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*Frame design allows the 3325 to carry a full-size grass catcher on the center cutting unit.*



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hour without runoff. New seeding, a more common and affordable practice, is less effective but also reduces runoff in time.

Sullivan suggests a more direct way to reduce pesticides in runoff and groundwater. Use less. Pesticide use has doubled since 1960, he says. The green industry accounts for 28 percent of all pesticides used.

Sullivan believes a trend toward less persistent chemicals is necessary, as well as a push for Integrated Pest Management (IPM) on a more widespread basis. "If you don't reduce the application of pesticides, you'll reduce the availability of pesticides," he says.

Watschke and Sullivan spoke on groundwater and runoff at the eighth annual Professional Lawn Care Association of America conference.

#### LAWN CARE

### Tru Green acquires Old Fox Lawn Care

Tru Green has strengthened its market position in the New England area by acquiring Old Fox Lawn Care, East Providence, R.I. Old Fox had revenues of \$9.5 million in 1987 with branches in Connecticut, Rhode Island and Massachusetts. Atlanta-based Tru Green had less than \$4 million in these markets.

Tru Green, a wholly-owned subsidiary of Oak Brook, Ill.-based Waste Management, Inc., will consolidate some of the two companies' branches, according to president Howard Evers. All employees will be kept, however, and the Old Fox management will be given more responsibility.

Bernard Buonanno, Jr., former president of Old Fox, will oversee all the Tru Green operations in the northeast region, Evers said. John Kenenski, former operations manager of Old Fox, will be the region's general manager.

Even the Old Fox name will remain. The branches will carry the title: "Old Fox, a Tru Green Company."

#### AWARDS

### Irrigation Association honors Mel Hagood

The Irrigation Association named Mel A. Hagood its 1987 Man of the Year at the International Irrigation Exposition and Technical Conference in Orlando last October.

Hagood, now an irrigation consultant, amassed 40 years of experience in the irrigation industry. Most recently he was a professor at Washington State University, from which he retired in 1977.

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His work as the United Nations' consultant has taken him to Cyprus, Morocco, Iran, Bangladesh, India, Sri Lanka and Yemen.

Also, Terence D. Heiler, director of the New Zealand Agricultural Engineering Institute, received the IA's Crawford Reid Memorial Award. He was recognized for making significant achievements in the promotion of proper irrigation practices and brought advancements to irrigation outside the United States.

The association honored Robert B.

Daugherty, CEO of Valmont Industries, Valley, Neb., with the Irrigation Industry Achievement Award for contributions to the development of the industry and the products used by it.

William R. Pogue, president of Irrometer, Inc., Riverside, Calif., is the new president of the association. He is joined on the executive committee by Richard Hunter (president-elect); Glenn Tribe, (vice president); Michael Sypolt, (treasurer); John Riddering, (past president); and Bob Sears, executive vice president and chief operating officer.

Continued on page 16



*Ideas for Progress*

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Elected to the board of directors were Larry Cox, William Gibson and William Koonz.

## TREES

### For trees, LCOs need a 'total commitment'

Bob Felix, executive vice president for the National Arborists Association, was the voice of reason and caution in his talk to lawn care operators at San Antonio's Professional Lawn Care Association of America conference.

"You need a total commitment from a lawn service firm if it's going into tree care," Felix emphasized. "Tree care is labor intensive, with high turnover. It takes a certain mentality to go to the top of a tree 80 to 100 feet up hanging on a rope.

"It's safe if done properly. The hazards are there, especially powerlines." Equipment such as chain saws and chippers must be



Bob Felix

used properly, he adds.

Equipment is expensive. A truck with a chipper can cost \$35,000, an aerial lift as much as \$75,000, according to Felix.

Maintenance costs, debris disposal and different estimating tactics are also considerations. "It is easier for a tree care business to get into the lawn care business than it is for the lawn care business to get into tree care," says Felix.

He adds that spray techniques are different as well. Tree care's target spraying, and application techniques have improved, he says. But, "it takes a knowledge of application principles to get a high-pressure sprayer pointed in the right direction."

## CONFERENCES

### Plane crash deaths mar 8th PLCAA show

Among the victims of Continental Flight 1713, which crashed on take off from Denver en route to Boise, Idaho, were Jim Marria of Perma Green Lawn Co., his wife Karen and two other Perma Green employees. They were all returning to Boise following the eighth PLCAA Conference and Trade Show in



Russ Frith of Lawn Doctor (left) receives congratulations from PLCAA's Jim Brooks after the former was elected 1988 PLCAA president.

San Antonio, November 15.

Jim Marria had served PLCAA as director, secretary/treasurer, vice president and president in 1986.

"The current success and financial stability of our association is due in large part to Jim's leadership over the past six years," PLCAA executive vice president James Brooks wrote in a letter to PLCAA members.

He and his wife are survived by two sons, Craig, 17 and Mark, 16.

Nick Ysursa, Marria's brother-in-law and Boise branch manager, and director of technical services John Stewart also died in the crash. Mike Spicer and Doug Self, both of Perma Green, survived the crash, as did Tom Denker and Barbara Hooper of Evergreen Landscape in Ketchum, Idaho.

The Marria family has set up a Bishop Kelly High School Scholarship fund in memory of the Marrias and Ysursa. Contributions can be made to: Marria-Ysursa Scholarship Fund, c/o Dr. Dean Sorenson, 5197 Redbridge Dr., Boise, ID 83703.

The deaths marred what was otherwise considered a successful conference. Though attendance was down to 1,250 this year as opposed to 1986 totals exceeding 2,000, seminars were well-attended.

A record 163 exhibitors covered 33,600 net square feet of exhibit space, and outdoor demonstrations were well-attended despite some rain.

Four new board members were elected at the show as well. They are J. David Fuller of Fullcare Turf Maintenance, Louisville, Ky.; Richard Miller of Ever-Green Lawns, Golden, CO.; Richard Steinau of Greenlon, Cincinnati, Ohio; and Richard White of ServiceMaster, Wheaton, Ill.

In addition, the PLCAA reports that 353 new members joined the association in 1987, exceeding the goal of 300, and bringing the total membership to 1,300.

"We're going to have another very, very good year in 1988," Brooks told members at the annual business meeting where Russ Frith of Lawn Doctor, Matawan, N.J. was elected new PLCAA president.

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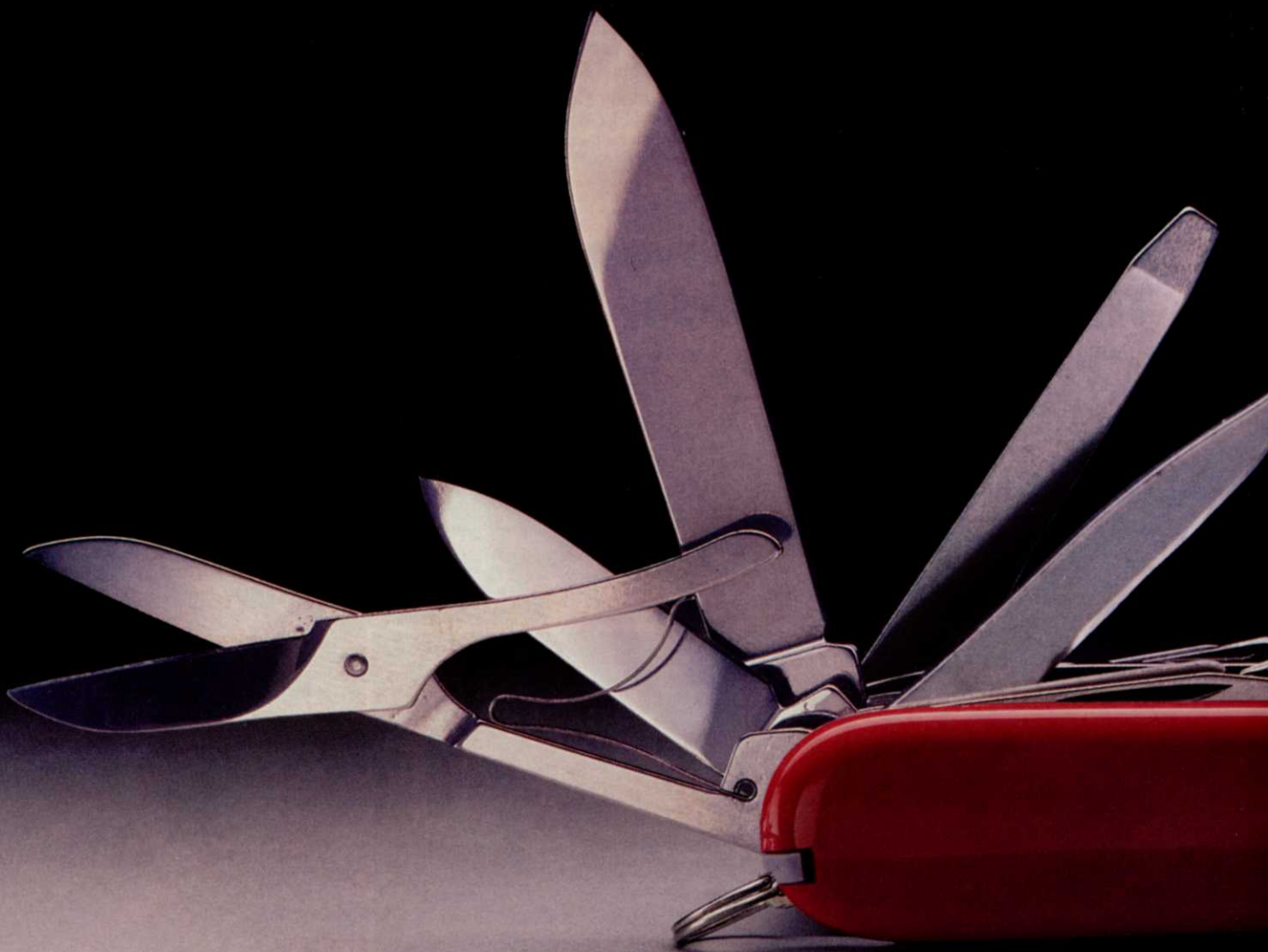


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But speed is just part of the 216's attraction.

Identical suspension on all three cutting units lets you





follow the land contours for a more consistent, uniform 72" cut. And the Reelmaster's unique belt drive system keeps constant tension on the cutting belts.

The secret is a solid belt link combined with an electric clutch. It keeps constant tension on the drive belts and prevents reel disengagement even in the most severe cutting conditions.

Put it all together—cutting versatility, speed and quality of cut—and you'll understand why the Reelmaster 216 is the

efficiency expert you need on your staff.

For more information about the Reelmaster 216, send in the attached coupon.



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that keep you cutting.**

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# A HERBICIDE PRIMER

Everything you always wanted to know about herbicides is presented on this and the following pages by a long-time expert on weed control.

by W. Powell Anderson, Ph.D.

**H**erbicides are chemicals that kill plants. About 30 herbicides are registered for use in turfgrass. Their value lies in their ability to selectively kill weeds with little or no injury to the turfgrass.

To use these chemicals effectively, you need to know the turfgrass species involved, to correctly identify the targeted weed species, and to know the characteristics of the herbicides available for use in turfgrass. From a practical viewpoint, you should know the answers to the following questions about a turfgrass herbicide before purchasing and applying:

1. Is it safe to use on your turfgrass species or cultivar?
2. Will it control your problem weeds?
3. When must it be applied relative to weed and turf growth?
4. Is it a contact or systemic herbicide?
5. Does it volatilize—and if so, do the vapors pose a problem?
6. Is the product applied as an aqueous spray mixture or as dry granules or pellets?
7. What effect does rainfall or irrigation have on its activity?

Answers to these questions are found on the product label.

Pertinent herbicide characteristics include the following: (1) selective or non-selective, (2) pre-emergence or post-emergence, (3) contact or systemic, (4) volatile or non-volatile, (5) product formulation, and (6) effect of rainfall or irrigation following application.

## Selective or not?

Selective herbicides kill some species of plants, but not others. The particular herbicide chosen for use in turf should not cause significant injury to the turfgrass species, but, at the same time, it

must provide adequate control of the problem weeds.

Thus, herbicides used for weed control in turfgrass are selective herbicides, killing problem weeds with little or no injury to the turfgrass. Examples of selective turfgrass herbicides include the phenoxy herbicides (2,4-D, MCPA, dichlorprop and mecoprop); the dinitroaniline herbicides (benefin, oryzalin, pendimethalin, prodiamine and trifluralin); and others such as bensulide, bentazon, bromoxynil, DCPA, dicamba, ethofumesate, fenoxaprop-ethyl, MSMA, oxadiazon, pronamide and siduron.

Some of these herbicides control young broadleaf (dicot) weeds, but not grass weeds. Some control grass weeds, but not broadleaf weeds. Others control certain species of

both broadleaf and grass weeds. Most turfgrass herbicides control young annual weeds, while a few are effective against both seedling and established annual and perennial weeds. Some of the turfgrass herbicides will kill one kind of turfgrass but not another.

Non-selective herbicides kill all, or almost all, actively growing plants, weeds and turfgrass. Non-selective herbicides may be used in turf renovation and at time of seed-bed preparation. Some non-selective herbicides may be used selectively in dormant warm-season turf, such as Bermudagrass, to control winter weeds.

Examples of non-selective herbicides are cacodylic acid, glyphosate, metham, methyl bromide, metribuzin and paraquat.

Herbicides are usually applied after weeds have emerged to established stands of turfgrass and to warm-season species when dormant, with no green vegetation showing aboveground. Some may be applied before weed emergence (siduron) or after the weeds emerge (bromoxynil) in new seedlings of turfgrass.

## Pre- or post?

Turfgrass herbicides are applied before or after weeds emerge, depending on the particular herbicide used. Some herbicides are effective only as pre-emergents, others only as post-emergents, and some are effective both ways.

Pre-emergence herbicides kill the weeds in the seedling state; that is, as the seeds germinate, as the seedlings push their way upward through the soil toward the soil surface, or shortly after emergence from the soil.

Advantages of pre-

## TURFGRASS HERBICIDES

Common Names	Trade Names
AMA	Super Crab-E-Rad, Super Dal-E-Rad, Super Methar
asulam	Asulox
benefin	Balan
bensulide	Betamec, Betasan
bentazon	Basagran
bromoxynil	ME4 Brominal, Buctril, Nu-Lawn Weeder
cacodylic acid	Phytar 560
DCPA	Dacthal
dicamba	Banvel
dichlorprop or 2,4-DP	in Super Trimec products and in Weedone DPC products
endothal	Endothal Turf Herbicide
2,4-D amine	Dacamine, DMA-4, Weedar Emulsamine, Weedar 64, others
2,4-D LV ester	Esterone 99 Concentrate, Salvo, Weedone LV4, others
DSMA	Drexel DSMA, Helena DSMA, Vertac DSMA, others
ethofumesate	Progress
fenoxaprop-ethyl	Acclaim (registration expected in 1987)
glyphosate	Roundup
mecoprop or MCPP	Chipco Turf Herbicide, Mecomec, Weedone MCPP, others
metham	Vapam
MCPA	Chiptox 2E
MSMA	Bueno 6, Daconate 6, Dal-E-Rad 120, Drexel MSMA, others
napropamide	Devrinol
oryzalin	Surflan
oxadiazon	Ronstar
paraquat	Gramoxone
prodiamine	Blockade (registration expected in 1988)
pronamide	Kerb
siduron	Tupersan
simazine	Princep
trifluralin	in Team