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Try Greens 6-1-3, Turf 10-2-6 and Greens Super 10-2-6 for a season on a problem lawn. You'll find that because they are environmentally sound, they improve the world a little as they improve your turf a lot.

Call or write for details and the name of your distributor.



Circle No. 124 on Reader Inquiry Card



Deficiency symptoms

Iron (Fe)

Symptoms: Intervenal yellowing in new tissues (chlorisis). Blades lose color: necrosis is minimal.

Treatment: 1-2 lbs./acre of iron sulfate; foliar sprays.

Manganese (Mn)

Symptoms: Yellowing or striping between veins along with stunting, curling or spotted leaves. Leaves are very limp.

Treatment: 1-2 lbs./acre of manganese sulfate.

Zinc (Zn)

Symptoms: Dark, thin leaves turning progressively white; vellowing and bronzing of stunted leaves; witches brooms, reduced growth.

Treatment: 0.4-0.8 lbs./acre of zinc sul-

Copper (Cu)

Symptoms: Bluish discoloration at the tips of youngest leaves.

Treatment: 0.3-0.5 lbs./acre copper sulfate

Boron (B)

Symptoms: Growing points develop chlorotic streaks; leaves are stubby and rosette-like in appearance. Treatment: 0.1-0.3 lbs./acre of boron.

Molybdenum (Mo)

Symptoms: Wilting, stumping and cupping of broad leaves.

Treatment: 0.1 lb./acre of molybdenum. Lime applications improve

Source: "The Turf Managers" Handbook" by Daniel & Freebora, 1989

availability.

Proper size, proportions, of root balls

■ To reduce transplanting shock and assure that adequate feeding roots are moved with trees purchased from nurseries, the American Association of Nurserymen has established standards for height/diameter relationships and root ball sizes. General rule of thumb for approximating minimum root ball diameter is one foot for each one inch of caliper, according to the AAN.

Please note that caliper is tree trunk diameter, measured at six inches above the ground for trees with a diameter of four inches or less and 12 inches above the 1. Soil testing

2. Tissue testing

3. Plant symptoms

TECH CENTER

Of those three methods of detection, Davidson says observation of plant symptoms is most reliable.

"There's no really good calibration for soil testing," believes Davidson, "and most state labs are reluctant to make micronutrient recommendations based on soil tests. If private labs (make recommendations). I would question their data base."

Davidson says tissue analyses can be helpful, but they must be done regularly to determine a pattern of deficiency.

"Plant performance," advises Davidson, "will be your best source of information as to whether or not micro- or macronutrients are deficient."

Visual clues to micronutrient deficiency include:

- · Lack of vigor; gradual slowing of growth rate.
- Poor response to nitrogen (especially important when you know there are no diseases or pests present).
- Turf adjacent to the affected area is healthy.
- · Are symptoms occuring on young or old leaves? According to the "Turf

The Micronutrient Danger Zone

(parts per million)

Iron: 120 ppm Copper: 12 ppm Manganese: 80 ppm

Boron: 8 ppm Zinc: 50 ppm Molybdenum: 2

Source: Dr. Dave Davidson, Cornell University

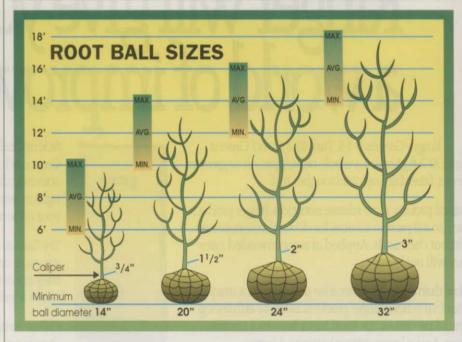
Managers' Handbook," for example, iron deficiency will cause new tissue to develop intervenal vellowing.

- Is the symptom occurring intervenally, uniformly, or is it blotchy?
- Is the plant dying? Watch leaf tips and margins.

Factors influencing nutrient availabilitv include:

- -The soil (texture; minerology; fertility; amount of oxygen present).
- -Management (fertilizers; pesticides; irrigation; water quality).
- -The plant (species and variety; root function).

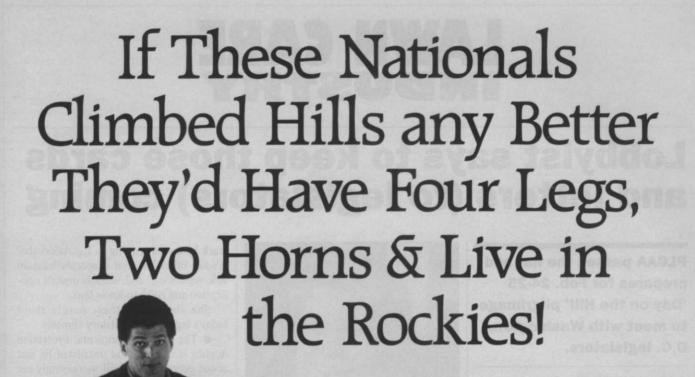
Davidson predicts the green industry will soon see more sophisticated "quick tests" for turf diagnosis.



ground on larger planting stock. The diameter of larger trees, expressed as "diameter breast height" (DBH), is measured approximately 4-1/2 feet above ground level.

This chart, courtesy of "Tree City USA Bulletin" of the National Arbor Day Foundation, illustrates the AAN standards for most deciduous shade trees.

A more complete range of sizes may be found in "American Standard for Nursery Stock," available for \$10. Send check or money order to: AAN, 1250 I St., NW, Suite 500, Washington, DC 20005.



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LAWN CARE

Lobbyist says to keep those cards and letters (to legislators) coming

PLCAA passes the hat and prepares for Feb. 24-25 'Day on the Hill' pilgrimage to meet with Washington. D.C. legislators.

Josephine "Jo" Cooper says the lawn care industry, this past year, finally joined the real world. Got in step. Became part of the process.

She's referring to the political process. Cooper, a small woman with a soft

southern voice, is founder and senior principal of Capitoline International Group, Ltd., an issues management firm located in Washington D.C. It's the lobbying firm that the Professional Lawn Care Association of America (PLCAA) employed to chart its course on Capitol Hill this past vear.

"PLCAA decided that rather than simply responding and waiting for things to be done to you, the organization would become very much more active," says

Active? Indeed. After Cooper delivered the keynote address at PLCAA's 1991 Convention at Tampa in November, outgoing PLCAA president Neal DeAngelo, like a tent revivalist rattling a collection plate, commanded PLCAA directors to the speaking hall doors to collect the pledges of departing listeners.

There were no other exits.

This level of legislative/regulatory earnestness has characterized PLCAA ever since word got out this past mid-spring that several U.S. Senators had drafted



Josephine Cooper helping PLCAA make some friends on Capitol Hill

national lawn care legislation. PLCAA, which represents about 1,000 lawn care companies, has, since then, been exhorting members to:

1) on one hand, give money to its Federal Issues Management Fund and

2) on the other hand, become acquainted, vocal and-at least-recognizable to their legislators-on all levels.

The national legislation that ignited this flurry is dormant, maybe dead.

The PLCAA exhortations for members' money and time on behalf of legislative matters have only increased, though. These calls literally rose to a wail with the June 1991 ruling by the U.S. Supreme Court that any of the nation's 80,000 political subdivisions can-if they don't conflict with federal or state laws-draft their own pesticide use regulations.

Cooper says PLCAA is on the right

track by demonstrating to legislators that it's not inflexible, that it accepts "reasonable regulation" and sensibly drafted notification and right-to-know laws.

She also makes these points about today's legislative/regulatory climate:

- The U.S. Environmental Protection Agency is unloved and untrusted by just about everyone and will increasingly see its mandate as more regulations and increased enforcement.
- The media will intensify its coverage of environmental issues. "Most of the reporters involved with environmental issues are not so much objective journalists anymore as they are advocates," says
- The environmental activist community, and much of the public, is convinced some of the products on the market shouldn't be there. They wouldn't be available, these critics feel, if the EPA did its job properly.
- Most legislators don't know very much about the lawn care industry nor, probably, about pesticides. "We found that some very limited anecdotal situations. specific situations, formed the legislation that had been drafted, were driving that legislation," says Cooper.

With 23 years experience in environmental matters, some of it with the EPA and as a staffer on Capitol Hill, Cooper says that she's convinced that calls and letters from constituents to legislators do sway legislative opinion.

She also urges PLCAA members to participate in its "Day on the Hill" activities in Washington, D.C. Feb. 24-25.

-Ron Hall

ELSEWHERE

Determining customer wants. Competition grows O.M. Scott enters in the 1990s, p. 40

recycling race. p. 42

Video training in Maryland, p. 42

We cut this piece of Typar[®] Pro landscape Fabric to show what you can't do with the others.

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FOR PROFESSIONALS



LAWN CARE INDUSTRY

Determining customer wants

Do your front-line people spend 'quality time' on clients' lawns? That's one of the services most customers want.

■ It's no secret what your customers want, says Gary Clayton of Sandoz Agro North America Inc. It's how you *deal* with customer wants-and-needs that makes your company a success or a failure.

"You can't truly separate wants-andneeds and customer satisfaction," says Clayton, a 12-year green industry veteran. "So satisfying customers should be integrated into a company philosophy or mission statement."

Clayton says, historically, research has proven that customers in the green industry want:

- · a green, healthy lawn,
- treated by a trained, informative company
 - at a competitive price
 - offering additional or full services
 - implementing current technology.
 - "You must commit to develop a strate-



Gary Clayton: front-line people are best resources

gy," Clayton says. "And it must be a fulltime effort. You also need a system to measure customer satisfaction."

Too many times, lawn/landscape services concentrate on the target, or product: a green, healthy lawn. But what's expected by the customer is *more* than that, Clayton says: materials, good service and company responsibility. What's *possible* is another factor in the customer satisfaction arena: unusual actions of service, demonstrations of concern, and civic support.

"We have to generate that wide-scope focus," says Clayton. "Typical wants-andneeds are timely applications, by the same technician, professional application, respect of personal property, professional appearance and attitudes, leave-behind notes and guides, and spending time on the property."

However, to go that one step further, says Clayton, businesses that are really in tune with the customer add these personal *exceptional* services:

- notes detailing special problems;
- information in the mail or a telephone follow-up;
 - helpful office staff:
 - service visits without requests;
 - immediate response to problems;
 - exceptionally courteous front-liners;
- inspection and evaluation of the entire property;
- spending "quality time" with the customer; and
- a "sixth sense" of what the customer wants-and-needs.

There exist plenty of opportunities to determine customer wants-and-needs, too, says Clayton. These include point of sales, each application, each phone contact and/or a customer survey form.

"We're at a point in our industry where we have to get back to the basics," Clayton notes. "When you grow, you have to determine whether it's attributed to the sales and marketing function, or whether it's because you've (accurately) determined customer wants-and-needs.

"The bottom line in growth is how we communicate with our customer."

-Jerry Roche

More competition, fewer entrylevel prospects through the 90s

■ Meet Mr. Middle Management. His large corporation is downsizing. Pretty soon he will be out of work.

Don't pity Mr. MM. He won't be idle for long.

In fact, he might become the newest competitor to your lawn or landscape service business.

Two of every three former corporate climbers re-enter the job market on the small business side of the equation, says Gerald Sweda, the corporate training manager for O.M. Scott & Sons, Marysville, Ohio.

"The playing field is changing," says Sweda. "The rules of the game are changing." And many of these rule changes impact the growing importance of small business—which is both proliferating and failing at an astonishing rate—in America's economic picture.

Explains Sweda:

- Big business is dropping middle managers at record levels (over 2 million let go during the 1980s, and the pace is accelerating.) Many of these former professionals are fed up with the commute, they're fed up with downtown parking, they want to be their own bosses.
- The pool of basically unskilled workers is falling in relation to the industries needing them—in 1990 4.5 million fewer entry-level candidates than in 1980.

This translates into more entrepreneurs, would-be entrepreneurs and potential competitors, but fewer people willing to go out and actually do the labor.

"Small business has to learn some things from big business," says Sweda, but foremost, it has to learn how to compete. The days of trading customers with several friendly competitors, or running a classified ad and attract-



Gerald Sweda: small businesses need more sophistication

ing reliable hourly workers, is becoming just a warm and fuzzy memory to lawn and landscape care providers in many markets, says Sweda.

Small business operators are going to have to become as sophisticated as big business in the operation of their companies, he maintains.

Says Sweda, one of

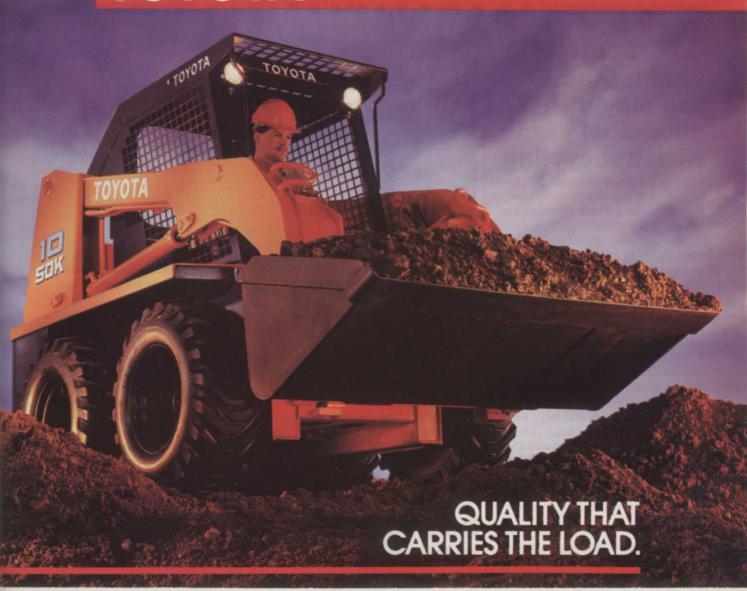
every six small businesses will fail in 1992, and, of the survivors, most can expect to lose almost 1/3rd of their customers each year.

"Suddenly customers are consciously aware of this service thing. We've made it such an issue that it's on everybody's lips now and every customer wants service," says Sweda.

"If you don't respond, they (customers) simply leave."

-Ron Hall

TOYOTA



Introducing Toyota quality in a bigger package. The new SDK10 skid steer loader.

One look tells you this machine can take on your tougher jobs. It's packed with performance, built with rugged durability and the world class quality you expect from Toyota. Quality that's on the surface and beneath it.

Start with 1800 pounds of operating load and 4740 pounds of breakout force. Massive frame and load arms, dual self-leveling cylinders and standard high output auxiliary hydraulics to run a variety of attachments add up to the productivity you demand.

The Toyota 1Z, 4-cylinder diesel engine has the power to deliver excellent traction for increased digging and pushing. Plus servo-assisted steering allows the operator to maneuver with less effort.

Operator convenience features include excellent, all-around visibility, easy access to hydraulic engine areas and easy attachment changeover. Advanced instrumentation with a vital warning system alerts the operator to critical maintenance needs.

And an exclusive, Toyota maintenance-free torque dampener reduces loads on the drive train for smoother operation and longer life.

The new SDK10 skid steer loader. Quality that carries the load now comes in a bigger package.

Whether you plan to rent, lease or buy, see your Toyota dealer today for an on-site demonstration.

TOYOTA QUALITY WHO COULD ASK FOR ANYTHING MORE!

Circle No. 128 on Reader Inquiry Card

LAWN CARE INDUSTRY

O.M. Scott bidding to be top player in municipal yardwaste recycling

■ Green industry professionals will benefit from O.M. Scott & Sons Company's drive to be the nation's municipal yardwaste recycling leader.

That company opened its 11th yard waste facility in mid-October, this one at its company headquarters in Marysville, Ohio. This site, like the others, is accepting lawn and landscape wastes. The disposal costs are significantly cheaper than at landfills, assuming the landfills still accept such material, claims a company official.

Other Scotts' sites are located in California, Texas, Pennsylvania, Georgia, Alabama, South Carolina and Virginia.

The newest Ohio site, nearly 22 acres, will process 50,000 tons of Franklin County grass clippings, leaves and brush each year. That's about one quarter of all yard wastes in the metropolitan Columbus area.

This particular facility is operated under contract to the Franklin County Regional Solid Waste Management Authority.

Here's how it works: yard waste from golf courses, city and village work crews, landscapers, tree companies, utility companies and lawn care professionals is taken to one of five transfer sites. Then the regional



The Wildcat Turner allows air to circulate through developing compost at the Scotts/Hyponex site in central Ohio.

authority transports the wastes from these collection areas to the Scotts' site.

At other compost locations, the material—either loose or in recyclable paper bags—is brought directly to the site.

"We are totally recycling this material," George Martin, manager of composting for Scotts/Hyponex, tells Landscape Management magazine. "We're taking something that was previously considered waste and disposed of in landfills, and we're recycling it and using it."

Scott's uses the compost resulting from the recycling operations as an ingredient in its Hyponex soil conditioners and top soils, says Martin. In addition to Hyponex bag products, the company also did about \$7 million in bulk compost sales. (Overall, the Hyponex organic product line reportedly accounted for about \$130 million of O.N Scott & Sons' \$380 million in sales last year.

Martin says ever-tightening landfill requiations are driving the yard-waste/composissue. Concurrently, some communities that had started composting services and discovering that they haven't the mone nor the expertise to operate them. They's looking to private industry for help.

Backyard composting by homeownermay grow, but it's unlikely—because the effort required to do it correctly—to become widespread, believes Martin and other compost authorities.

Martin says green industry professionals benefit from the Scotts/Hyponex facilities because yard wastes can be disposed of there far more cheaply than at landfills.

-Ron Hall

Maryland offers video training

 Money can't buy happiness, but \$120 can buy a pretty good start on your pesticide applicator training program.

That's the cost of a six-part video series that businesses can use to help train noncertified employees who handle and apply pesticides. The Cooperative Extension Service, Maryland Institute for Agriculture and Natural Resources, is offering the series which was funded in part by a \$30,000 grant from the U.S. Environmental Protection Agency.

"We developed this series in response to the needs of employers," says Amy E. Brown, Extension pesticide education coordinator. "The videos offer a convenient, inexpensive alternative to developing and conducting a training seminar every time new workers are hired." Topics covered include:

Module 1: Pesticide Laws and Regulations.

Module 2: The Pesticide Label.

Module 3: Protecting the Pesticide Handler.

Module 4: Guidelines for Proper Pesticide Handling.

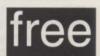
Module 5: Pesticides and the Environment.

Module 6: Integrated Pest Management.

The series includes on-screen tests and comes with printed discussion guides and sets of questions and answers to help employers insure that their employees understand essential information.

Contact: Amy E. Brown at (301) 405-3928. To order, send a check or money order payable to the University of Maryland, c/o Video Resource Center, 0120 Symons Hall, College Park, MD 20742.

LANDSCAPE MANAGEMENT



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found on page 67 to:
Landscape Management
Magazine.





Why not lighten up?

Reduce Your Clippings

and the costs of mowing, edging, trimming & clean-up

Whether your goal is to mow every week without getting bogged down or delayed, or whether you would like to skip every other mowing, the benefits of

Embark® PGR are the same ... big savings of time and labor.

Everett Mealman, Chairman and Chief Executive Officer PBI/Gordon Corporation



n light of today's economy and environmental constraints, you must reduce these costs. We can help you:

- An application of Embark Lite can slow down the growth of cool season turf grass for or 4 weeks to such a degree that mowers will virtually glide over the turf. Clippings will be reduced by 50% or more, reducing or eliminating the need for double-mowing, raking, blowing, etc. You'll be able to stay on schedule and budget during the peak growing season, even when there is foul weather or other problems that may interfere with mowing. Your cost: Only about \$18 per acre.
- ☐ A tank mix of Embark Lite and Limit® PGR can slow down the growth of cool season turf grasses for up to six weeks during the major growth period, and reduce the number of mowings by over 50%. The chemical cost of approximately \$45 per acre is appreciably less than the cost of a mowing when everything is
- ☐ A tank-mix of Embark 2.S and Ferromec® Liquid Iron can reduce the mowing of warm sea-son grasses like centipede and St. Augustine by more than 50% for six to seven weeks for only \$45 per acre. (Of course, bermuda costs more, but mowing it also costs more.)

There is nothing on the scene today that more efficiently slows down the growth of turf, thus reducing mowing time, than Embark (mefluidide). How timely, given the current landfill situation. Turf quality needn't be compromised, thanks to a new fine-turf formulation, tank-mixtures, and specific directions for ornamental turf use.

Embark is foliarly absorbed and directs the life energy of the plant away from the development of seedheads and stem elongation, which means that the plant's root mass is not used up in support of excessive topgrowth. Interestingly, when untreated grasses may begin to show the effects of excessive heat and drought, Embark-treated grass actually enjoys a rebound of life for a couple of weeks from the energy that was stored up in the roots.

Embark Lite is the mefluidide formulation especially designed for fine turf. Limit is amidochlor, a root-absorbed PGR which is also a PBI/Gordon product. When tank-mixed with Embark Lite, the Limit helps deliver the maximum duration of growth suppression.

There is almost no end to the creative things you can do with the various formulations of Embark and tank mixes that are available

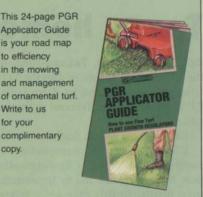
Many of these uses are detailed in our PGR Applicator Guide, which we want to send you. It is a road map to efficiency in the management of ornamental turf that can help you meet today's challenge when 85% of the commercial property owners and managers report that they will be seeking competitive bids on their landscape management contracts this season.

It also contains many management suggestions for using Embark, such as:

- How to guard against discoloration in PGR-
- How to be compensated for not moving the
- Recommended mowing practices for beauty enhancement of PGR-treated turf
- How to use Embark to hasten overseeding establishment or to coax the dominance of one grass species over another
- How to use Embark to dramatically reduce the need for trimming and/or edging
- How to use Embark to suppress seedhead development of Poa annua

FREE Applicator Guide

Applicator Guide is your road map to efficiency in the mowing and management of ornamental turf. Write to us for your complimentary





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FINE TURF REGULATOR



Pesticide regulation 'partnership' lauded

WASHINGTON—H.R. 3850 is the "Federal and State Pesticide Regulation Partnership Act of 1991." If passed, it would prohibit local regulation of pesticides.

Congressmen Charles Hatcher (D-Ga.) and Ron Marlenee (R-Mont.) introduced the bill to the U.S. House of Representatives on Nov. 22. By month's end, 28 other members of the House Agriculture Committee had also signed on.

The bill is supported by most segments of the green industry, specifically by The Coalition for Sensible Pesticide Policy, a group of almost 160 state, regional and national trade associations whose members support uniformity of pesticide regulation.

Notes Warren Stickle, president of the Chemical Producers and Distributors Association (CPDA):

"Cong. Hatcher and the other sponsors have demonstrated their commitment to

securing a uniform system of pesticide regulation which will insure that the American public continues to enjoy the benefits of tested and effective pesticide products.

"This legislation will offer protection against the crippling consequences which would ensue if a patchwork of confusing and often conflicting pesticide regulations is allowed to proliferate unchecked nationwide."

Stickle notes that H.R. 3850 addresses the June, 1991 Supreme Court decision in the case of Wisconsin Public Intervenor v. Mortier.

Allen James is executive director for Responsible Industry for a Sound Environment (RISE), which also supports H.R. 3850. He tells LM readers: "Congress has adjourned until Jan. 20, (so) you may wish to contact your congressman now to urge action on this bill."

A BRIEF HISTORY OF THE WISCONSIN CONTROVERSY

1981

Town of Casey, Wisc. prohibits pesticide use on public lands and highways

1984

Casey modifies its law to include private lands open to public use, and aerial applications

1988

U.S. Circuit Court of Appeals voids Casey law

1990

Circuit Court of Appeals decision upheld by Wisconsin Supreme Court

1991

APRIL: U.S. Supreme Court hears Wisconsin Public Intervenor vs. Mortier MAY: Green industry interests campaign in Washington, D.C. for practical pesticide regulations before a Senate subcommittee

JUNE: U.S. Supreme Court overturns Wisconsin decision; rules localities can regulate pesticides

Texas homeowners to hear ET reports

COLLEGE STATION, Texas—Tune into the TV weather report in certain Texas cities this summer and jot down today's ET as you review the liklihood of the next rain.

ET? What the devil is that?

ET is short for evapotranspiration, the combined loss of water by evaporation from the soil surface and by transpiration from plants. In this case we're talking about turfgrass plants.

Texas A&M turfgrass expert Dr. William Knoop thinks many homeowners will be glad to get a daily ET report because it will help them know when to water their lawns.

The daily ET report will be part of the Texas extension service's experimental Water Smart program.

"We feel most people overwater their lawns," says Knoop. "A lot of the folks in Texas have moved down from the North and don't understand bermudagrass. They tend to water it like Kentucky bluegrass."

The Water Smart program follows in the footsteps and complements Knoop's and the extension service's enormously successful "Don't Bag It" program to discourage homeowners from bagging and dumping grass clippings into community landfills.

In 1991, more than 100 Texas cities participated in "Don't Bag It." And, with grants exceeding \$100,000, Knoop says "there's not going to be a town in Texas that doesn't learn about 'Don't Bag It'."

Texas may be big, real big, but the state also has over 800 extension agents scattered among its 252 counties. Even so, educating the public about ET may not be as easy as convincing it that landfills are no place for grass and leaves.

ELSEWHERE

Students look at chemicals, page 52 Unwatered lawns result in fires, page 52

Group certifies hort pros, page 55

Too much tall fescue, page 55