 10 primary shoots in the fall. The rate for the unburned area was one tiller per 10 primary shoots.

"Contrary to the belief that burning causes a shock in plants which stimulates growth, we found that burning, in addition to opening up the stand of plants, also exposes the soil more, so the plant roots and shoots experience a wider range of temperature each day." Chilcote said. This may favor floral induction.

Red fescue was picked for the plot experiments because it is particularly sensitive to burning in terms of seed yield. Similar results were produced in more limited tests with tall fescue, perennial ryegrass, bentgrass and bluegrass.

The importance of sunlight was established by shading burned and unburned plots through the winter. The shade, acting much like stubble left in an unburned field, stopped seed production.

"Our evidence points to light competition as being problably the most important single factor related to crop response and post harvest burning," said Chilcote.



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insect report-

#### TURF INSECTS

#### **CINCH BUG**

(Blissus leucopterus leucopterus) MARYLAND: Several heavy infestations in turf re-ported by homeowners in Baltimore, Prince Georges, and Montgomery Counties. Commercial acreage also treated in several areas.

#### GRASSHOPPERS

KENTUCKY: Adults and nymphs of various species averaged 80 per 100 sweeps in Shelby County roadside grasses, mostly of fescue.

#### FALL ARMYWORM

(Spodoptera frugiperda) TEXAS: Increased activity noted on lawns in several south-central counties. Damaged St. Augustine lawns in Llano County. OKLAHOMA: Still heavy in lawns in Tillman County. ARKANSAS: New generation present in many pasture areas. This generation in same localized in many pasture areas. This generation in same localized area as previous generations. Still problem and required treatment to pastures in State. MISSOURI: Larvae moderate to heavy, 1-25 per square foot, on fescue, orchard grass, and brome pastures throughout south-central and southwest areas. Damage mostly in new stands. TENNESSEE: Heavy on newly sown grasses in Greene, Knox, Jefferson, Sevier, Loudon, Monroe, and Roane Counties. Treatments applied. MISSISSIPPI: Still heavy and damaging to permanent and temporary pas-tures in southern areas. KANSAS: Second in-star larvae averaged 2 per row foot in drilled 5-inch fescue in Cherokee County. Cherokee County.

#### **INSECTS OF ORNAMENTALS**

#### WHITEMARKED TUSSOCK MOTH

(Hemerocampa leucostigma) OHIO: Larvae severely defoliated group of Potentilla fruticosa (bush cinquefoil) shrubs in Pickaway County. Defoliation complete on several small sweet gum trees in Wayne County. Larvae had been heavily parasitized by 3 wasps in both areas.

#### POPLAR TENTMAKER

(Ichthyura inclusa) WEST VIRGINIA: Larvae caused 25-percent defoliation to several willow trees in Calhoun County. This is a new county record.

#### TREE INSECTS

#### NANTUCKET PINE TIP MOTH

(Rhyacionia frustrana) VIRGINIA: Widespread and more severe than usual throughout Portsmouth area.

#### YELLOWNECKED CATERPILLAR

#### (Datana ministra)

TENNESSEE: Larvae defoliated oak trees in Henry, Madison, and Shelby Counties. Populations heavy; due to BAMA: Larvae, 100+ per tree, partially defoliated numerous oak trees on lawns and along highways in Montgomery, Butler, Geneva, Crenshaw, Lee, and other counties.

#### VARIABLE OAKLEAF CATERPILLAR

(Heterocampa manteo) NORTH DAKOTA: Completely defoliated birch trees currently evident in the Killdeer Mountains in Dunn County. Very little defoliation noted in August. Some mature larvae still present. Defoliated birch trees also noted north of Grassy Butte in McKenzie County. KANSAS: Defoliated some oak trees in Sedgwick County. and caused light defoliation of oaks at Topeka, Shawnee County. Growth stages in Topeka included eggs and larvae up to half grown.

For More Details On Following Page Circle (134) On Reply Card

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## meeting dates

- Kansas State Shade Tree Conference and Kansas Arborist's Association, Student Union, Kansas State University, Manhattan, Kan., Jan. 3-4.
- Western Association of Nurserymen, trade show and 84th annual meeting, Plaza Inn, Kansas City, Mo., Jan. 6-8.
- Tennessee Turfgrass Association, annual conference, Roger Millers King of the Road Motor Inn, Nashville, Tenn., Jan. 7-8.
- Mid-Atlantic Golf Course Superintendents Association, 45th annual conference, Sheraton-Lanham Beltway Convention Center, 8500 Annapolis Road, New Carrolton, Md., Jan. 7-8.
- New England Chapter, International Shade Tree Conference, annual meeting, Highpoint Motor Inn, Chicopee, Mass., Jan. 8-9.
- Northeast Weed Science Society, annual meeting, Holiday Inn, 18th & Market St., Philadelphia, Pa., Jan. 8-10.
- Michigan State University-Michigan Pesticide Association, weed workshop, MSU campus, East Lansing, Mich., Jan. 9-10.
- New York State Arborist Association, annual convention, Raleigh Hotel, So. Fallsburg, N.Y., Jan. 13-16.
- Michigan Turfgrass Conference, 44th annual, Kellogg Center, Michigan State University, East Lansing, Mich., Jan. 15-16.
- Michigan Turfgrass Conference, 44th annual. The Kellogg Center for Continuing Education, Michigan State University, East Lansing, Mich., Jan. 15-16.
- New Hampshire Turf Seminar, Sheraton Wayfarer Motor Inn, Bedford, N.H., Jan. 17-18.
- California Weed Conference, Woodlake Inn, Sacramento, Calif., Jan. 21-23.
- University of Tennessee, Winter Short Course in Turf Management, University of Tennessee Plant Sciences Building, Knoxville, Tenn., Jan. 21-25.
- Southern Weed Science Society, Sheraton Biltmore Hotel, Atlanta, Ga., Jan. 22-24.
- Rocky Mountain Regional Turfgrass Conference, 20th annual, Colorado State University, Fort Collins, Colo., Jan. 24-25.
- Ohio Chapter, International Shade Tree Conference, annual meeting, Sheraton Columbus Hotel, Columbus, Ohio, Jan. 27-28.
- Ohio State University Short Course, 45th annual, for arborists, turf management specialists, landscape contractors, garden center operators and nurserymen, Sheraton Columbus Hotel, Columbus, Ohio, Jan. 27-31.
- Associated Landscape Contractors of America, 12th annual meeting, Hilton Palacio Del Rio, San Antonio, Tex., Jan. 28-Feb. 1.

- Penn State Turfgrass Conference, Keller Conference Center, Campus, University Park, Pa., Jan. 28-Feb. 1.
- Winter Seminar for Commercial Arborists, Illinois Commercial Arborists Association and the extension service, University of Illinois, Sheraton O'Hare, Rosemont, Ill., Jan. 29.
- Virginia Turfgrass Conference, Sheraton Motor Inn, Fredricksburg, Va., Jan. 29-30.
- Northern California Turfgrass & Environmental Landscape Exposition, 10th annual, San Mateo County Fairgrounds, San Mateo, Calif., Jan. 30-31.
- Golf and Fine Turf, Three-Day Turf Course, Rutgers University, New Brunswick, N.J., Jan. 30-Feb. 1.
- Penn-Del Chapter, International Shade Tree Conference, annual meeting, Marriott Motor Inn, Philadelphia, Pa., Jan. 31-Feb. 1.
- Nebraska Aviation Trades Association, agricultural seminar, Norfolk, Nebr., Feb. 5-8.
- Midwestern Chapter, International Shade Tree Conference, annual meeting, Stouffer's River Front Inn, St. Louis, Mo., Feb. 5-7.
- American Sod Producers Association, winter conference, Ramade Bourbon Orleans, New Orleans, La., Feb. 7-8.
- Golf Course Superintendents Association of America, 45th International Turfgrass Conference and Show, Anaheim Convention Center, Anaheim, Calif., Feb. 10-15.
- American Society of Consulting Arborists, 8th annual, International Inn, Tampa, Fla., Feb. 14-16.

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- National Arborist Association, 36th annual meeting, International Inn, Tampa, Fla., Feb. 17-21.
- Wisconsin Arborist Association, annual convention, Wausau, Wisc., Feb. 20-21. Contact Jerry Koch, city forester, Courthouse, Wausa, Wisc. for details.
- Shade Tree Disease and Insect Short Course, 17th annual, Iowa State University, Ames, Ia., Feb. 20-22. Contact Dr. A. H. Epstein, dept. of botany and plant path., Ia. State Univ. for details.
- Park, Recreation and Environment Design, National Symposium, Carleton House, Orlando, Fla., Feb. 25-28.



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SPECIAL SECTION

TURF VEHICLE CARE

#### Urban Pesticide Dealer And Applicator Clinics Dates Set

Pesticide use recommendations, as well as pesticide regulations, change from year to year and dealers and applicators are hard-pressed to keep up-to-date.

But Illinois "small package" dealers and applicators can get the latest in pest control information and recommendations at any one of 10 Urban Pesticide Dealers and Applicators Clinics, scheduled during January, at locations throughout Illinois.

The clinics are sponsored jointly by the University of Illinois cooperative extension service and the Illinois department of agriculture, division of plant industry.

The sessions at each clinic will provide information for dealers and applicators who sell or apply home, yard or garden pesticides and for custom applicators and operators who apply pesticides to non-agricultural areas, such as parks, highways, golf courses and similar areas.

Some of the scheduled session topics are: "Weed Pests in Turfgrass and Other Crop Areas;" "Calibrating Pesticide Application Equipment;" "Insect Pests of Trees, Shrubs and Lawn Areas and Their Control;" "The New Federal Environmental Pesticide Control Act;" and "Controlling Weeds On Roadsides, Ditches and Other Non-Crop Areas."

A representative of the Illinois State Department of Agriculture will administer the examinations for custom-spray applicator and oper-



ator licenses at the end of each clinic for those wishing to take the exam.

The following are dates and locations for the 1974 clinics: January 14, Rantoul, Redwood Inn; January 15, Peoria, Heritage House, Rt. 88 North; January 16, Springfield, Heritage House, Rt. 66 South; January 17, Belleville, Augustines, Rt. 460 & Rt. 158; January 18, Marion, Holiday Inn, I-57 & Rt. 13; January 21, LaSalle-Peru, Holiday Inn, I-80 & Rt. 51; January 22, Rockford, Howard Johnson, Rt. 51 South; January 23, Rock Island-Davenport, Holiday Inn, Davenport, Iowa; January 24, Des Plaines, Seven Eagles Restaurant; January 25, Joliet, Holiday Inn—South.

Because of the anticipated large enrollment, advance registration is required for the clinics at Des Plaines and Rock Island-Davenport. Dealers and applicators who plan to attend the clinic at Des Plaines should contact James Fizzell, Cook County associate extension adviser, Room 3, 622 Graceland Avenue, Des Plaines, Illinois 60016. Those planning to attend the Rock Island-Davenport meeting should contact J. E. Kenney, Rock Island extension adviser, 1188 Coaltown Road, East Moline, Illinois 61244.

### New England Chapter, ISTC Plans 10th Anniversary

The New England Chapter, International Shade Tree Conference, will hold their 10th annual meeting at the High Point Motor Inn, Chicopee, Mass. Jan. 8-9.

According to Erik H. Haupt, president, this year's meeting will feature an in-depth look at disease and insect control of shade trees, as well as a presentation on tree wounds.

Dr. Francis Holmes will discuss Benlate benomyl fungicide as it relates to Dutch Elm Disease. Professor Clifford Chater will present a forecast for 1974 about insect pest infestations. Dr. Alex Shigo of the Northeastern Forest Experiment Station will review some of the work being done on tree wounds.

The New England Chapter annual business meeting will commemorate the 10th anniversary of the chapter. Dinner speaker at the annual banquet will be John Hansel, director, Elm Research Institute and the Harvard Elm Project.

On the second day, Prof. Gordon King, chairman, ANSI Z133 committee will discuss new regulations for tree care companies.



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Trimec Turf Herbicides will control more weed species per dollar. Controls even tough, hard-to-kill weeds. Trimec Turf Herbicides mix readily in all kinds of water, are easy to use, effective and economical.



#### **WSSA Meeting Scheduled** For Las Vegas Feb. 12-14

A varied, informative program and all the entertainment the "Convention Capital of the World" can offer are both set to welcome those attending the annual meeting of the Weed Science Society of America.

The meeting is set for Las Vegas' famous Caesar's Palace on February 12-14

A special feature of this year's session will be the initial meeting of the new Turf and Ornamentals Section of the Society. A program organized by Chairman Al Turgeon will be presented.

The meeting this year promises to be of value to a wider audience than ever - including researchers, extension personnel, and agri-businessmen. Special emphasis panels featuring outstanding speakers have been set up to provide information for these groups with a need for a particular kind of knowledge about the industry and science of weed control.

Featured speakers will include Dr. Hans Gysin of Ciba-Geigy Corporation, Basle, Switzerland, who will speak on international weed control



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Detroit, Mich. 48202 Phone (Area 313) 873-7300 problems; Dr. James R. Hay of the Regina Saskatchewan Research Station speaking on "Gains to the Grower from Weed Science"; Dr. W. A. Harvey, University of California, on challenges ahead in weed science

Keynote speaker is Secretary of Agriculture Earl L. Butz.

Panels will discuss the state of integrated pest management, biological control of weeds, and pesticide safety. R. C. Ferguson, executive secretary of the National Agricultural Marketing Association, will also be a speaker during Wednesday's industry session.

Rounding off the meeting are other presentations on aquatic weed control, teaching and extension work, as well as a full program featuring some 60 papers on physiology.

In all, more than 500 papers by 250 different authors will be presented.

This year's session will be open to more interested persons than ever before through a new associate WSSA membership now available. The new classification is designed for anyone interested in weed science - chemical dealers or distributors, custom applicators, grounds maintenance managers, agri-fieldmen, regulatory

classifieds

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officials, extension agents, farm managers and others. Dues for the associate membership are \$10.

#### -Advertiser's Index-

Abbott Laboratories	7
Adelphi Kentucky Bluegrass	
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Berkeley Pump	K1
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Certa–Flex Charles Machine Works	
Consulting Agronomists	
Dow Chemical Co	
Excel Industries Inc	2nd
Excel Industries, Inc	ctory
Fanno Saw Works	C1
FMC Corp., Agric. Chemical Div.	11
FMC Corp., JoJhn Bean Div.	20
G & H Products, Inc.	77
Gordon Corp.	
Great Lakes Biochemical	
Hancor, Inc.	
Clifford B. Hanay & Son, Inc.	KK
Hercules, Inc.	
H. D. Hudson Mfg., Inc.	87
Hypro, Inc.	
International Spike Inc	

Jacklin Seed Co
Jenkins Equipment Co
Kinco Mfg
Lifetime Career Schools, Inc
Liqui-Green
Lofts Pedigreed Seed, Inc4th cover
Lumenite Electronic Co
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National Mower Co 6
Pennfine Perennial Ryegrass
Rainbird Sprinkling Mfg. Corp3rd cover
Reach-All YY
Roxy-Bonner, Inc. 93
Roxy-Bonner, Inc. 93 Ryan Turf Equipment EE
Roxy-Bonner, Inc. 93
Roxy-Bonner, Inc. 93 Ryan Turf Equipment EE
Roxy-Bonner, Inc. 93   Ryan Turf Equipment EE   Safety Test & Equipment Co. 89
Roxy-Bonner, Inc. 93   Ryan Turf Equipment EE   Safety Test & Equipment Co. 89   Spraying Systems Co. MM
Roxy-Bonner, Inc.93Ryan Turf EquipmentEESafety Test & Equipment Co.89Spraying Systems Co.MMStandard Mfg. Co.2nd coverStanford Seed Company93Swift Chemical Co.95
Roxy-Bonner, Inc. 93   Ryan Turf Equipment EE   Safety Test & Equipment Co. 89   Spraying Systems Co. MM   Standard Mfg. Co. 2nd cover   Stanford Seed Company 93
Roxy-Bonner, Inc.93Ryan Turf EquipmentEESafety Test & Equipment Co.89Spraying Systems Co.MMStandard Mfg. Co.2nd coverStanford Seed Company93Swift Chemical Co.95
Roxy-Bonner, Inc.93Ryan Turf EquipmentEESafety Test & Equipment Co.89Spraying Systems Co.MMStandard Mfg. Co.2nd coverStanford Seed Company93Swift Chemical Co.95Tee-2-Green Corp.5
Roxy-Bonner, Inc.93Ryan Turf EquipmentEESafety Test & Equipment Co.89Spraying Systems Co.MMStandard Mfg. Co.2nd coverStanford Seed Company93Swift Chemical Co.95Tee-2-Green Corp.5The Toro CompanyQQ-RR
Roxy-Bonner, Inc.93Ryan Turf EquipmentEESafety Test & Equipment Co.89Spraying Systems Co.MMStandard Mfg. Co.2nd coverStanford Seed Company93Swift Chemical Co.95Tee-2-Green Corp.5The Toro CompanyQQ-RRVelsicol Chemical Corp.27
Roxy-Bonner, Inc.93Ryan Turf EquipmentEESafety Test & Equipment Co.89Spraying Systems Co.MMStandard Mfg. Co.2nd coverStanford Seed Company93Swift Chemical Co.95Tee-2-Green Corp.5The Toro CompanyQQ-RRVelsicol Chemical Corp.27Vermeer Mfg. Co.30