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Inch for inch, and dollar for dollar, the Daihatsu (di-hot-sue) is in a class by itself. For lots of reasons.

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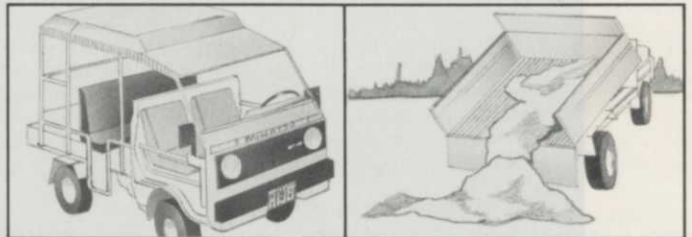
For instance, standard equipment includes everything from side mirrors, horn, and a full complement of visual instruments to seat belts, spare tire, and jack.

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not. It actually costs **less** than competition, which means it has no competition.

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Remember the name because you're going to hear a lot about it. Fylking Kentucky bluegrass lawn is something special. It forms a dense, thick turf, more disease and drought resistant. Greens up earlier, stays greener longer. Fylking can be cut as low as 3/4 inch, even 1/2 inch for home putting greens. Proven over many years of international certified testing. Ask your seed distributor for Fylking.

Fylking — the World's Fair grass.

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**KENTUCKY BLUEGRASS**

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Tsutomu Nishiyama, left, Shoju Ono and Bates Locke in Mizuno's mobile golf workshop.

The workshop is manned by Shoju Ono and Tsutomu Nishiyama, two Japanese craftsmen from the Custom Club Department of Mizuno's parent firm in Gifu, Japan. Bates Locke, a former head basketball coach, is the unit coordinator. The workshop is able to provide immediate on-site club repair and modification to the individual specifications of professional players. Specific services include repair of damaged heads, shafts and grips as well as such club modifications as loft, lie, weight distribution and shaft frequency. Replacement components are manufactured by Mizuno as well as other leading golf manufacturers.

Jack Curran, president of Mizuno Golf Company USA, said the mobile workshop, an exclusive service approved by PGA Tour headquarters, will concentrate on the men's tour but will also appear at selected stops on the Seniors Tour as well as the LPGA circuit.

"We believe this demonstration of Mizuno's craftsmanship is an excellent way to reinforce the company's commitment to serious golfers in this country," Curran said.

Mizuno Corporation, founded in 1906, is the largest golf company in the world. Last year, world-wide sales for all Mizuno's sporting goods exceeded \$500 million.

#### WATER

### Nebraska beefs up turf water use study

The University of Nebraska is making the study of water use by turf a major research thrust, Dr. Robert Shearman told the Nebraska Turf Conference in January.

Shearman, associate professor in

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turf at Nebraska, said five graduate students are now working on the subject. They are studying water use by turfgrass type, turf vigor under various amounts of irrigation, and water use efficiency.

Nebraska depends largely on wells for water and the state has created laws to prevent uncontrolled depletion of water tables.

The research will help turf managers in many other states with water limitations. Some states have even restricted the use of certain types of turfgrass, such as Kentucky bluegrass, because they are considered water wasters.

Shearman said turfgrasses use less than two percent of the water applied to them. Heat, excess nitrogen, mowing, traffic, and soil greatly effect water use by turfgrass plants.

Another speaker at the conference, Dr. Bill Meyer of Turf Seed Inc., Hubbard, OR, told the Nebraskans that the recently discovered endophytes in perennial ryegrass, seem to improve drought tolerance. Meyer said Dr. Reed Funk at Rutgers University, New Jersey, has shown increased drought tolerance in test plots.

### ASSOCIATIONS

#### Michigan goes on TV to tell about turf

Three videotape programs about turf were shown for the first time during the Michigan Turf Conference in Lansing in January. Gerald Faubel, president of the Michigan Turfgrass Foundation, said MTF provided a \$30,000 grant to Michigan State University to develop and shoot the tapes.

"Copies of the tape will be sent to extension agents throughout the state and to local television stations upon request to describe the work of the Michigan Turfgrass Foundation and the many opportunities for students in turf occupations," Faubel told *Weeds Trees & Turf*. The grant supports work by two graduate students at MSU. Shawn McBurney, assistant to Dr. Paul Reike, writes the scripts while Christian McMillan, a graduate student in telecommunications, does the shooting and editing.

"When extension agents make a presentation to high schools or clubs, they now can have professional support material in the form of videotape," McBurney said. "We are especially proud of this first in turf," Faubel said. The tapes are extremely well done and professional.

For more information contact Jerry Faubel, 4465 Gratiot, Saginaw, MI 48603.

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Ten years of careful research and testing has resulted in a ryegrass that's so dense, it gives you up to 40% more green grass, seed for seed, compared to other turf-type ryegrasses. What does it mean for you? Read on!

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*"... The Andersons has consistently proven to Dow how effectively our Dursban® insecticides can be beneficially combined with their fertilizer formulations for double-barreled professional performance.*

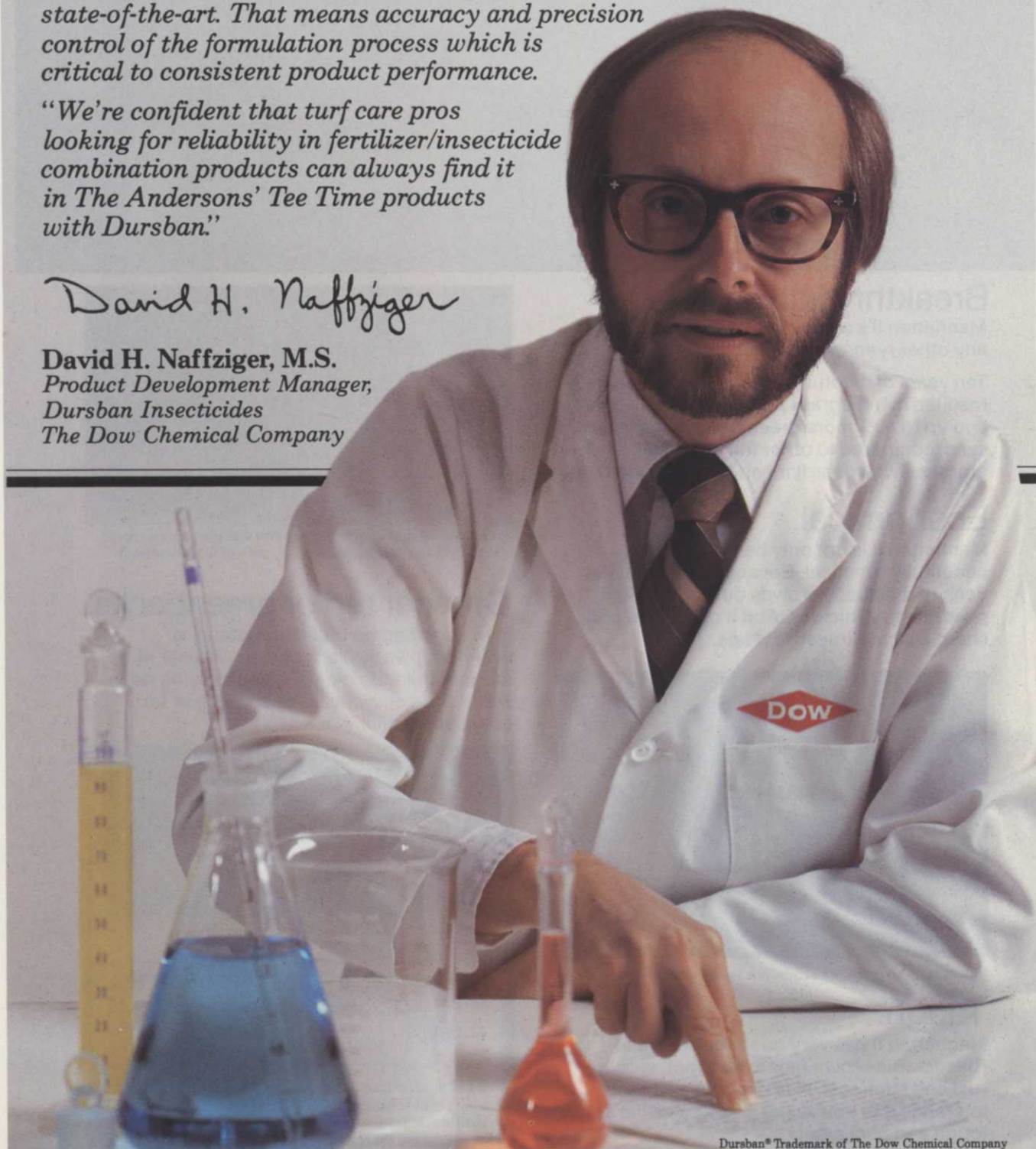
*"There's no question that Dursban insecticides are one of the most versatile, safe, and dependable insecticides which modern chemistry has produced. The Andersons expertly incorporate Dursban into Tee Time fertilizer/insecticide combinations that also give turf pros the added benefit of simultaneous turf feeding. Now, that's effective, efficient and economical.*

*"What's more, The Andersons' new production facilities are computerized and state-of-the-art. That means accuracy and precision control of the formulation process which is critical to consistent product performance.*

*"We're confident that turf care pros looking for reliability in fertilizer/insecticide combination products can always find it in The Andersons' Tee Time products with Dursban."*

*David H. Naffziger*

**David H. Naffziger, M.S.**  
*Product Development Manager,  
Dursban Insecticides  
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That's precisely why more and more investment-wise turf care experts bank on Tee Time and Dursban insecticides.

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greatest possible return on your turf care investment. You need the kind of product performance security you get from The Andersons.

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What's more, you also earn the added economies of single application products that feed *while simultaneously* controlling bugs.

You can bank on Tee Time 30-3-5 with Dursban—38-0-0 and 18-3-5 with Dursban—Tee Time triple-action 20-4-10 with Dursban and Balan® for feeding, weeding, and insect control—

and Tee Time straight formula Dursban 2.5G.

The Andersons purchases technical Dursban in large, economical bulk quantity. Then, it carefully and expertly incorporates it in its computerized state-of-the-art production facility. The result? Safe, consistent, accurate formulations—quality assured—and performance proven. Value to you that's right on the money.

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## Start the year in control

As April approaches, equipment should be in shape, clean-up and correction of winter damage complete, and preemergence weed control programs either in progress or ready to go. Furthermore, you are a step ahead of insects after dormant oil spraying and important trees and shrubs have been pruned and fertilized. You are ready for the busy season.

### Snow Mold Control

Northern landscape managers have been warned by turf pathologists that snow mold conditions are perfect. Snow has covered much of the North for more than three months after a cool, wet fall.

Bentgrasses and Kentucky bluegrasses are more susceptible to both gray and pink snow mold than red fescue.

Gray snow mold afflicts turfgrass under snow cover. It appears in the spring as circular gray to straw-colored spots, six to twelve inches in diameter. When the snow melts the damage is already done. To have any effect, fungicide applications must be made before snowfall for gray snow mold.

Pink snow mold can occur without snow cover, just as long as conditions are cool and wet. Symptoms are reddish patches from one to eight inches wide.

Michigan State University Pathologist Dr. Joe Vargas warns that snow mold damage may seem small, but year after year it takes a cumulative toll and helps *Poa annua* encroach on bentgrass. "All you can do in the spring is try to warm up and dry out the soil surface and give the turf a shot of nitrogen to help it recover," says Vargas.

A preventative program of fungicide applications should be seriously considered for this fall if you had a problem this winter. There is growing evidence that spring diseases contribute to the severity of summer turf diseases. Also, research at Iowa State University has shown considerable leaf spot activity in the fall. Iowa State Pathologist Clinton Hodges recommends extending disease control programs into the winter.

Finally, there are indications fungicide rates can be lowered after the first few years of application with the same degree of control.

### Turf Fertilization

Cool-season turfgrass plants shift their biological emphasis from root growth and food storage to foliage growth in the spring. Carbohydrates stored in the roots during winter are utilized in the spring to produce foliage. In the spring, turf is also recovering from damage inflicted over the winter.

Warm-season turfgrasses concentrate on root growth during late spring and summer months. They must go through the fall, winter dormancy, and

spring transition before they resupply the carbohydrates in their roots. Texas A&M Agronomist Dr. James Beard has shown dieback of the roots of warm-season grasses following spring green up. By spring, warm-season turf is out of gas.

Nitrogen is definitely a necessity for turf health in the spring. However, some agronomists warn turf managers not to overdo nitrogen applications in the spring since excessive stimulation of foliage growth may deplete carbohydrate reserves and reduce the plant's ability to recovery from spring and summer stresses.

If you use quick-release fertilizers, apply the recommended amount of nitrogen in four parts throughout the year rather than dumping the entire amount onto the turf in the early spring. Slow-release nitrogen sources help prevent overly-lush turf since they release the nitrogen slowly over a two- to four-month period.

More turf managers are applying fertilizer in late fall to assist cool-season grasses as they store carbohydrates, and in the late spring and summer to help warm-season grasses do the same.

### Plan Annual Displays

A complete landscape includes annual flowers. The impact of flowers goes a long way to indicate professionalism in landscaping. Commercial landscapes without annual and/or perennial flowers are incomplete.

The primary advantage of planning now for annual displays is you can contract with a local greenhouse and save a significant amount of money and get the types of plants you need. Waiting until the plants show up at local garden centers forces you to pay the going price and take what they have.

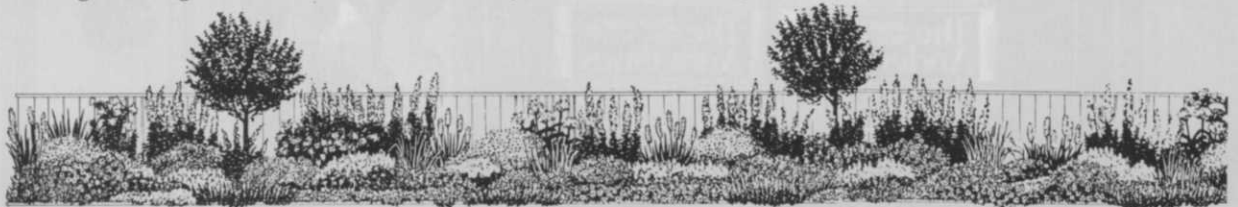
If flower beds are part of your current landscape, then now is the time to fine-tune the display to improved varieties or ones needing less maintenance. See the article by Ann Reilly in this issue for types of annuals and their proper location and use.

### Weed Control

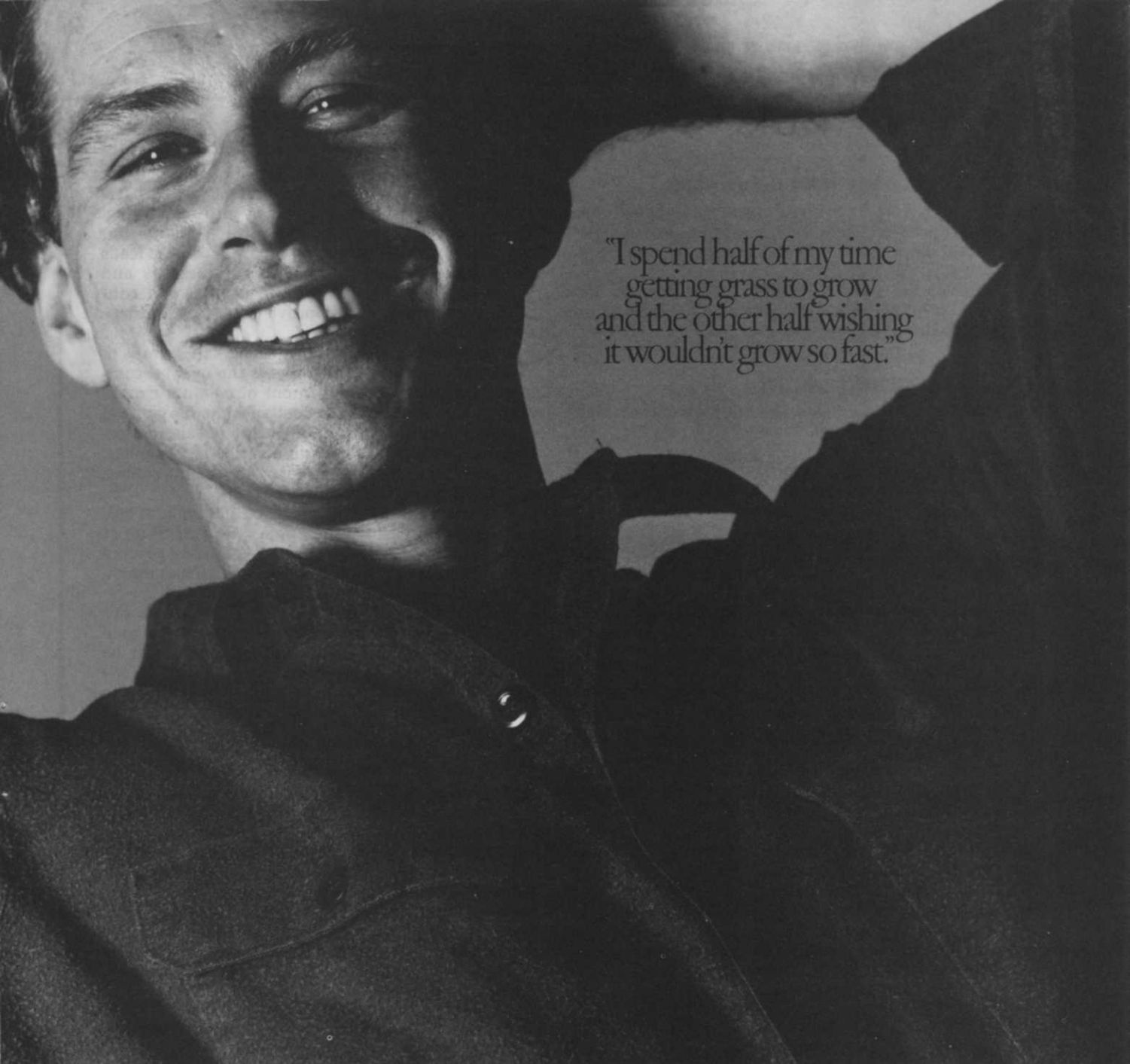
Keep in mind a second application of preemergence turf herbicide may be necessary. Postemergence turf herbicides should be selected and ordered.

Weed control in plant beds should start soon with heavy dependence on preemergence herbicides such as Ronstar, Devrinol, and Treflan. These save hours of hand labor later in the year.

Plant beds with serious weed problems last year should be fumigated with either Dowfume or Vapam. Be sure to protect or remove desirable plants. Moving plants now is easier than later as far as recovery.







"I spend half of my time  
getting grass to grow  
and the other half wishing  
it wouldn't grow so fast."

A turf manager's world is held together by an endless string of paradoxes.

One day he puts up a fence to protect his turf. The next, he notices greener grass on the other side.

When skies are sunny, he prays for rain. Then three days into a gentle soaker, he wishes it'd clear up so he could get some work done.

Every day he learns something new about the world of growing fine turf. And every day he's baffled when what he knows ought to work doesn't.

But these are the little reminders that it's all worthwhile. Because more often than not, it all goes right.

He pits his knowledge about what ought to

happen against the unpredictable odds of the natural world. And he wins.

The grass greens up on his side of the fence. The rain stops just in time. And what he knows ought to work performs exactly as he'd imagined it would.

In the final analysis, he hopes nobody ever develops the perfect grass — turf that grows rich green just so high and then stops.

After all, what fun would that be?

*Pennfine Perennial Ryegrass covers more ground than any other turfgrass variety in the world. This ad pays tribute to the people who've sown that fifty million pounds of certified Pennfine seed.*

# PROBLEM SOLVERS

by Balakrishna Rao, Ph.D., and Thomas P. Mog, Ph.D.

## Supplier for fish emulsion

**Problem:** Are you aware of any supplier of fish emulsion? This is occasionally specified for landscape use but no suppliers are given. (Virginia)

**Solution:** H.J. Baker & Bros. Inc., 100 E. 42nd St., New York, is listed in the Farm Chemicals Handbook as a distributor of fish meal and scraps.

## Black locust blight

**Problem:** What caused the 1983 blight on black locust? (West Virginia)

**Solution:** I am not aware of a serious disease, i.e. blight, affecting black locust in your state this year. I have read where damage caused by the locust leafminer has been pretty dramatic in parts of West Virginia. The young (larvae) of this insect mine or eat the middle out of locust leaves. They don't eat everything but leave the upper and lower layers (epidermis) behind; like someone eating the meat out of a sandwich and leaving the bread behind. The leaves remain on the tree and the tree doesn't look too bad until it gets hot and dry. Usually around August the mined leaves dry up and turn brown. This apparent, sudden browning of the entire tree could be mistaken for a blight or wilt disease.

Check the fallen leaves. Break or cut some apart. If there is nothing inside, then the miner was the culprit. If you are not certain as to what I mean, just look at some leaves from a healthy tree and compare them with your "blighted" leaves.

Leafminer attack may make the trees look like they are dead, but unless something else is involved, they should recover. Losing all or nearly all of its leaves before autumn weakens the tree. Fertilization will help it recover. Locust leafminer passes the winter hidden in the dead leaves and litter. Raking and destroying leaves and other debris from beneath the tree eliminates some insects. Depending on how many miners make it through the winter, you may want to spray your trees with an insecticide in June-July. For more exact timing and what chemical to use, contact the West Virginia Department of Agriculture.

## Saving trees from salt damage

**Problem:** The trees we have along the sidewalks on campus catch the run-off containing rock salt. This is causing problems. We heard that gypsum neutralizes salt. How much should we use? (Ohio)

**Solution:** That depends on how "salty" the soil is or gets. You should first have the soil tested for soluble salts and pH. In general, turfgrasses and ornamentals become stressed at salt levels greater than 1500 ppm. If the soil is both sodic (high sodium) and acidic (low pH) and you want to "de-salt" and lower pH, then lime can be used. For alkaline soils and for acid soils where a pH change is not desirable, use gypsum. Both lime and gypsum contain calcium. Salt, sodium chloride, is removed or "neutralized" by exchanging

calcium for some of the sodium (ions). Once the sodium has been released from the soil particles, it is mobile and can be leached away by rain or watering.

Excess salt is not only harmful to plants but degrades soil structure. A high sodium content leads to decreased water movement, permeability and aeration. Lime and gypsum are used as soil conditioners because they improve structure, drainage and facilitate leaching.

For your purposes, neutralizing salt, a rate of 50-75 pounds/1,000 square feet is the usual recommendation. Because movement of calcium can be slow, the treatment is not effective when the gypsum or lime is applied during the period of salt application and worked into a depth of six to eight inches. The amount of calcium sulfate in products sold as gypsum can vary.

The aforementioned rate is for 100 percent calcium sulfate and for lime applied as quicklime or limestone. If the gypsum you use is only 50 percent calcium sulfate then you should use twice as much, i.e. 100 to 150 pounds/1,000 square feet.

Leaching alone is beneficial if the water is salt (sodium) free and if the drainage is good. With good drainage and heavy watering, salt levels can be reduced as much as 50 percent. It takes good drainage and watering to get the most benefit from the soil conditioners, too.

## Tilling wakes up dormant weeds

**Problem:** This fall I tilled an established, weed-free lawn and seeded with certified seed. Now there are lots of weeds. Where did they come from since they were not evident before? (Missouri)

**Solution:** Studies have shown various weed seeds can remain viable in the soil for several years and these may be triggered to germinate when the soil is disturbed and brought to the surface.

Mow the lawn at least two to three times before applying herbicides.



Balakrishna Rao is plant pathologist and Thomas Mog is pest management specialist for Davey Tree Expert Co., Kent, OH.

Questions should be mailed to Problem Solver, Weeds Trees & Turf, 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Please allow 2-3 months for an answer to appear in the magazine.