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LANDSCAPE MANAGEMENT

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- ◆ State of the Golf Course Maintenance Industry
- ◆ LM Reports: Utility Vehicles

MARCH

- ◆ Equipment Mortality
- ◆ Minimizing Nitrate Runoff

APRIL

- ◆ Lessons Learned from the Weather
- ◆ Compost vs. Topsoil

MAY

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- ◆ Sharpening Mower Blades

JUNE

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- ◆ Thatch Control

JULY

- ◆ Image-Building, Lesson 2
- ◆ Pruning Basics

AUGUST

- ◆ Seed Availability Report
- ◆ Using Wood in the Landscape

SEPTEMBER

- ◆ Easy-to-Use Control Products
- ◆ Employee Relations

OCTOBER

- ◆ State of the Athletic Turf Industry
- ◆ Principles of Soil

NOVEMBER

- ◆ State of the Lawn Care Industry
- ◆ What's New in Two-Cycle Equipment

DECEMBER

- ◆ Buyer's Guide and Desk Companion

JOB TALK

Retirement community landscaping a challenge

■ Coordinating the landscape management of a facility as large as John Knox Village in Lee's Summit, Mo., is a task similar to being responsible for a small city—and the lawn care of each residence. As America's largest retirement community, John Knox Village is home to more than 2,000 retirees. The 400-acre complex includes houses, duplexes, garden-type cottages, and large continuing-care facilities and recreational facilities.

There's even a bowling alley, three restaurants and a nine hole golf course.

When planning for year-round maintenance, Warren Brown, vehicles and grounds manager, must consider many variables.

"John Knox Village is a beautiful environment for retirees," says Brown. "It has more than a thousand trees, hundreds of acres of grass and dozens of flower gardens and shrubbery areas."

In addition to the golf course, Brown and his crew manage the landscape at Lee's Summit Hospital and several private soccer fields adjacent to John Knox Village.

Residents who live in the cottages and duplexes individualize their fenced-in outdoor areas with bird feeders and bird baths, for example.

This not only makes the tenants live more comfortably; it also prevents a maintenance challenge to Brown and his crew.

"By the nature of the facility's philosophy and design," says Brown, "we must mow in a lot of very tight areas with numerous obstacles. And with the number of trees and intricate flower beds and shrubbery we have, open areas are equally challenging."

"Northern Missouri has four very specific seasons," says Brown. Our maintenance program—by necessity—must be prepared for all seasons and all weather conditions. In fact, it affects the equipment we choose as well as the timing of our fertilizer and weed program."

The first fertilizer and pre-emergent weed control application takes place in late March. This preliminary application utilizes a combination product that both fertilizes and fights crabgrass at once. The second application of fertilizer and weed control takes place seven weeks later, and includes an herbicide that is designed for late summer weeds. Both applications use a measuring standard of $\frac{3}{4}$ lb. per 1000 sq. ft. of turf. Broadleaf weed control products are applied in April, May and late July.

Fertilizer is also applied in September and early November. These late-season applications use a combination of nitrogen, phosphorus and potassium in a ratio of 10-3-6 at a rate of 1 lb. per 1000 sq. ft. of turf.

"We used to have different equipment for every season," says



Many obstacles in the landscape at John Knox Village require zero-radius maneuverability from mowers.

Brown. "Today, we use nine, 21-hp diesel Grasshopper zero-radius front mowers that allow us to mix and match cutting decks and attachments for year-round versatility."

According to Brown, zero-radius maneuverability has reduced the hours required for virtually all maintenance operations—from mowing, trimming and weeding to leaf pick-up and snow removal.

To collect clippings, five of the nine Grasshopper mowers carry a Quick-D-Tatch Vac grasscatching system and 25-cubic foot Trail Hopper collectors. The large collection systems make it more convenient to catch clippings, according to Brown, because clippings are not emptied as often.

The grasscatching systems are also used often in the fall, to collect leaves from the facility's thousand-plus trees. Crews also use the grasscatching system's powerful vacuum action for fall dethatching. The Wand Vac, a hand-held vacuum device that attaches to the Grasshopper Quic-D-Tatch Vac is used to pick up the shrub clippings during the three-week long job of trimming the shrubbery around the complex.

In the winter, cab enclosures are attached, along with the snow blades and snowthrowers.

"We use the dozer blades for light snows and when we get more than three inches, says Brown. "The snowthrowers can clear up to 12 inches of snow very efficiently."

Randy Wright is the lead mechanic. With so much equipment, repair and service time must be kept to a minimum.

"A side benefit of year-round versatility has been to simplify our equipment maintenance by eliminating the need for a lot of different machines for different jobs," says Wright. "That means our parts inventory is reduced significantly, too."

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HOT TOPICS

Biological pesticide market to hit \$150 million by 1997

CLEVELAND—The biological pesticide market is expected to reach \$150 million by 1997, according to a business research group here.

Demand for pesticide active ingredients is expected to increase 4.7 percent per year until 1997, when it will total nearly \$4 billion, the study says.

The Freedonia Group, Inc. says the increase in demand will be balanced against more specialized formulation used in lower quantities. The volume will be slightly higher than 1992 levels of nearly 1.1 billion pounds.

The Freedonia Group's study, "Pesticides in the U.S. to 1997," says consumption of conventional pesticides is expected to expand 4.5 percent per year through 1997. These products depend a lot on the agricultural sector, and demand hinges on specific factors such as climate and insect population, among other causes.

Herbicides, insecticides and fungicides account for more than 90 percent of all pesticide use.

Biological pesticides currently account for a very small portion of the pesticide market. Rapid growth is expected as new products are developed and marketed, says industry analyst Luci Young. Adding to the increase is the growing interest and research by conventional pesticide manufacturers in alternatives to chemical-based

World Pesticide Consumption (billion US dollars)



Source: Study #636, The Freedonia Group, Inc. (Cleveland, Ohio).

control products.

Agriculture use accounts for more than 70 percent of all pesticides. Demand in agriculture is influenced by climate, number of acres planted, number of acres harvested and the crop mix. Young says corn, soybeans and cotton require the most pesticide care.

The study says commercial pesticide applications by professional pest control and lawn care companies will see growth based on stimulation from the penetration of biopesticide products—which the study call “safer” than chemical controls—and by a stronger economy which will allow consumers and businesses to purchase these services.

Growth in consumer pesticide demand will be based on improved, higher cost for-

mulations and increased usage fostered by the popularity of do-it-yourself lawn and garden care.

Biological pest control products have been received with both support and skepticism.

The major drawback to biological products has been their high cost and low efficacy relative to synthetic pesticides, making repeat applications necessary. Products degrade quickly, are sensitive to adverse soil pH factors, and are easily affected by moisture and temperature.

From an environmental point of view, genetically engineered products have yet to be declared completely safe. To overcome these misperceptions, some companies are creating products based upon genetically-engineered bacteria which are killed before inclusion into the finished product. Although dead, the microorganisms retain internally-generated poisons that are fatal to target pests.

Safety questions still prevent widespread use of biopesticides. The Freedonia report says live bacterial, viral and fungal-based pesticides will not be cleared for widespread use until the late 1990s. Products which use dead microorganisms will continue to be marketed.

—Terry McIver

ELSEWHERE

N.A.A. mini-survey on IPM programs, page 45

Two turfmen pass away, page 45

Environmental relations kits, page 46

NAA mini-survey shows interest in IPM programs

AMHERST, N.H.—Seventy-seven percent of respondents to a National Arborist Association Mini-Survey said they follow Plant Health Care or Integrated Pest Management techniques.

Those programs have been available to customers for an average of 6.8 years.

Horticultural oils were ranked the control product of choice, with Tempo larvicide ranked second and insecticidal soaps ranked third.

Sixty-one percent of those who said they have PHC/IPM programs said their customers are more concerned with products used on their properties than before.

But despite the shift in control programs, 61 percent said they have seen a decline in the number of effective pesticide products labeled for control of pests on ornamental plants.

Survey results

Do you have a PHC/IPM program?

Yes77%
No13%

How long has it been available? 6.8 years

Rate the success of your current program from 1.0 to 5.0, with 1.0 being very successful.2.4

Did you have a pest management program in place prior to the current program?

Yes68%
No32%

Why did you change to Plant Health Care? Rank responses from 1.0 to 5.0, with 1.0 being the most important reason:

Greater safety2.0
Environment2.0
More effective2.0
Regulations2.0
Public demand0.3
Cost0.3

List the five most commonly used pesticide products in your current program:

#1:Horticultural/dormant oils
#2:Tempo (Temephos) larvicide
#3:Insecticidal soaps
#4:Orthene (acephate) insecticide
#5:Sevin (carbaryl) insecticide

Is posting required in your community?

At time of application43%
Not required44%
Required before application9%
Don't know8%

Source: National Arborist Association

Base: 56

HOT STUFF

GIE elects new officers

MARIETTA, Ga.—David Luse of Arteka Natural Green in Eden Prairie, Minn. is new president of the Green Industry Expo, taking over from Davey Tree Expert's George Gaumer. Lou Wierichs Jr. of Pro-X Systems in Appleton, Wis. is new vice president of the GIE and E. Earl Wilson of Thornton-Wilson in Loveland, Ohio, is new secretary/treasurer. New board member Gary Trinetti of Garick Corp., Cleveland, replaces Gaumer. Trinetti represents the Professional Grounds Management Society.

EPA studying three herbicides

WASHINGTON—The Environmental Protection Agency will study the effects of atrazine, simazine and cyanazine on drinking water. Ciba, which supplies pesticides to the turf-grass market, makes atrazine and simazine, both Class C carcinogens, the third most dangerous of five classes. A spokesperson for Ciba says that the company welcomes the study.

RISE defines IPM

WASHINGTON—Integrated Pest Management should "manage pests and the environment to balance benefits of control, costs, public health and environmental quality," according to Responsible Industry for a Sound Environment (RISE). The organization—which represents manufacturers, formulators and distributors of specialty pesticides—defined IPM as a recent meeting of its Governing Board.

"Our members felt that their association should go on record with a definition of IPM based on the growing use of such systems, and to help eliminate confusion as to what IPM really means," says RISE executive director Allen James.

Metasystox-R to remain on market

YUMA, Ariz.—Metasystox-R, a systemic insecticide used on aphids, mites, leafhoppers and other sucking pests in fruit and field crops, is remaining on the market. Gowan Company signed agreements with Miles and the Environmental Protection Agency allowing it to distribute the product, which was first registered in the U.S. in 1961.

Power equipment sells

ALEXANDRIA, Va.—All categories of outdoor power equipment, except rear engine riders and tillers, are expected to show increased shipments in 1995, according to the Outdoor Power Equipment Institute (OPEI).

The organization, however, revised its predicted growth rate down to 2.3 percent for 1995 "due to recent increases in mortgage interest rates which are expected to lead to a decline in sales of new and existing homes." Growth of 1.9 percent is expected in 1996.

Super offers video training

WEST BEND, Wis.—Eight training videos are available from renowned golf course superintendent Paul Latshaw for \$69.95 each. Titles are: "The Knowledgeable Operator" (riding equipment); "Turf Etiquette" (for golfers and crews); "Bringing Out the Best in the People You Manage;" "Turf Restoration and Renovation;" "Training the Trainer;" "Golf Car Fleet Management;" and "Greens Mowing Tips and Orientation."

For more information, phone Epic of Wisconsin at (800) 938-4330.

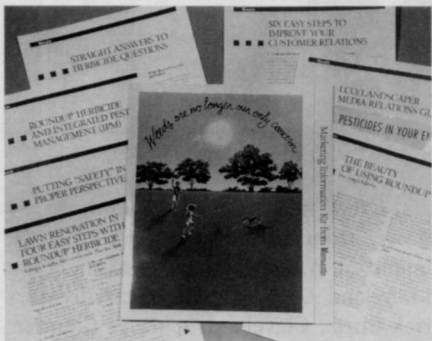
Obituaries...

SALEM, Ore.—R.H. "Dick" Bailey, owner of Bailey Seeds, died of cancer at his home here Nov. 29, 1994. He was 64. Earlier in his career, Bailey worked for Dickinson Seed, co-founded Turf-Seed with Bill Rose and managed Jacklin Seed Co. He is survived by his wife Shirley, son Rich Jr., two brothers, a sister and two step-daughters.

PHOENIX—Golf course architect Milt Coggins died Nov. 4, 1994 at the age of 92. Coggins designed 29 courses in Arizona, California, Texas and Florida, including Prescott (Ariz.) Country Club. He is survived by his wife Tate D., sons Milt Jr. and Lewis, three grandchildren and one great-grandchild.

GREEN INDUSTRY EVENTS

What's going on in the industry



Environmental relations kit sells and informs

ST. LOUIS—Monsanto Company now offers a free environmental relations primer to help lawn care operators and landscapers describe the environmental aspect of pesticides.

"Weeds Are No Longer Your Only Concern" contains information on Roundup herbicide, including the new Roundup Dry Pak, plus non-commercial information to help managers portray the industry to the public more accurately.

The kit includes pass-along information to be given to customers and information for management and employees. A "Q&A" sheet covers the environmental aspects of herbicide use, lawn renovations, environmental and public safety data sheets, information on integrated pest management and tips on selling services which include the use of Roundup.

Corrections

✍ A four-wheel-drive Swinger articulated loader was incorrectly identified as a Thomas skid steer loader in our November issue. We apologize for the error.

The Swinger line is actually manufactured by Northwestern Motor of Eau Claire, Wisc. It includes three loaders with SAE lift capacities from 2,400 to 1,200 lbs. Lift height at the pin is up to 10 feet.

Swingers feature easy operating hydrostatic drive to the drop box and easy-to-maintain mechanical drivelines and axles.

For more information on Swinger loaders, contact Larry Blanshan, Swinger Division, Northwestern Motor, 1125 Starr Ave., Eau Claire, WI 54703; phone (715) 835-3151.

✍ Also, 1993 PLCAA President Lou Wierichs of Pro-X Systems, Appleton, Wis., claims he was the first person to complete the Certified Turfgrass Professional program and earn the CTP designation early this past summer. By summer's end more than a dozen turf pros had passed the course.

FEBRUARY

1-2: New York Turf and Grounds Expo II, Holiday Inn, Suffern, N.Y. Phone: (518) 783-1229.

2: NorCal Spring Trade Show, San Mateo County (Calif.) Expo Center. Phone: Margo Jonsson, (916) 961-6814.

2-4: Landscape Design Short Course, Sheraton Inn, Pittsburgh North. Phone: Michael Masiuk, (412) 392-8540.

3-5: The Management Clinic, Galt House East, Louisville, Ky. Phone: American Association of Nurserymen, (202) 789-2900.

4-8: Sports Turf Managers Assn. National Conference & Exhibition, Pirate City, Bradenton, Fla. Phone: STMA, (312) 644-6610.

5-7: Fertilizer Institute Annual Meeting, Marriott's Orlando (Fla.) World Center. Phone: TFI, (202) 675-8250.

6-7: International Society of Arboriculture Shade Tree Symposium, Lancaster (Pa.) Host Resort. Phone: Elizabeth Wertz, (215) 795-2096.

6-8: Landscape Design Short Course, Warrendale, Pa. Phone: Michael Masiuk, (412) 392-8540.

7: Target Specialty Products Annual Seminar and Exhibit, Mesa, Ariz. Phone: Target, (310) 802-2238.

7: Michigan Arborist Association Insect Practical Applicator Training, Southfield (Mich.) Civic Center. Phone: MAA, (810) 391-0030.

7-8: Southern Illinois Grounds Maintenance School, Gateway Convention Center, Collinsville, Ill. Phone: Ronald E. Cornwell, (618) 692-9434.

7-9: Pro Green Expo, Colorado Convention Center, Denver. Phone: (303) 756-7282.

8-9: Landscape Industry Show, Long Beach (Calif.) Convention Center. Phone: (916) 448-2522.

8-9: Garden State Nursery & Landscape Conference, Somerset, N.J. Phone: New Jersey Nursery & Landscape Assn., (609) 291-7070.

8-10: Turfgrass Producers International Midwinter Conference, Walt Disney World Village, Orlando. Phone: TPI, (708) 705-9898.

9: Northeastern Pennsylvania Turfgrass and Grounds Maintenance School,

Mountain Laurel Resort, White Haven, Pa. Phone: Andrew McNitt, (814) 863-1368.

9-10: Target Specialty Products Annual Seminar and Exhibit, Anaheim, Calif. Phone: Target, (310) 802-2238.

9-10: Inland Northwest Turf, Tree & Landscape Conference, Spokane, Wash. Phone: (509) 335-3530.

13-15: Pennsylvania Nurserymen & Allied Industries Conference, Hershey (Pa.) Lodge. Phone: (717) 238-1673.

14-15: Target Specialty Products Annual Seminar and Exhibit, San Ramon, Calif. Phone: Target, (310) 802-2238.

14-16: Landscape Contractors Assn. Winter Workshop, Holiday Inn Crowne Plaza, Rockville, Md. Phone: LCA, (301) 948-0810.

14-18: National Arborist Association Annual Meeting, Walt Disney World Village, Orlando, Fla. Phone: NAA, (800) 733-2622.

15-17: Athletic Field Construction and Maintenance, Cook College, Rutgers University. Phone: (908) 932-9271.

17: Environmentally Conscientious Turfgrass Maintenance Seminar, Lakewood (Ohio) City Park. Phone: Jack Kerrigan, (216) 631-1890.

17: Target Specialty Products Annual Seminar and Exhibit, Visalia, Calif. Phone: Target, (310) 802-2238.

17-18: Masters in Landscape Management, Chicago. Phone: Associated Landscape Contractors of America, (703) 620-6363.

20-27: Golf Course Superintendents Association of America's International Conference and Show, San Francisco. Phone: (913) 841-2240.

25: Long Island Tree Conference. Phone: (516) 225-1569.

25-27: Wisconsin Landscape Federation Winter Convention, Paper Valley Hotel, Appleton, Wisc. Phone: Kari Foster, (414) 529-4705.

27-28: Professional Lawn Care Association of America Day on the Hill, Washington, D.C. Phone: PLCAA (404) 977-5222.

28-March 3: International Erosion Control Assn. Conference, Westin Peachtree Plaza Hotel, Atlanta. Phone: IECA, (303) 879-3010.

ANOTHER GRASSHOPPERABILITY FEATURE



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New Dethatcher ... plus Sunshade

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SELECTABILITY

WILL CHANGE YOUR MIND ABOUT WHAT A MOWER CAN DO.

When it comes to mowing, Grasshopper zero-radius outrfront mowers make all the moves you need for unparalleled *maneuverability*, *reachability* and *timesaving trimability*. But now, unequalled *selectability* lets your mower handle more grounds maintenance jobs with the same machine.

The new Quik-D-Tatch[®] Combo Mulching Deck lets you convert in minutes from mulching to side discharge or vacuum collection using the same 44", 48", 52" and 61" deck. A 72" Combo Deck also

converts from mulching to side discharge.

Choose your power from nine engine models, 12.5 to 28 hp, gas or diesel, air-cooled or liquid-cooled. Add a Quik-D-Tatch Vac[®] grasscatching system or other Quik-A-Tatchments[™] you need for year-round grounds maintenance jobs, including the new dethatcher and bed shaper. A new Quik-D-Tatch[®] mounting system lets you remove decks and add attachments in minutes without tools.



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Circle No. 109 on Reader Inquiry Card

PRODUCT REVIEW

Control products: expanded labels, new formulations

Pendulum herbicide from American Cyanamid is now available for use on turf.

Pendulum provides broad spectrum pre-emergence control against most grassy and broadleaf weeds, including crabgrass, goosegrass, oxalis and spurge. The product is labeled for use on a wide variety of cool- and warm-season turf.

The active ingredient in Pendulum is pendimethalin, the most widely-used pre-emergence turf herbicide.

Pendulum provides over-the-top control of 45 weeds in more than 260 labeled ornamentals, which the company believes makes it an excellent choice for total turfgrass and landscape management. Pendulum WDG is available in 10 lb. jugs and 1.2 oz. premeasured water-soluble bags. Pendulum 3.3 EC is packaged in 2½ gallon containers.

Circle No. 191 on Reader Inquiry Card

Ciba Turf & Ornamental Products has received EPA registration for Primo WSB, a wettable powder formulation of Primo, packaged in water-soluble bags.

Primo WSB may be used to regulate turf growth in a variety of settings, including golf courses, residential and commercial lawns, sod farms, sports fields, cemeteries and similar areas. The new Primo WSB is labeled for use on golf course greens.

The company believes the new formulation offers the benefits of a "closed system," with reduced potential for exposure to the user and environment during mixing.

Circle No. 192 on Reader Inquiry Card



New Daconil Ultrex fungicide, from ISK Biosciences, is an advanced "spray-dry" formulation that mixes faster and remains suspended for longer than convention dry granular products, according to the company.

ISK Bioscience says Daconil Ultrex also offers a high concentration of chlorothalonil—82.5 percent—to provide improved control of brown patch. The product is guaranteed to stick and stay on foliage. Daconil Ultrex is labeled for control of 14 other diseases of warm- and cool-season turf, including dollar spot, leaf spot, snow mold, and the pathogens that cause algal scum.

Daconil Ultrex controls 55 diseases on 78 species of broadleaf shrubs and trees, foliage plants, flowering plants, bulbs and conifers.

Circle No. 193 on Reader Inquiry Card

Sprayer eliminates rinsate, residuals

The Doscart is a new product applicator which uses direct injection to a spray boom or low pressure pistol-type sprayer. The manufacturer is Canaan Industries, Inc., of Dothan, Ala.

The company says the Doscart eliminates residuals. When a chemical is not requested, you can download it and keep it warehoused until needed.

The Doscart eliminates premixing with water, and there is no need to rinse the container between injections of different control products.

If a leak or spill occurs while transferring a chemical between the individual containers, it stays inside the secondary containment chamber, and will not be released to the outside, the company maintains.

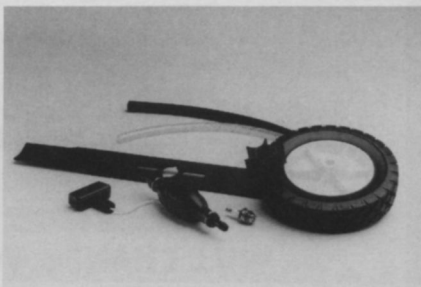


The Doscart has acquired approval from the Environmental Protection Agency.

Circle No. 194 on Reader Inquiry Card

Parts supplier initiates distributor-friendly policy

Prime Line has a new power equipment wholesale distribution program which sells through key distributors to



power equipment servicing dealers, technicians and retail outlets in the U.S.

The program includes comprehensive warranties and a labor claim policy on all Prime Line products.

A total obsolescence protection policy ensures that distributors and their green industry customers are fully protected from outdated or slower-moving inventory costs.

An extensive distributor cost-control policy includes pre-paid freight, stock adjustment programs, generous spring

PRODUCT REVIEW

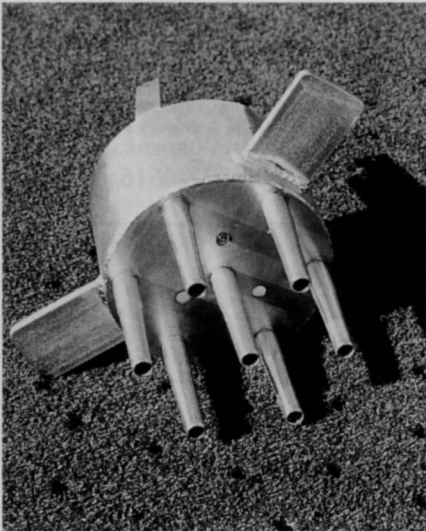
dating terms and early pay discounting.

Special opening order requirements are designed to help distributors keep the fewest possible dollars committed to the Prime Line inventory.

Circle No. 195 on Reader Inquiry Card

Aerifier can be used for variety of turf repairs

The Handi-Aerifier from Miltona can be used to aerify small areas for better water infiltration, lower a sharp crown on a green or eliminate high spots during turf



repairs.

The 7/8-inch hollow tines penetrate turf down to four inches deep.

Plugs are collected in the upper cylinder, saving clean-up time.

When attached to a cup cutter handle, the lever ejection mechanism lifts the tines from turf without pulling or tearing.

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Clean sand areas of debris, aerate at the same time

Nolte introduces a new way to clean debris from sand. The BC-1000 is powered by a Honda 5.5 hp engine.

It will remove all debris from .3mm to 2-inch size stones, and aerate the sand to increase microbial action which helps to extend the life of the sand.

The product is also available in a tractor tow model. The Nolte units are distributed by Pifer, Inc., Jupiter, Fla.

Circle No. 197 on Reader Inquiry Card

Golf car has extra body protection

The Ultima golf car from Yamaha USA features the new Sentry Body Protection System, which consists of wrap-around bumpers.

The 5-mph bumpers are on the front and back of every car. These bumpers are blow-molded and can withstand impacts of up to 5 mph without damaging the body or fram.

Every Ultima features vinyl-covered side sills, made of a durable heavy-gauge material, to help guard against damage on the sides of the car.

To minimize spike damage to the car's body, Yamaha added a heavy-duty rubber trim on top of the Ultima's front cowl.

The worm gear and pitman pin steering is another advantage of the Ultima. The steering system acts as power steering to make turning easier.

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Repel birds with non-phytotoxic products

PMC Specialties Group, Inc. has received EPA approval for its Re-JeX-iT products to repel birds from turf and ornamental areas.

The Re-JeX-iT product represents a long-needed, logical alternative to poisons or firearms.

The product is clear blue in color, and is activated by a natural flavor additive which the FDA says is "generally recognized as safe."

Food sources treated with the product are unpalatable to all species of birds and thus control birds around landfills, standing water, parks and golf courses.

Re-JeX-iT is available in the following mixtures:

- as a liquid for use on standing water at locations such as landfills, industrial impoundments and tailing ponds.
- a solid, for use on landfills, often in combination with landfill cover materials;
- as a specially formulated, non-phytotoxic product for use on turf and ornamentals.

Reapplication may be necessary in three to four weeks.

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Recycled product stops weeds, grass along fences

Weed Stopper is a rubber compound used to prevent weeds and grass from growing along and between fences.

The environmentally safe compound is made from recycled tires and post-consumer plastics, and is guaranteed to last for 20 years, according to the manufacturer, Rubber, Plastic & Specialty Co.

The company says Weed Stopper is easy to install, and is kept in place with steel spikes.

Circle No. 200 on Reader Inquiry Card

Fertilizer now available in 24-4-12 formulation

Vicksburg Chemical Company has developed 24-4-12 K-Power Blend Fertilizer with controlled-released nutrients for use on fairways. This product provides 50 percent controlled-released potassium and 32 percent controlled-released nitrogen from polymer-coated potassium nitrate. K-Power fertilizers are the first potassium nitrate-based fertilizers in coated, controlled-release forms, according to Vicksburg.

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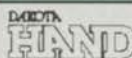
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