

THE GENTLE GIANTS

Here are E-Z-GO's hard workers in three- or four-wheel, gas or electric models.

With durable, diamond-plated steel Polane-coated panels and load beds, including options such as sprayers, aerators, spreaders, top dressers, and more. Each one tough but easy on turf.

The GXT-7

Here's the heavy-duty workhorse in the line. Powered by an 18 H.P. engine for payloads of up to 1500 pounds. For golf course or public grounds, its large load bed has sides and tailgate. Options include a hydraulic dump, PTO, and range changer. The GXT-7 adapts to many accessories: sprayers, spreaders, top dressers, and aerators to handle any job.

The GXT-800

Reliable, economical, this mid-size hauler more than pulls its own weight. It has a two-cycle, 244cc engine with rack and pinion steering, heavy-duty springs, and hydraulic shocks, plus a whopping 1000-pound load capacity. Options and accessories such as cabs, bed covers and loading ramps make it an ideal all-around utility vehicle.

The XT-500

All brains and brawn. 1000-pound capacity, mid-size, powered by a 36-volt high efficiency electric motor. Perfect for hospitals and campuses, wherever quiet efficiency is as important as durability.



The GXT-300

This tough gas-powered three-wheel vehicle is perfect for light to medium-sized loads. A two-cycle, oil injected, 244cc engine keeps it running efficiently. It has a 1000-pound capacity, and is engineered especially for easy maneuverability.



The XT-300

This is a reliable three-wheel electric answer for a wide variety of jobs where maneuverability is critical. It provides a payload capability of up to 1000 pounds in its roomy 5.7-cubic foot, diamond-plated load bed.



The PC4GX

E-Z-GO's gas-powered, 4-passenger personnel carrier is your best bet for moving staff and clients around resorts, hotels and worksites quickly, efficiently, and economically. Headlights, taillights, brake lights, horn, oil-injected engine are only a few of the standards.



The PC4X

Where quiet is key, our efficient electric-powered personnel carrier is the answer, complete with an onboard charger, retractable AC cord and stainless steel battery racks.

For your resort, campus, office park or other maintenance needs, go durable, dependable E-Z-GO. The most advanced, most versatile line of utility vehicles in the world.



EZGO TEXTRON

If you'd like more information on the complete line of E-Z-GO Turf Vehicles, fill out this coupon and mail to: Turf Products Mgr, E-Z-GO, P.O. Box 388, Marvin Griffin Road, Augusta, Georgia 30913-2699.

Name _____ Title _____

Company _____

Address _____

City _____ State _____ Zip _____

Phone _____

Once a year is all it takes to keep over 50 types of weeds long gone.

Apply Surflan preemergence herbicide early in the season and forget about spending extra time and money to get late-season weed breakthroughs. All you see is bare ground—all season long.

Surflan won't harm nearby landscaped areas and works with little or no lateral movement. You can use Surflan alone in your preemergence program, or you can tank-mix

it with a postemergence herbicide to knock weeds down and keep them down all season long.

Ask for Surflan—now in quarts and gallons—from your Elanco distributor, or write:

Elanco Products Company
A Division of Eli Lilly and Company
Dept. E-455, Indianapolis, IN 46285, U.S.A.
Surflan®—(oryzalin, Elanco Products Company)



Circle No. 117 on Reader Inquiry Card

With Surflan[®], the weeds are gone all season long.



WEEDS TREES & TURF

The Magazine of Landscape and Golf Course Management Since 1962



36



49



54

22 COVER STORY: ONE OF A KIND

Unlike its south Florida neighbors, Jupiter Hills Golf Club has the turf and trees of a northern course.

26 MILES TO GO . . .

Rights-of-way landscape managers do things on a big-big scale, according to a recent survey by WEEDS TREES & TURF.

30 UNDER CONSTRUCTION

Growth in the booming Valley of the Sun presents a challenge to the Arizona Dept. of Transportation's Highway Division.

36 WEED ERADICATION

In sunny San Bernardino, Calif., bare ground next to the roadside is the aim of county agricultural workers.

40 PGRs FOR HIGHWAY TURF

Rights-of-way landscape managers are finding it convenient and less expensive to use "chemical mowing" techniques.

49 WEED FREE

For scenic roadsides, a sound fertilizer program means deeply-rooted plants that can battle weeds for water and nutrients.

54 TOUGH MARKETPLACE

The nation's landscape fabric manufacturers are so convincing in their claims that a customer really doesn't know who to believe.

68 PATCH DISEASES

Third of three parts on controlling patch diseases of turf, by Dr. Houston Couch of VPI-SU.

74 LEASING VS. BUYING

There is no easy way to figure out whether it's cheaper to buy or lease. Rudd McGary and Ed Wandtke discuss alternatives.

DEPARTMENTS

- 6** NEWS/TRENDS
- 8** GREEN INDUSTRY NEWS
- 14** SHORT CUTS
- 76** PROBLEM SOLVERS
- 77** PRODUCTS
- 80** LETTERS
- 86** CLASSIFIED
- 90** AD INDEX
- 92** OUTLOOK



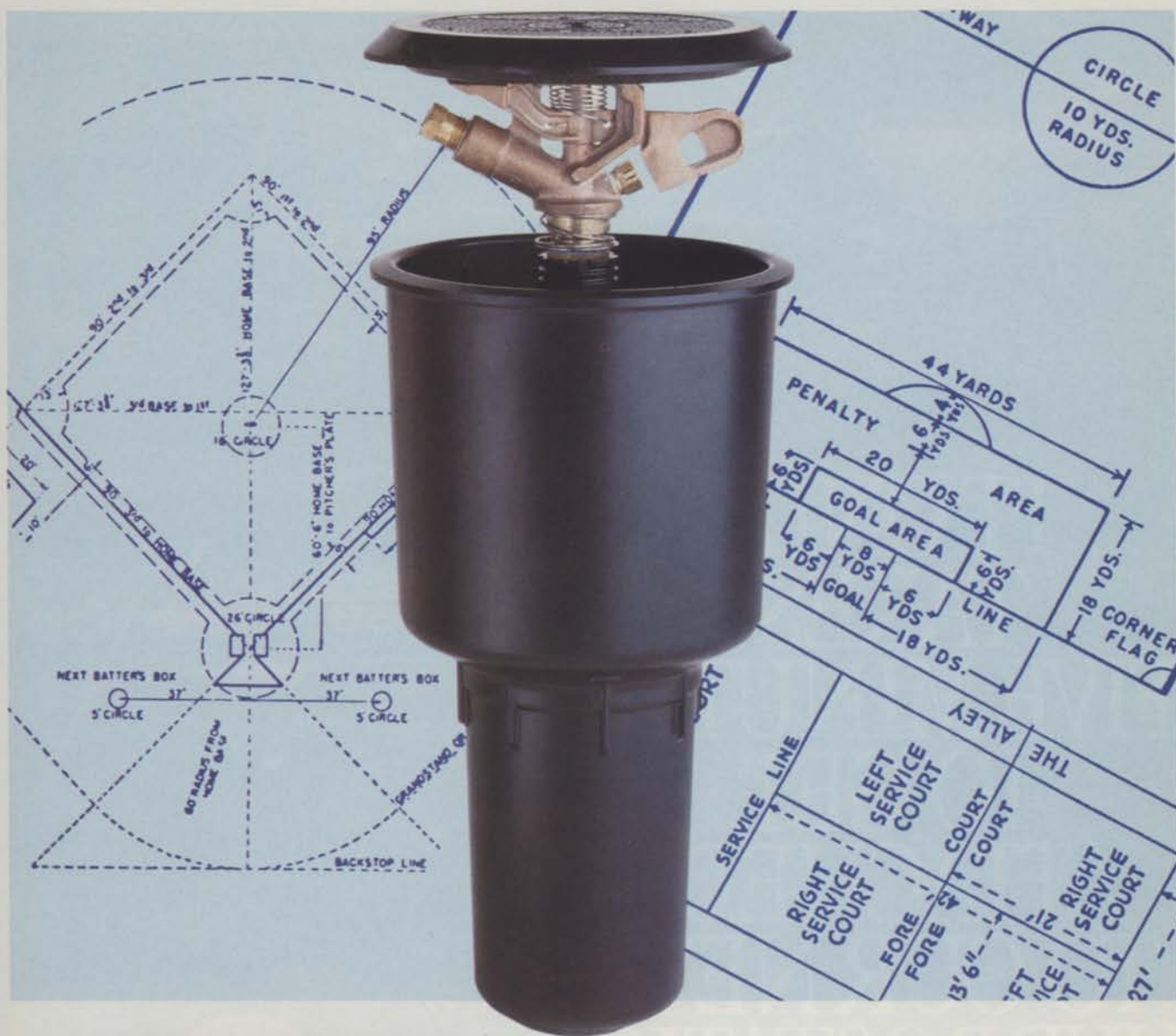
Dick Herr of Jupiter Hills, photo by Ron Hall.

WEEDS TREES & TURF (ISSN 0043-1753) is published monthly by Harcourt Brace Jovanovich Publications. Corporate and Editorial offices: 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Advertising Offices: 7500 Old Oak Boulevard, Cleveland, Ohio 44130, 111 East Wacker Drive, Chicago, Illinois 60601 and 455 East Paces, Ferry Road, Suite 324, Atlanta, Georgia 30305. Accounting, Advertising Production and Circulation offices: 1 East First Street, Duluth, Minnesota 55802. Subscription rates: \$25 per year in the United States; \$35 per year in Canada. All other countries: \$70 per year. Single copies (pre-paid only): \$2.50 in the U.S.; \$4.50 in Canada; elsewhere \$8.00; add \$3.00 for shipping and handling per order. Second class postage paid at Duluth, Minnesota 55806 and additional mailing offices. Copyright© 1986 by Harcourt Brace Jovanovich, Inc. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher.

POSTMASTER: Send address changes to WEEDS TREES & TURF, P.O. Box 6198, Duluth, Minnesota 55806-9898.

(HBJ) A HARCOURT BRACE JOVANOVIICH PUBLICATION

Team Up With A Winner



The Spec Series Rotors

Specifically designed and built for large, heavy traffic turf areas, Rain Bird's Spec Series full- and part-circle rotors lead the competition in performance AND price.

The 4045, 5055 and 6060 model rotors incorporate as standard many features that are optional or not available with other rotors. A thermo-plastic wiper seal keeps the assembly free from debris, reduces flow-by and assures maximum operating and energy efficiency. An internal Seal-A-Matic™ valve prevents low head drainage. A heavy-duty, stainless steel retract spring ensures positive pop down. And a one-piece rubber cover protects players from injury.

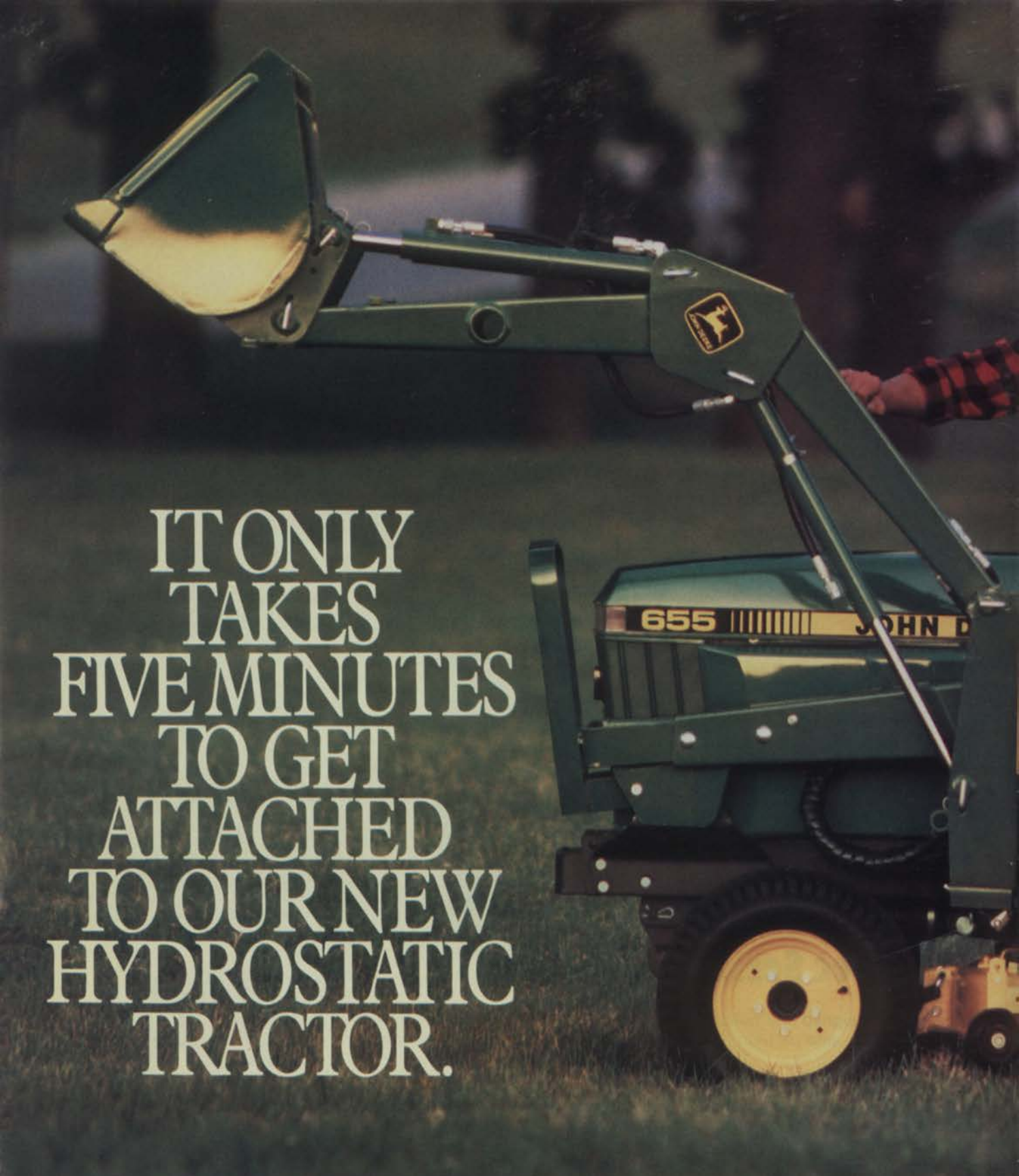
The Spec Series rotors—a winning combination of performance and affordability.

For more information write:

Rain Bird Sales, Inc., Turf Division, 140 N. Grand Ave., Glendora, CA 91740



RAIN BIRD



IT ONLY
TAKES
FIVE MINUTES
TO GET
ATTACHED
TO OUR NEW
HYDROSTATIC
TRACTOR.

Changing implements on a tractor is a lot of trouble. Whether you do it once a day, once a week or three times a season, it always takes up time that could be better spent on another job.

That's why you're going to love our new hydrostatic diesel tractor.

It only takes five minutes, a pair of pliers and a pair of hands to attach a front loader or mowing deck.

And thanks to a special mounting system we've designed, you never have to take the mowing deck off. You can keep it attached while using any other implement, and operate

them independently of each other.

But this tractor doesn't stop there. It also saves you valuable minutes out on the job. Because features like two-pedal-controlled hydrostatic transmission and power steering make this one of the easiest tractors there is to run.



Of course even with all these extra features, our new hydrostatic utility tractors are still built the same way as all our tractors. Rugged and dependable. They're designed around fuel-singing diesel 3-cylinder engines (16-hp in the 655, a 20-hp in the 755, and a 24-hp in the 855).

And they all feature live independent mid and rear PTO.

To learn more about our compact utility tractor line, or the name of the dealer nearest you, call 800-447-9126 toll free (800-322-6796 in Illinois). Or write John Deere, Dept. 79, Moline, IL 61265.

Or better yet, why not go and check out a hydrostatic tractor for yourself. You'll get attached to one in no time at all.



**Nothing Runs
Like a Deere®**



Jerry Roche



Ken Kuhajda



Heide Aungst

Hi-tech hits outdoor power

■ A recent trend toward using technology to create smaller, more efficient outdoor power equipment will continue into the 1990s, according to a small engine expert.

"Outdoor power equipment is using science and technology today, not mass, not force, not brute strength," says John Johnston, national service manager for HMC/the Green Machine, Long Beach, Calif. "Five years from now, you'll be working on plastic and ceramic engines weighing two to three pounds and producing temperatures up to 1200 degrees Fahrenheit."

Johnston, who gave a series of "total service seminars" to HMC dealers across the nation last winter, points also to advances being made on engines of all sizes. "There will come the day when you'll see no spark plugs in engines," he notes. "As early as next year, General Motors products won't have distributors."



John Johnston

Toro enters fitness market

■ The Toro Company is not sitting still, enjoying its comeback from a well-publicized slump of a few years ago. A leading independent manufacturer of lawn care equipment, Toro has entered a market outside its usual domain—the fitness market.

The Minneapolis-based company has introduced the Isopower exercise machine, a technologically-advanced product that made its debut in February. The machine uses electronics, rather than actual weights, to control resistance.

Bob Carlson, Toro fitness equipment vice-president and an exerciser himself, explains: "The major difference between this equipment and others is that it uses electromagnetic force to create resistance as opposed to mechanical means."

Two birds with one system

■ Texas researchers have designed and developed an irrigation system capable of applying both water and chemicals through separate nozzle systems from the same moving pipe. W.M. Lyle of the Texas Agricultural Experiment Station and J.P. Bordovsky developed the dual-nozzle system for efficient irrigation and accurate chemical application.

The researchers say the new Multi-Function Irrigation System (MFIS) is an upgraded Low Energy Precision Application (LEPA) system. LEPA consistently posted application efficiencies of 98 to 99 percent.

STAFF

Editor
Jerry Roche, Cleveland
Managing Editor
Ken Kuhajda, Cleveland
Associate Editor
Heide Aungst, Cleveland
Publisher
Dick Gore, Atlanta
Associate Publisher
Ron Kempner, Atlanta
Senior Vice President
Tom Greney, Chicago
Group Vice President
Robert Earley, Cleveland
Production Manager
Anne MacLean, Duluth
Production Supervisor
Marilyn MacDonald, Duluth
Graphic Design
Denise Johnson, Duluth
Graphic Coordinator
David Komitau, Cleveland
Circulation Supervisor
Judy Connolly, Duluth
Directory Coordinator
Sheryl Alvar, Duluth
Reader Service Manager
Gail Kessler, Duluth
Promotion Director
Linda Winick, Cleveland

OFFICES

ATLANTA
455 East Paces
Ferry Road Suite 324
Atlanta, GA 30305
(404) 233-1817

CLEVELAND
7500 Old Oak Boulevard
Cleveland, OH 44130
Editorial: (216) 243-8100

CHICAGO
11 East Wacker Drive
Chicago, IL 60601
(312) 938-2344

SEATTLE
1333 N.W. Norcross
Seattle, WA 98177
(206) 363-2864

DULUTH
120 West Second Street
Duluth, MN 55802
(218) 723-9200

MARKETING REPRESENTATIVES

Dick Gore
Atlanta (404) 233-1817

Ron Kempner
Atlanta (404) 233-1817

Jon Miducki
Cleveland (216) 243-8100

Robert Mierow
Seattle (206) 363-2864

HBJ HARCOURT BRACE JOVANOVIĆ PUBLICATIONS

Robert L. Edgell, Chairman; Richard Moeller, President; Lars Fiadmark, Executive Vice President; Arland Hirman, Treasurer; Thomas Greney, Senior Vice President; Ezra Pincus, Senior Vice President; Joe Bilderbach, Vice President; James Gherna, Vice President; George Glenn, Vice President; Harry Ramaiey, Vice President.

ELITE
ELITE
ELITE
ELITE
ELITE

The fertilizer you've
been waiting for
is . . .

COMING SOON !!

From the company that listens . . .

(800) 321-5325
NATIONWIDE

LESCO

(800) 362-7413
IN OHIO

LESCO, Inc., 20005 Lake Road, Rocky River, Ohio 44116 (216) 333-9250

Circle No. 251 on Reader Inquiry Card

GREEN INDUSTRY NEWS

MAINTENANCE

Should students work on campus grounds?

Landscape managers at Midwestern colleges have differing opinions on allowing students to work on campus grounds.

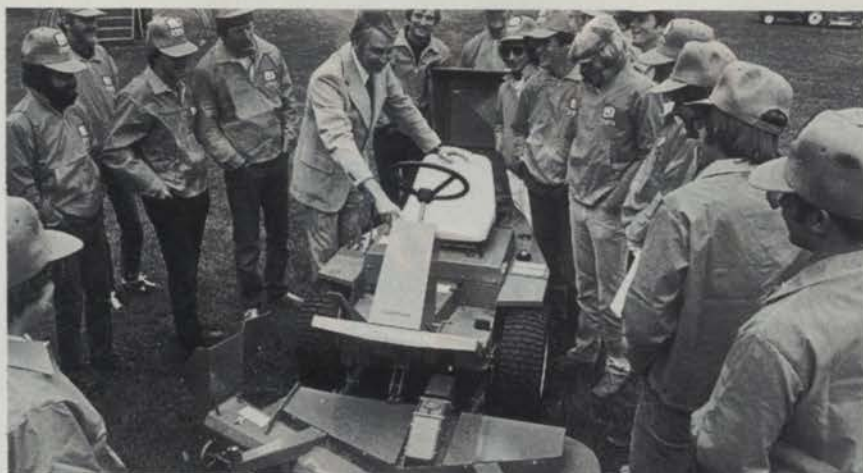
Managers discussed the problem at the third annual campus management seminar sponsored by the National Institute on Parks and Grounds Management, held in Indianapolis.

Some landscape departments have little choice but to accept financial aid students under work/study programs. Gordon Wills, supervisor at Marion College in Marion, Ind., says student help can be useful when the right students are hired for the crew.

Wills says the key to success is the interview. "I try to find out as much about the student as I can," Wills says.

Wills also says it's important to hire students with better than average grades. The above-average student will adjust easier to college and will be able to handle the added responsibility of a job.

Once the student is hired, it's important to check the work. Many students are anxious to finish quickly, whether to get on to other activities or to try to impress the supervisor. Or, some students try to stretch out the



College students get first-hand experience from Jacobsen's Ned Brinkman on using turf maintenance equipment at an annual seminar.

work, since they're paid an hourly wage.

Either way, it's important for supervisors to keep expectations reasonable and check students work frequently.

Wages will vary depending on the college or university. Morris Burkett, program coordinator at Wabash Valley College in Mount Carmel, Ill., pays his students minimum wage. Mount Carmel has a high unemployment rate. "People are glad to work, if they can find a way," Burkett says.

At the University of Illinois, Chicago branch campus, students on the

grounds crew start at \$7.50 an hour, according to operations engineer Larry Thompson.

Insurance coverage for students will also differ at each campus. Some campuses cover students for all areas of grounds work, including equipment operation. Others have limited use of student help. Summer help may also fall under different coverage than work/study students.

Before using students on the grounds crew, you may want to check with your college administration for any regulations concerning student help.

BUSINESS

Charting inflation's impact

Have your sales kept up with inflation?

U.S. Chamber of Commerce economist Martin Lefkowitz has developed a formula for calculating changes in the dollar's purchasing power.

The formula tells the amount of money needed today to match the dollar's buying power during any of the past 25 years. It's determined by using the inflation factor geared to the consumer price index (CPI).

The chart here gives corresponding figures.

For example, it would take \$3.78 this year to match the dollar's power in 1960, and \$2.68 to equal the 1970 dollar.

To get larger figures, just multiply. If you were making \$30,000 a year in 1970, you need to make \$86,400 this year to have the same purchasing power (2.88 x \$30,000). If your sales in 1965 totaled \$300,000, you would have to be doing well over \$1 million to keep up with inflation. (3.55 x \$300,000).

Lefkowitz says the index is helpful in enabling business people to bring any dollar amount up to the current year in real terms.

25-YEAR INFLATION MULTIPLIERS

1960 - 3.78	1969 - 3.05	1978 - 1.71
1961 - 2.74	1970 - 2.88	1979 - 1.54
1962 - 3.70	1971 - 2.76	1980 - 1.36
1963 - 3.65	1972 - 2.67	1981 - 1.23
1964 - 3.61	1973 - 2.52	1982 - 1.16
1965 - 3.55	1974 - 2.27	1983 - 1.12
1966 - 3.45	1975 - 2.08	1984 - 1.08
1967 - 3/35	1976 - 1.97	1985 - 1.04
1968 - 3.22	1977 - 1.85	1986 - 1.00

INDUSTRY

MMSD to stick with Milorganite

On the heels of rumors at last winter's GCSAA Convention and Show that it would abandon production of Milorganite fertilizer, the Milwaukee Metropolitan Sewerage District has issued a press release.

"Lay that rumor to rest," says MMSD executive director Patrick Marchese. "We are committed to stepped-up Milorganite production."

The MMSD says it will increase production 25 percent to 75,000 tons when a major modernization and expansion at the Jones Island Wastewater Treatment Plant is completed.

"Never has the Milorganite future looked so bright," says Mike Malk, solids utilization manager. "We wouldn't throw big bucks at Milorganite if it weren't a leader in its field."

The MMSD is the only sewerage agency in the country to nationally market a heat-dried, granular fertilizer derived from sewage sludge.

Circle
the
Reader
Service
numbers
of those
items of
interest
to you.

For fastest response, use the peel-off label from the front cover.

NAME _____

TITLE _____

FIRM _____ **PLACE COVER LABEL HERE**

ADDRESS _____ **PRINT PHONE NUMBER BELOW**

CITY _____

STATE _____ ZIP _____

TELEPHONE () _____

101	115	129	143	157	171	185	199	213	227	241	255	269	283	297	311	325
102	116	130	144	158	172	186	200	214	228	242	256	270	284	298	312	326
103	117	131	145	159	173	187	201	215	229	243	257	271	285	299	313	327
104	118	132	146	160	174	188	202	216	230	244	258	272	286	300	314	328
105	119	133	147	161	175	189	203	217	231	245	259	273	287	301	315	329
106	120	134	148	162	176	190	204	218	232	246	260	274	288	302	316	330
107	121	135	149	163	177	191	205	219	233	247	261	275	289	303	317	331
108	122	136	150	164	178	192	206	220	234	248	262	276	290	304	318	332
109	123	137	151	165	179	193	207	221	235	249	263	277	291	305	319	333
110	124	138	152	166	180	194	208	222	236	250	264	278	292	306	320	334
111	125	139	153	167	181	195	209	223	237	251	265	279	293	307	321	335
112	126	140	154	168	182	196	210	224	238	252	266	280	294	308	322	336
113	127	141	155	169	183	197	211	225	239	253	267	281	295	309	323	337
114	128	142	156	170	184	198	212	226	240	254	268	282	296	310	324	338

WEEDS TREES & TURF

JUNE 1986

This card expires Aug. 15, 1986

MY PRIMARY BUSINESS AT THIS LOCATION IS:
(PLEASE CHECK ONE ONLY IN EITHER

A, B OR C)

**A. LANDSCAPING/GROUND CARE AT ONE OF THE
FOLLOWING TYPES OF FACILITIES:**

- 0005 Golf courses
 0010 Sport complexes
 0015 Parks
 0020 Rights-of-way maintenance for highways, railroads & utilities
 0025 Schools, colleges & universities
 0030 Industrial & office parks/plants
 0045 Condominiums/apartments/housing developments/
 hotels/resorts
 0050 Cemeteries/memorial gardens
 0060 Military installations & prisons
 0065 Airports
 0070 Multiple government/municipal facilities
 Other type of facility (please specify) _____

B. CONTRACTORS/SERVICE COMPANIES/CONSULTANTS:

- 0105 Landscape contractors (installation & maintenance)
 0110 Lawn care service companies
 0125 Landscape architects
 0135 Extension agents/consultants for horticulture
 Other contractor or service
 (please specify) _____

C. SUPPLIERS:

- 0205 Sod growers
 0210 Dealers, Distributors
 Other supplier (please specify) _____

Approximately how many acres of vegetation do you
maintain or manage? _____

What is your title? (please specify) _____

I would like to receive (continue receiving)

WEEDS TREES & TURF each month: YES NO

Your Signature: _____ Date: _____



BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 2675 CLEVELAND, OHIO

POSTAGE WILL BE PAID BY ADDRESSEE

READER SERVICE DEPARTMENT

WEEDS TREES & TURF

POST OFFICE BOX 6049
DULUTH, MINNESOTA 55806-9749

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



**TELL
US
WHAT
YOU
WANT**