

Lawn care season starts slow but demand still strong

At any given time in the United States, there are droughts and floods, and regions that enjoy blue skies and scattered soft warm showers.

There are communities that are bursting with new industry and opportunity, but many more whose economies are just chugging along.

This country is so big that no single climate or economic condition can contain it. In a sense, that's true for the green industry too.

While the challenges that we face in the green industry are often similar, our language is filled with regional concerns and observations.

For instance, snow storms pounded the eastern seaboard again and again this past winter, and missed much of the north. As a result, companies offering snow removal were busier in Washington D.C. and Baltimore than, say, in Chicago and Detroit.

And when drought gripped the Southwest and the Southern Plains early in 1996, states surrounding the Great Lakes sloshed their way through a damp, dreary spring.

"I think that it rained 62 of 70 days," said John Cruse, Jr., Easy Lawn, who spoke to us in mid June. "The problem



was that we couldn't get done what we had to do."

Cruse in southwest Ohio said that customer demand in 1996 seemed high. "We felt like it was going to be a good year, and we still think it will be."

It wasn't until the first week in June that Brent Flory's Freedom Lawns, near Lafayette, Ind., caught up.

"This spring about wore us out. But, things are really going good right now," said Flory.

"I suspected that going into the spring we were going to have a lot of calls. We were unseasonably hot last summer, and this past winter we didn't get a lot of moisture.

"There were a lot of people whose lawns were just destroyed. But with the amount of rain we've gotten this spring, a lot of these lawns are recovering quite well," added Flory.

Linda Marsh of Classy Grass, Inc., said that demand for her company's services in

Small and large markets were effected by the changeable spring weather, causing companies to play catch up and do their best to maintain efficiency.

by RON HALL / Senior editor

and around Peoria, Ill., started strong. "We just need the weather to cooperate." She said her lawn care company suffered 13 rain days in May.

Eric Fink's Golden Valley Lawn Service in Clinton, Mo., battled through the wet spring but Eric, himself, got laid up in an auto accident. He said he will have to take it easy through the summer. His three employees should be busy all summer, said Fink.

"In our small market we have to do everything we can to get and keep customers, and we do," said Fink. "If that means we have to help clean somebody's gutter, or sweep a walk, we will. We're full service. That's what our customers want."

A very dry winter, and a cold spring, topped by an April snowstorm, pushed everything back several weeks in the Abilene, Tex., market, said Dan Haught of Master-Scapes. Finally several soaking rains in early June replenished ground moisture there.

"We're still about half of what we should be," added Rich Comfort, Genesis Lawn Care, Austin, Tex. "It seemed like we went from winter right to summer."

Comfort added that "everything seemed to be on a time delay. Fortunately, everything's fallen into place, and we're on schedule. The season looks like it's shaping up pretty nice."

Jim MacHahon, Coronis Landscaping, Nashua, NH, said that New England's winter and spring weather was "crazy."

Winter gave one huge blast with a mid-April snowstorm that stole a week of production from Coronis Landscaping and added to the region's record-breaking total.

"But, we've been busy, busy, busy. Our customers kept hearing about the record snowfalls and about this being the worst winter ever, and they're pretty understanding," said MacHahon.

Technology: People and Machines

by CHARLES CLARK / Customer Information Service Manager, DowElanco

While there's no doubt that computer technology is rapidly changing the way we do business, it's important to add that hardware, software, megabytes, networks and servers provide only the medium for this revolution. The tools that enable today's almost-instantaneous communication and data retrieval are still only as good as the minds that use them.

At DowElanco, we're currently designing an integrated approach to using these tools that will ultimately benefit all of the people we serve, from the scientist in the laboratory to the customer in the field. This sounds quite lofty until one considers all of the new questions and real world challenges that arise.

As manager of DowElanco's Customer Information Service, I lead an interdisciplinary team of seven company experts. Together, we are evaluating potential uses of the Internet for our many clients. This work is urgent. Our concern is connecting with important audiences and providing better service than ever.

We are committed to serving the information needs of our clientele, and understanding how to harness current and emerging technologies. How can we best meet those goals through electronic communication? To answer that, our team has been looking hard at the material that's already "out there" in cyberspace. We're also looking inward to evaluate our current customer response systems and how these can be streamlined.

Already, we are implementing a



sales force automation plan based on laptop computers. This system will enable our sales representative to access technical or sales information to respond immediately to customer questions. But that's just the beginning.

All of our analysis leads to the Internet, a global computer network.

This "Net" is revolutionizing the way information is managed. For the first time, an individual can readily access information from sources all over the world. That same capability allows an individual to communicate with all other users "linked" on "the Net."

This new network of information will accelerate change in our core business processes.

For example, the Internet reinvents the entire notion of customer service. First, information is more immediately available than ever—one second after the last keystroke, to be precise.

Second, individuals can access that

timely information in greater numbers than was previously possible.

Third, the interactivity of the medium will take what was once a "mass message" and customize it to individuals. The customer is now in charge of his or her information search.

It's too early to gauge the total impact of all this on customer service. The Internet is still in its infancy and we've merely scratched the surface of its potential. But I think it's safe to say that we'll know even more about our customers and their individual situations. And they will know more, expect more and get more from their supplier partners.

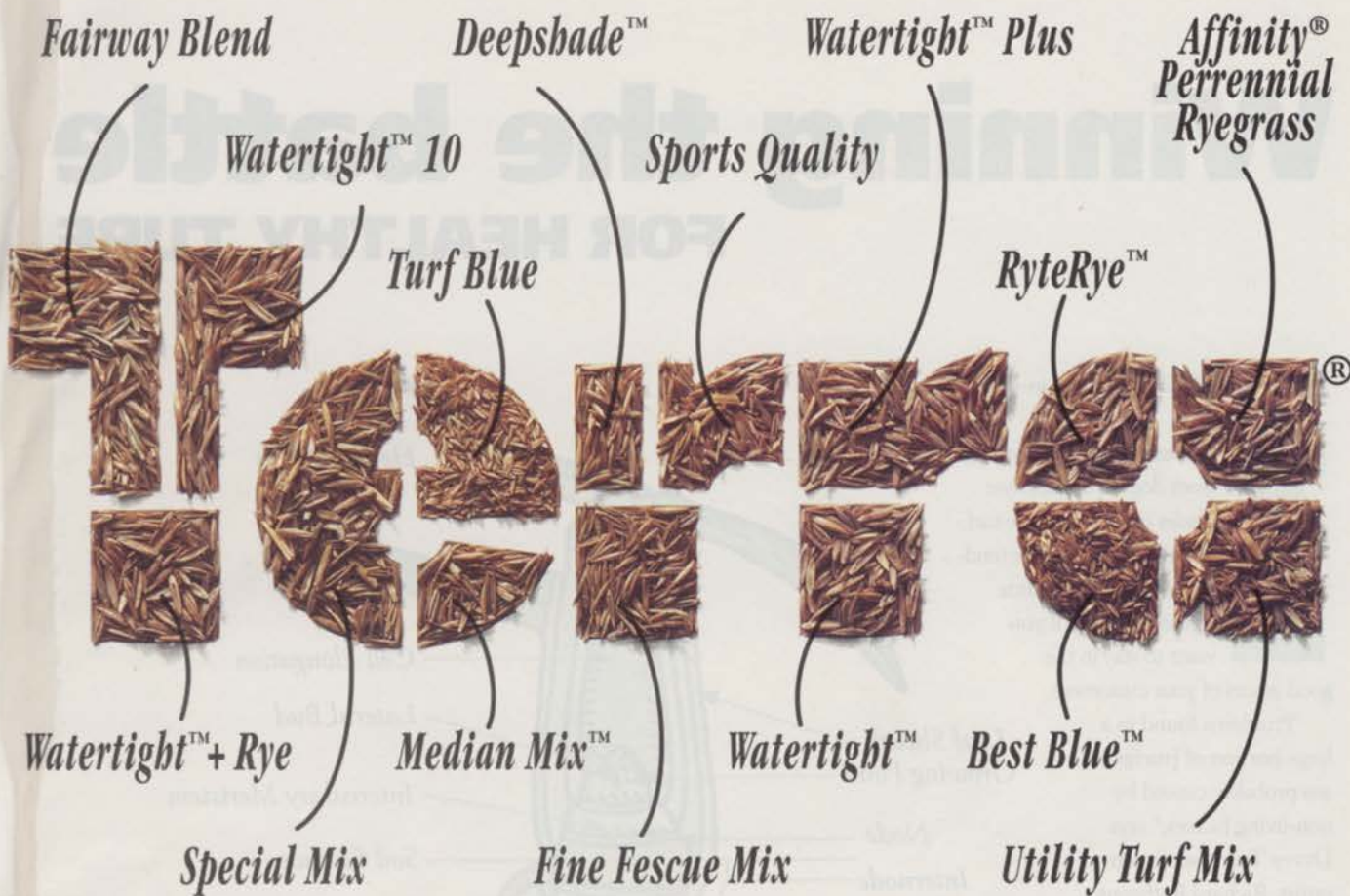
As a tool, the Internet holds great promise for bringing all of us in the lawn care and landscape industry "closer together" in real time. But even more critical is our responsibility to communicate with each other and the commitment to do it well. And that can and will happen as we both learn to operate in the new world of connectivity.

I invite your suggestions and opinions. What would be useful to you?

Respond by e-mailing me at acclark@DowElanco.com. Fax me at (800) 905-7326.

Or, even do it the time-honored way. Write a letter to me c/o DowElanco, Customer Information Service, 9330 Zionsville Road, Building 308/CA, Indianapolis, IN 46268-1054.

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Winning the battle FOR HEALTHY TURF

by JERRY ROCHE / Editor-in-Chief

It's summer, and everything from dogs to dull mower blades can damage the turf you're supposed to be tending. This is not the time to bail out—not if you want to stay in the good graces of your customers.

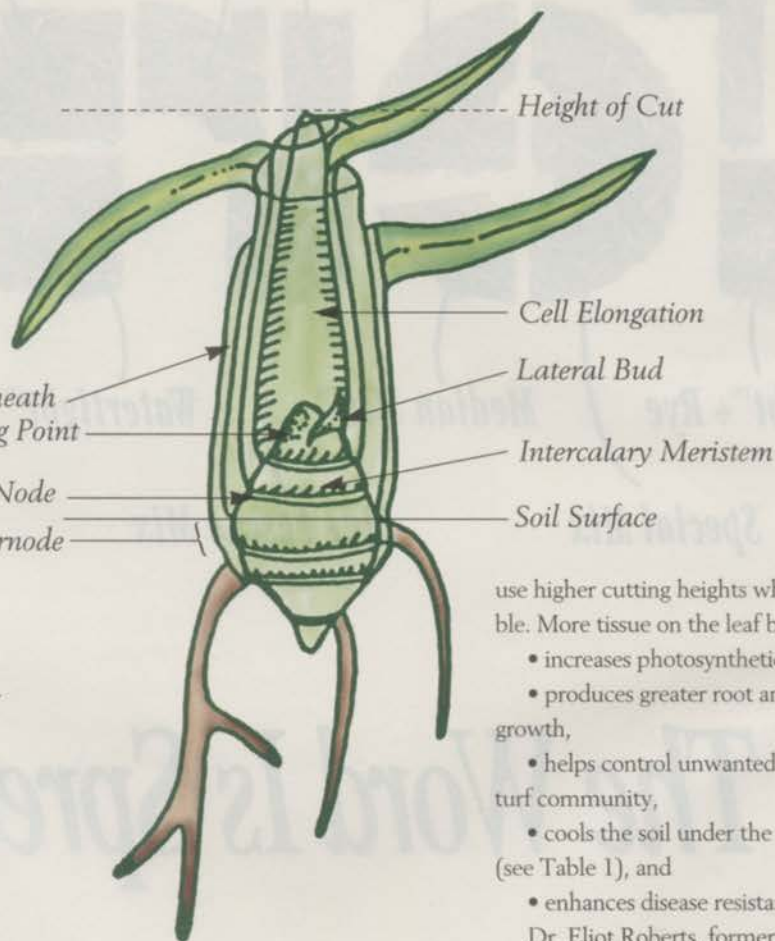
"Problems found in a large portion of [turfgrass] are probably caused by non-living factors," says Davey Tree's senior agronomist, Richard Rathgens.

Certainly, with the onset of hotter, drier weather, mowing practices could be the difference between lush, green vegetation and brown, drought-stricken and/or diseased turfgrass.

"Mowing increases turf quality through better tillering, providing more shoots per unit of ground area," explains Dr. R.W. Sheard of the University of Guelph in Canada. "On the other hand, mowing decreases root growth due to the removal of leaf blades which in turn reduces photosynthesis."

Sheard suggests that professional mowers know about the "meristematic region" of the turfgrass plant—that section where active cell division occurs.

In dicots (many weeds), the growing point is located at the tip of the plant so that the youngest leaves are at the top of the stem. In monocots (turfgrasses), the growing point "seldom moves above the soil surface, except where seedhead formation occurs," Sheard says. So when you're



cutting lawns, you're actually mowing the youngest part of any weeds present and the oldest part of the turfgrass.

Repeatedly removing the top of a grass plant (regular mowing) disrupts the normal procedure for plant development. However, turf-type grasses have, over time, developed a certain tolerance to mowing, much like pasture-type grasses developed tolerance to repeated close grazing, Sheard notes.

To maintain healthy turf, you should

use higher cutting heights whenever possible. More tissue on the leaf blades:

- increases photosynthetic activity,
- produces greater root and rhizome growth,
- helps control unwanted weeds in the turf community,
- cools the soil under the turf canopy (see Table 1), and
- enhances disease resistance.

Dr. Eliot Roberts, former executive director of the Lawn Institute, once calculated that each $\frac{1}{8}$ -inch increase in cutting height of bluegrass adds 375 sq. ft. of leaf surface per 1000 sq. ft. of turf surface.

Use the "One-Third Rule" of mowing: never remove more than one-third of the leaf blade. Because adverse weather may interrupt your mowing schedule, plan it by the grass's growth rate rather than by the day of the week, as much as possible. (See Table 2 for optimum cutting heights.)

"You have to remember that mowing is an injury in progress," says Dr. Kenneth

Diesburg of Southern Illinois University. "You're cutting live tissues. If you take off only a third, it's a mild enough shock that the grass can rebuild these tissues fairly easily. But if you take off too much, the healing process drains energy reserves in the roots and stems, which weakens the plant."

Also, keep mower blades sharp. Turf plants may appear gray and turn brown or straw-colored one to two days after they are mowed with a dull blade. If the blade isn't sharp, it shreds the end of the grass blade rather than making a clean cut. Shredded leaf tips lose water easily, and will turn brown. They are also more susceptible to diseases. Wounded grass blades take more time to recover because of their large surface area.



Thirsty grass

Drought stress usually occurs in the middle of the growing season. You can tell drought-stressed grass by a blue cast that eventually turns brown, curled and folded leaf blades, and footprints that stay in the grass.

Water is critical, even without fertilizer. And the more lush the carpet, the more water it needs. Water not only moves nutrients through the roots, but it keeps soil cool enough to keep the turf growing.

Most turfgrasses need at least one inch of water per week, generally, to a depth of 6 to 8 inches—either rain from the heavens or potable water from sprinkler or irrigation systems. And remember, when it comes to

water, skimping hurts grass far more than starving it.

"[Dormancy] is an adaptive mechanism that all plants have," says Diesburg, "though it's triggered more quickly in grass because the root system is shallow. Dormant grass will be brown, but it won't be dead."

Bow-wow

Soluble salts in a dog's urine may cause spots on lawns. The damaged spots are generally round, and vary from several inches to about two feet in diameter, according to a news release from Davey Tree. The circular areas have a brown interior and dark green exterior.

A partial answer—if you can't protect the grass from dogs—is to water it frequently. Watering helps move the salt below the lawn's roots and helps the lawn look more attractive. □

TABLE 1. Mowing height and soil temperature

Height of cut (inches)	Soil temp.* (°F at 1 in.)
0.75	93
1.00	90
1.50	83

Note: air temperature five feet above turf was 98°F. at time of test; turf surface temperature was 109°F.

TABLE 2. Suggested mowing heights (in inches)

Type	Early summer	Mid-summer
Bentgrasses	1/2 to 1	3/4 to 1 1/2
Bluegrasses	1 1/2 to 2	2 to 2 1/2
Fescues	2 1/2	3 1/2
Ryegrasses	2 to 3	2
Bahiagrass	2 to 3	2 to 3
Bermudagrass	1 to 2	2
Centipedegrass	1 to 2	2
St. Augustinegrass	2 1/2	3 1/2
Zoysiagrass	3/4 to 1	2

SOURCE: DR. R.W. SHEARD

SOURCE: DAVEY TREE EXPERT CO.

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A little mulch is all you need

Mulch is an organic or inorganic material that is spread on the soil around and under plants.

All mulches do three basic things: hold soil temperature steady, reduce moisture loss, and help reduce weed growth. But mulch does these things in different ways. Here's a look at what's available, courtesy of Ohio State University:

Peat moss

Generally available and ideal for mulching evergreens and other plants that grow best in acidic soil. It remains effective for one or two years, depending on the amount applied.

Hardwood bark mulch

Shredded hardwood, such as oak, has a nice dark color many people like. Like

other organic mulches, it starts decomposing and becomes organic to feed the roots of plants. Some fungi can form on the mulch, however, if it is left alone. A simple way to prevent this is to freshen your mulch about once a month.

Pine or cypress bark mulch

If you can't or don't want to spend time maintaining your mulch, but still want an organic choice, you might consider a slower decomposing mulch such as pine or cypress. These are not as good for the root-zone and don't have the dark color, however, they do work well as a cover-up, such as when flanking your sidewalk up to your front door.

Straw

Use straw for winter protection and as a summer mulch in fruit and vegetable plant-

ing. It may carry weed seeds, and it is flammable, so use straw away from areas where cigarettes may be thrown. A couple of other hints: don't use hay, and wait until vegetables have started to grow before you mulch to ensure the ground is warm enough for the plants.

Stones

Rocks and pebbles do have their place in mulching, usually in small amounts for color contrast or to highlight a certain area.

Two to three inches of mulch is all you need. Too much will interfere with the root system's oxygen supply. To prevent insect infestation, don't spread mulch right up to your house. Make sure there is about six to eight inches of bare dirt around the foundation. **LM**

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Ignore nutsedge at your own risk

This tenacious perennial weed spreads quickly through turfgrass if left untreated.

Nutsedge is an especially troublesome turfgrass weed because of its varied methods of underground propagation and competitive growth habit, according to Dr. Nelroy Jackson.

"Nutsedge produces many underground propagules—rhizomes, basal buds or corms and tubers. These ensure its survival from season to season," says Jackson.

Nutsedge does produce seeds to propagate, but germination rates are low. Tubers—also called "nuts" or "nutlets"—sprout from as deep as 15 inches within the soil, which makes turning the soil an ineffective preventive measure.

How tubers grow

Tubers begin forming four to six weeks after nutsedge emergence. They sprout in warm soil and adequate moisture. As the tubers grow, rhizomes reach vertically from the tuber buds, as roots spread horizontally. Rhizome tips are strong and sharp and can penetrate hard surfaces and mulches.

When the tip of the rhizome reaches sunlight under optimum day/night temperature fluctuations, a basal bud forms below the soil surface. This basal bud contains meristems for leaves, rhizomes, roots and the flower structure.

Several weeks after the primary shoot emerges, secondary rhizomes grow horizontally away from the basal bud. These rhizomes turn upward and create new plants, or secondary basal buds.

Under good growing conditions this process can continue indefinitely and cause massive nutsedge infestations, says Jackson, technical manager for Monsanto.

"A single yellow nutsedge plant is capable of producing 1000 tubers per square meter in a single growing season," says Jackson. "Undisturbed, each one of those tubers can create a dense stand of shoots covering several square meters in just one growing season."

Tubers continue to form in dry weather or "short days," when actual vegetative growth might be slowed, and also remain viable in the soil for two to four years.

Under optimum growing conditions, purple nutsedge is more vigorous and competitive, according to Dr. Jackson.

"In southern and western states, both nutsedges can coexist," Jackson explains. "On unirrigated areas, yellow nutsedge is usually found on low, moist areas, while purple nutsedge prefers well-drained soils."

To control purple and yellow nutsedge, Manage herbicide is available from Monsanto. Other products to manage nutsedge include MSMA, Image and Basagran. □

The wide leaves and fast growth habit of nutsedge make it stand out in turfgrass.



Jackson: Yellow nutsedge tubers cover several square meters in one growing season.

Yellow vs. purple: the differences

Tubers

Distinctive tubers are the most prominent underground feature of nutsedge, and the best way to distinguish between yellow and purple varieties.

Yellow nutsedge tubers are produced on the ends of the rhizomes. The rhizomes are easily broken. Tubers are smooth and brown, and have a pleasant almond flavor.

Purple nutsedge tubers are often produced along the entire length of the rhizome, and form a "tuber chain."

These tubers are generally wiry and difficult to break.

They are covered with coarse, dark, reddish scales and have an unpleasant, bitter flavor.

Stems

"Nutsedges have triangular-shaped stems, while grasses usually have hollow, rounded stems," says Jackson.

Purple nutsedge is confined to soils that stay warmer than 30 degrees F.

Yellow nutsedge tubers can tolerate colder soil temperatures and dry weather better.

Soil test reveals turf nutrition needs

by BILL KNOOP, Ph.D. /
Contributing Technical Editor

Plants require varying amounts of many different nutrients. Nitrogen, potassium and phosphorus, for example, are usually needed at higher rates than micro-nutrients such as iron, zinc or copper.

Table 1 shows the source of turfgrass nutrients.

Not all soils are capable of furnishing the same nutrients or the same amount of a given nutrient, so when managing a landscape, it makes sense to take advantage of the nutrient levels already present in the soil.

If a plant needs more of a nutrient than the soil can furnish, then a fertilizer containing that nutrient must be used. It is always desirable to make sure the landscape has an optimum supply of all the nutrients it needs. This way, all the plants will perform to their best ability.

The best way to monitor the nutrient status of any landscape is through periodic soil testing, a valuable tool in developing the landscape fertility program. It makes little sense, economically and environmentally, to apply unneeded nutrients to the landscape.

Research has estab-

lished or identified the amounts of each nutrient that must be available in the soil for good plant growth (Table 2).

Is soil ready for growth season?

The best time of the year to gather soil for testing is during the landscape's dormant period. This may be in late fall or during the winter months when the fertility status of the soil is fairly stable. Soil nutrient levels constantly change during the growing season. Soil organisms as well as plants use up nutrients. The breakdown of organic matter and soil minerals continuously apply certain nutrients. A heavy rain may leach nutrients down through the rootzone. Taking a soil test too soon after a fertilizer application may produce a false result. The dormant period is the best time to test.

Soil submitted for testing should come from around the root system of the plant. The sample should be free of roots. Do not sample too deeply. Plant roots are typically only a few inches deep.

Soil may vary

The soil found in the front yard of a home may be different than a sample taken from the back yard. Soil samples may also vary from one golf course fairway to another. The larger the area, the greater the chance that the soil may vary, but the only way to know for sure is by taking several "sub-samples."

In a home lawn, take three or four sub-samples from the front and back yards. Put all of them in a container and mix thoroughly. Take the final sample for the analysis from the mixture. This way, the lab results and any subsequent recommendations

Table 1. PRIMARY PLANT NUTRIENTS AND THEIR SOURCE

Macro-nutrients	Primary source
Nitrogen (N)	Fertilizer & soil
Potassium (K)	Fertilizer & soil
Phosphorus	Fertilizer & soil
Sulfur (S)	Soil
Magnesium	Soil
Calcium (Ca)	Soil
<hr/>	
Micro-nutrients	Source
Iron (Fe)	Soil
Manganese (Mn)	Soil
Zinc (Zn)	Soil
Copper (Cu)	Soil
Molybdenum	Soil
Boron (B)	Soil
<hr/>	
Others	Sources
Oxygen (O)	Water, carbon dioxide
Hydrogen (H)	Water
Carbon (C)	Carbon dioxide