

Brooks redefines tasks

ATLANTA, GA—James R. Brooks is refocusing his efforts with the Professional Lawn Care Association.

At a recent meeting of the PLCAA board, Brooks asked that some of his administrative tasks be shifted to others within the PLCAA so that he can work more closely with members, and concentrate on growing the Green Industry Expo.

"Jim Brooks realizes he can't do everything but he wants to do those things that will be in the best interests of the industry," he told *Lawn Care Industry*.

Among those goals, Brooks said:

- building a stronger relationship between PLCAA and smaller member companies;
- continuing to build a strong membership base;
- spearheading the Green Industry Expo into the lawn and landscape industry's top trade show.

Brooks, involved with PLCAA since 1983, said he can best serve the PLCAA by getting out of the office and meeting industry members face to face, and concentrating on the show.

LCI



Brooks more personal contact

LCOs closely monitoring results of biostimulants

Biostimulants are being used by a growing number of LCOs to address environmental concerns and to capitalize on the growing customer demand for lawn care programs that incorporate natural or organic products.

According to university research and commercial use trials, biostimulants address a number of environmental considerations, including reduction of nitrate levels in soil and groundwater.

Agronomic benefits of biostimulant use include increased stress resistance in turf, faster sod installation, improved establishment of turf when overseeding, and reduction of losses when transplanting.

Winchester, VA, LCO Allen Rogers operates ProLawn, a regional company providing lawn care services in a five-county area of the northern Shenandoah Valley. In 1990, Rogers will be applying a liquid biostimulant (Roots® Root Growth Enhancer)

See **MONITOR** on Page 9

LAWN CARE INDUSTRY

Serving the needs of the professional lawn care operator

VOLUME 14 NUMBER 6

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JUNE 1990

Stress positive

Again IPM!

BY **RON HALL**
editor

IPM is an acronym whose meaning, for many professional lawn care providers, is about as hard to nail down as a rubber spike.

There's a reason for that: there's been too little research on "integrated pest management" on home lawns. Take heart though, the concept of IPM isn't particularly difficult, it's positive and it will probably become a bigger part of the industry's language.

What's particularly heartening about IPM is that many LCOs already use "integrated pest management" techniques even though they may not have what they can legitimately call a "total" IPM program. Dishearteningly, many LCOs don't take the extra step to tell anybody, not even their customers, about the environmentally sound care they're giving client's lawns.

Or maybe they're not giving

See **IPM** on Page 18



Attractive lawn grasses prized in Colorado communities; ecological feelings strong.

Denver-area public warms to premium lawn care services

BY **RON HALL**
editor

Anti-pesticide sentiment runs so strong in the university town of Boulder, CO, the story goes, that LCOs slip into town about dawn Sunday mornings, treat the lawns, then scam be-

fore the collegians (and their collective social conscience) arise.

Boulder, sometimes wryly referred to as *The Republic of Boulder*, is driven by social and ecological issues (sometimes esoteric), and some of these same concerns, less visible but real, simmer in nearby Denver. Professional lawn care providers are adapting their programs there accordingly.

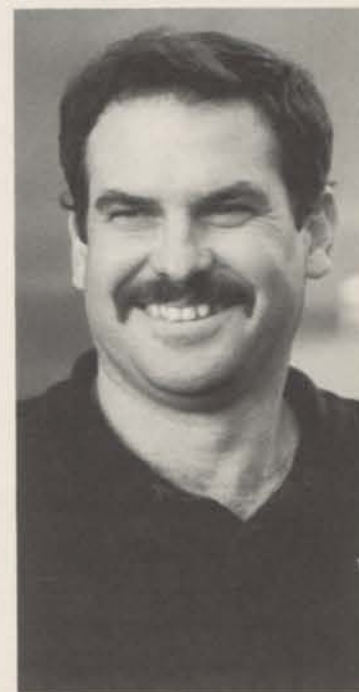
But that's just part of the Denver market picture.

The larger part: homeowners on the Front Range of the Rocky Mountains,

seemingly, are beginning to buy into the concept of premium lawn services. It's hardly a stampede but it's growing.

"Four or five years ago we made a decision to implement IPM (integrated pest management) practices in our company," says Bill Aitken, general manager of Wilhelm Tree and Lawn Care. "We knew it would challenge us, and it did. It was difficult to convince a customer that we were going to charge them a fee to come out and maybe just inspect their property."

See **DENVER** on Page 8



Bob Priest finding clients with personalized service

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Tall ones.



Short ones.



Denver-area public works to premium lawn care services

Public works departments in the Denver area are beginning to pay for premium lawn care services. It's a move that's been a long time in the making, but it's finally happening.

"For a long time, we've been a standard in lawn care," says a spokesman for the city of Denver. "But now we're taking it to the next level. We're paying for premium services that will keep our lawns looking their best all year long."

The city of Denver is not alone. Other public works departments in the area are also beginning to pay for premium services. "We're seeing a trend across the board," says a spokesman for the city of Aurora. "We're paying for premium services that will keep our lawns looking their best all year long."

But the real reason for the move is the fact that public works departments are now paying for premium services. It's a move that's been a long time in the making, but it's finally happening.

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Again!

It's not an exaggeration to say that the lawn care industry is in a state of flux. The industry is facing a number of challenges, including a shortage of labor, rising costs of materials, and a changing climate. But despite these challenges, the industry is still growing, and it's doing so in a way that's sustainable and profitable.

One of the ways that the industry is growing is by offering premium services. Premium services are services that go beyond the basics of lawn care. They include services like aeration, dethatching, and fertilization. These services are more expensive than basic lawn care, but they also provide more value to the customer. As a result, many homeowners are willing to pay for premium services, and this is driving the growth of the industry.

Another way that the industry is growing is by offering more convenient services. Many homeowners are busy, and they don't have time to mow their lawns or take care of other lawn care tasks. As a result, many homeowners are turning to lawn care companies for help. These companies are offering more convenient services, like weekly or bi-weekly lawn care visits. This is also driving the growth of the industry.

Finally, the industry is growing because of the changing climate. The climate in many parts of the country is becoming warmer and drier, which means that lawns are more susceptible to drought and other problems. As a result, homeowners are more likely to hire a lawn care company to help them take care of their lawns. This is also driving the growth of the industry.

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The Professional Grounds Management Society moved to larger headquarters: PGMS, 10402 Ridgland Road, Suite 4, Cockeysville, MD 21030. 301/667-1833. LCI

Not on the local level. Dr. Warren Stickle, president of the Chemical Producers and Distributors Association, says the chemical lawn care industry should work for "a workable state-wide notification program that would provide visual notice of lawn care use...Citizens need to have adequate notice so that each individual can make his or her own choice." For each of

America's 80,000 smaller political subdivisions to draft separate notification laws would be unnecessary and counter-productive. LCI

"Food Scare of the Week" over? When Rhone-Poulenc temporarily removed the insecticide aldicarb from use on potatoes on April 11, the story didn't make the headlines. Instead Rhone-Poulenc drew praise. The company took its action after finding insecticide residues on 10 potatoes out of 300 it tested. "The 'food scare of the week' syndrome may be on its way out," said Ohio State

University vegetable specialist Mark Bennett. LCI

University of Massachusetts Turfgrass Research Field Day, South Deerfield, MA. Contact: Dr. Richard J. Cooper, Dept. of Plant and Soil Sciences, University of Massachusetts, Amherst, MA 01003. 413/545-2353. LCI

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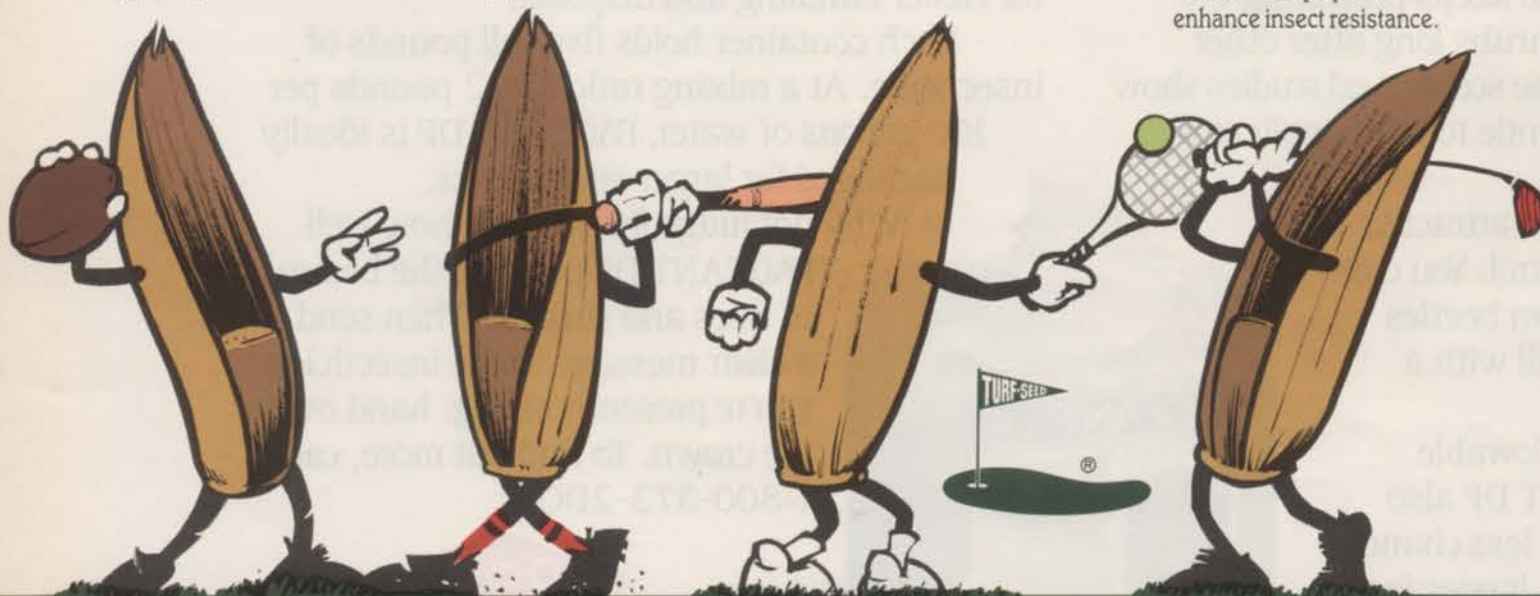
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RON HALL

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JERRY ROCHE

Executive Editor

JON MIDUCKI

Publisher

ROBERT EARLEY

Group Vice President

LINDA O'HARA

Production Manager

ROSY BRADLEY

Production Supervisor

BRYAN VOLLMAN

Graphic Design

MARILYN COPP

Circulation Supervisor

GAIL PARENTEAU

Reader Service Manager

THEODORE C. MATHEWS

Promotion Director

JOHN PRESSELLO

Graphics Manager

BUSINESS STAFF

Midwest Office:

JON MIDUCKI

(216) 826-2855

Publisher

MARSHA DOVER

(216) 891-2739

Regional Sales Manager

7500 Old Oak Blvd.

Cleveland, OH 44130

FAX (216) 826-2832

Southern Office:

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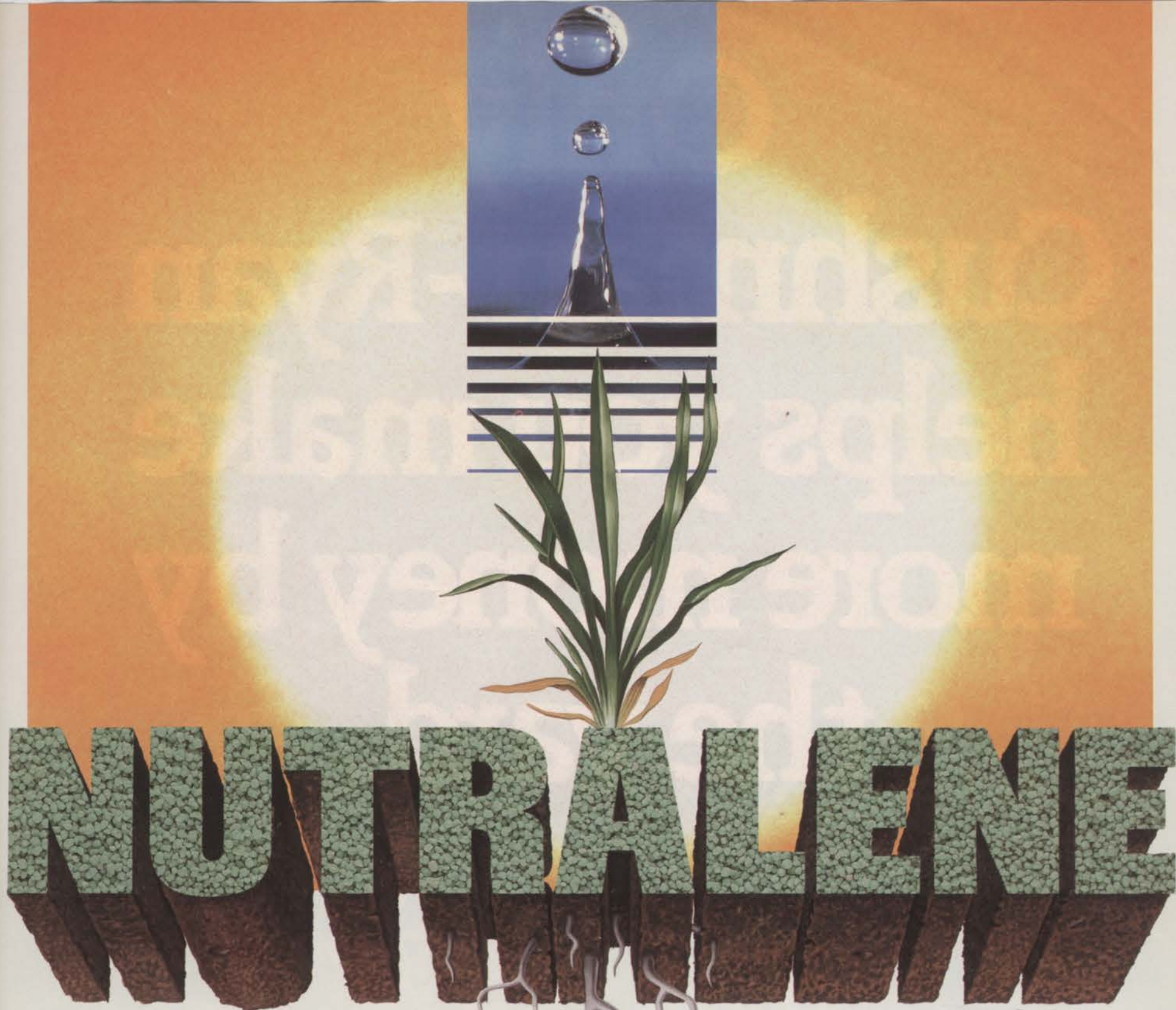


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Dave Dickson not sure total IPM practical for most providers

DENVER

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Wilhelm Tree and Lawn, as its name implies, tied the tree and lawn aspects of its services into a premium comprehensive package and named it YardLife™ offering more on-site inspections and remedial service. In four years YardLife™ has grown into one supervisor and four highly trained Wilhelm technicians. They're the heart of the program, says Aitken.

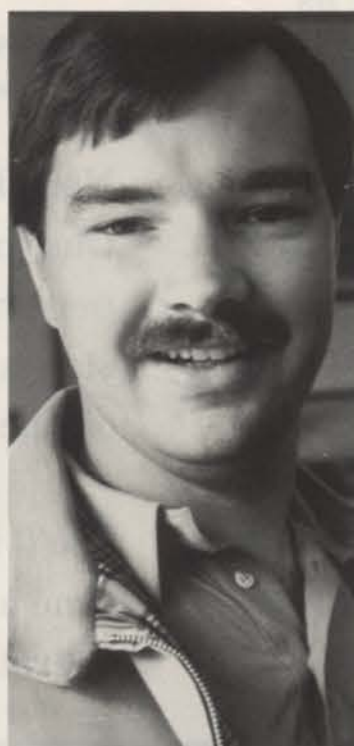
"If a customer accepts our premium service they're getting a highly qualified person, the same technician each year,

and that technician becomes extremely familiar with each yard under their care," says Aitken. "We want the client to develop a relationship with our employee and often they won't call the company when they have a question. They'll call their technician."

"The whole image of the company is through that one person."

Bob Priest knows firsthand the importance of the technician-client relationship. He's the owner (and sole technician) for the Personal Touch Lawn Care company.

Not that he hasn't seen the other world too, not after 13 years with ChemLawn, a company he still holds in high regard. But a year ago he went out on his own, partly at least because he wanted to deal with the public on his own terms.



Tom Tolkacz feels organic fertilizers help improve soil

"There have been times this spring when I've spent two or three hours on a single property because I would aerate the yard first then do a regular application," says Priest. "I had people tell me that's the best aeration they'd ever had done on their property because I went over it two or three times."

"People don't realize what a real good job is sometimes, not until they experience it anyway."

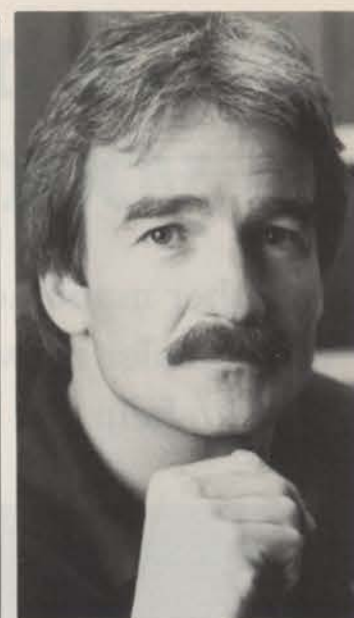
Priest prices his services "about in the middle" of the Denver and Colorado Springs markets and says he hasn't had any difficulty keeping busy. Word-of-mouth referrals keep boosting his customer base.

"I knock on my customers' doors before I do their lawns and talk to them to see if they have any concerns, and I usually talk to them after I'm done," he says. "It's those little things that I want to do more of."

Swingle Tree Company is another Denver company that's listening to its customers, and what some of them are saying is that they need "alternative" approaches to some of their lawn and landscape problems.

Tom Tolkacz is the lawn division manager of the Swingle Tree Company, one of eight divisions within the 43-year-old company. "We started the lawn care service (10 years ago) to satisfy the demand coming from our tree care customers," says Tolkacz.

Swingle incorporated "organic" fertilizers (from the Ringer Corporation, Eden Prairie, MN) into its lawn applications, particularly in lawns having problems with Necrotic Ring Spot. "Maybe it's because



Bill Aitken: need top techs for premium lawn care services

of the aging of the sod that was installed years ago, maybe lawn care companies have been pushing lawns too much, but some of the lawns here have a severe problem with Necrotic Ring Spot," says Tolkacz. But by using organic fertilizers, sometimes in conjunction with Rubigan fungicide, and areating both in the spring and the fall, Swingle technicians have been able to reduce the disease in 80 percent of the lawns they treat.

"It's definitely a premium program because we're probably on a person's lawn seven or eight times a season," says Tolkacz. "Some of the lawns that we've been using the Ringer Product on the last three seasons are some of our best lawns."

Tolkacz says Swingle is constantly looking for better and more acceptable products and practices for its customers. "Once we try it ourselves and evaluate the results, then we offer it. We want to make sure it's going to work first," says Tolkacz.

Swingle's commitment to be on the forefront of Green Industry service (the company offers about every landscape service except residential mowing) is more comprehensive than just the use of organic fertilizers. The company offers practically a full range of "alternative" approaches and products, particularly in its tree insect work.

"We've got to realize that the service our industry offers is more customer-focused and not treat it like the trash hauling," says Swingle President Dave Dickson. "Our technicians are obviously going to have to be more educated and we're going to have to be better compensated."

Dickson says he's not convinced many Green Industry service companies can offer "a total" IPM program and he suspects premium programs based on IPM principles will have to be "hybridized" for specific regions.

"I'm not sure the public wants information generated. The public will dictate how we offer our service though." LCI

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Dr. Graeme Berlyn (l.) and Robert F. Weltzien "stimulate" acceptance of biostimulants; debunk "snake oil" stigma

MONITOR

from Page 1

to all of his customer lawns. Results will be closely monitored.

These biostimulant treatments will be made in Rogers' third application between mid-June and the end of July. Most of his customers are on a six-application program.

That third application will consist of a tank mix of three ounces of the biostimulant, 1/4 pound of readily available liquid nitrogen, chelated iron and an insecticide per 1,000 square feet of lawn. "I see the biostimulant as one more good input for a balanced program," Rogers explains. "The small amount of nitrogen is added to the tank mix to ensure uptake of iron by the turf."

Rogers became interested in biostimulants because of research work with these materials being conducted at Virginia Polytechnic Institute. He conducted tests on commercial clients with their permission in 1989.

"I thought Virginia Tech's data and comments on biostimulants were very interesting," the LCO says. "These compounds seem to help turf under stress situations and work best when applied before stress caused by heat and drought sets in."

The area Rogers serves is the transition zone, and August weather is particularly rough on cool-season grasses. "I'm expecting the Rootsmaterial to help us get through that stress period," he explains. "Customers get unhappy when their lawns start to deteriorate in August. The biostimulant should give us lawns that are not under stress and not as vulnerable to

resistance, better root development, greener color and an overall improvement in turf quality," he says.

Juntgen became interested in biostimulants after seeing results of use at an area sod farm. "The sod grower was very pleased after using a biostimulant because he was able to harvest sod on a much quicker turnaround than normal," the Indiana LCO says. The lawns in Juntgen's service area are nitrogen-hungry, and he expects the biostimulant to improve nitrogen efficiency and perhaps allow eventual reduction in nitrogen rates.

"I view use of biostimulants as a long-term investment in my customers' lawns," says Juntgen. "We're after improving the quality of our customers' lawns. Our program has sold itself and referral rates are increasing. This will only improve our program."

Mother Nature."

For several years, Rogers has worked to reduce the amount of nitrogen applied to customer lawns and consequently the level of nitrates in the soil. Use of slow-release fertilizers and chelated iron, Rogers feels, have helped him achieve this goal. "I think biostimulants will enable me to reduce nitrogen rates even more substantially by boosting fertilizer efficiency," he predicts.

Rogers will notify his customers of the biostimulant treatments via a monthly newsletter he sends to all of his accounts. He notes that customers seem willing to pay more for environmentally sound lawn care programs.

"It takes time to make an organic program work and show results," Rogers points out. "We're always looking for ways to beef up turf without stimulating excessive growth. I think use of biostimulants will give us stronger root systems and more durable turf in the long run," he adds.

Another LCO who will apply a biostimulant to all customer lawns this year is Steve Juntgen of Emerald Green, an independent lawn care service in Ft. Wayne, IN, that's been in business 13 years.

The biostimulant Juntgen will use is a formulation of biostimulant containing 3 percent chelated iron. The product will be applied in Emerald Green's second and third applications on lawns primarily composed of bluegrass varieties, fine fescue and ryegrass.

The biostimulant will be applied at a rate of one gallon per acre and tank mixed with nitrogen and, in some cases, insecticide, Juntgen says. "I expect to see improved stress

hancers to users and potential users.

This educational program, combined with advertising assistance and price incentives, has enabled the company to establish a national network of distributors that are deeply involved with LCOs and their specific needs, says Wall.

The cost of applying the biostimulants at the recommended rates is roughly 70 cents per 1,000 square feet of lawn. "Based on the feedback we're getting from university trials and commercial use, our biostimulants are working successfully on a variety of soil types and turf species," Wall claims.

LCI

Watkins to lead PA turf council

BELLEFONTE, PA—Dennis Watkins, Lords Valley Country Club, Hawley, PA, is the new president of the Pennsylvania Turfgrass Council.

Other officers: Charles Cadiz, Jr., Eagle Lodge Country Club, Lafayette Hill, 1st vp; John Yakubisin, Youghiogeny Country Club, McKeesport, 2nd vp; Christine King, Bellefonte, exec. sec.-treas.

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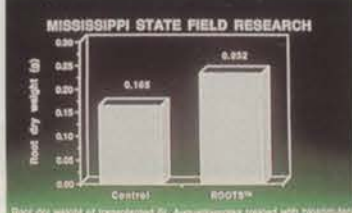
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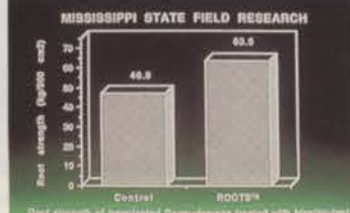
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PHOSPHORUS	100	118	188	148
POTASSIUM	100	112	184	118
IRON	100	148	260	307
MANGANESE	100	103	119	185

* Uptake corrected for weight differences in nutrient elements.



Root dry weight of transplanted 60-day-old ryegrass treated with biostimulant



Root strength of transplanted 60-day-old ryegrass treated with biostimulant

Circle No. 108 on Reader Inquiry Card

The 'collection specialist' zeros in on bill-avoiders

BY LOU BISHOP

If you've been staring at a growing stack of unpaid accounts receivable, you're not alone.

A survey of businesses and professions in all 50 states projects a reported \$18 billion to \$25 billion in delinquent debt—reflecting only unpaid bills that have been turned over to collection agencies. The overall total is much more.

Realistically, any business that extends credit will have some slow-paying accounts. That's a fact of life.

It's also a fact that delinquent debt has certain basic causes and, fortunately, also has workable solutions.

One of the reasons for the unpaid invoice dilemma is historical. Another is inherent in the way some companies finance their operations.

The history lesson is that multitudes of people still are suffering the psychological aftershocks of what has euphemistically been called the "recession" of the early 1980s. My view is that the U.S. went through an actual depression with effects far deeper and longer lasting than most observers acknowledge.

The October 1987 stock market nosedive added to the uneasiness about the near future. Both the recession/depression and the Wall Street jolt have combined to make thousands of individuals and businesses hang onto their cash, usually at the expense of creditors.

The other factor aggravating the unpaid bills problem is the method by which too many companies raise capital or increase cash flow, normally by increasing sales volume or by borrowing money.

Companies with flat or declining sales often don't want to incur the costs of—or cannot qualify for—a business loan. Many such firms turn to their creditors as a source of money.

These companies know that the easiest and cheapest way to borrow money is to delay paying bills or not to pay them at all.

The result obviously is that the slow-pay or no-pay customers have the best of two worlds: the cash they need and a "loan" for which they make no payments for either interest or principal.

Therefore if you happen to be the unlucky creditor, you're helping to finance your customers' operations.

What's the answer?

First, be aware of danger signs. While it's acceptable among most companies for a 30-day invoice to be paid in 35 or 40 days, undue delays beyond that point should be

carefully watched.

Experience shows that invoices not paid within 60 days should signal the need for action on your part. By this time, your accounting department has probably added a "Past Due" reminder to an unremitting customer's statement.

Second, when an unpaid invoice is 90 days old, call in a collection specialist. By this time, you've sent a number of past-due statements, with no response. You've probably phoned the delinquent customer who is usually "away for

the day", or, if you do reach the person, you've received the tired "the check's in the mail" excuse.

At or after the 90-day mark, you've probably also written your customer letters requesting payment. Again, no check, no replay.

Trusting that a skilled creditor-avoider will sooner or later pay the overdue bill is like hoping it will snow in July.

Furthermore, after three or more months of trying to obtain payment, what is there left for you to say to your de-

linquent customer? From this stage on, you'll just be wasting time, postage and phone bills?

This is the time for third party intervention. Time to refer the unpaid invoice problem to professional collection specialists.

Note the word *professional*. The days of the door-banging, barge-in "bill collector" are gone. Not only is the approach unacceptable in today's more sophisticated business climate, the old-time collection practices

are illegal in many ways.

It's no wonder that many creditors with a stereotyped bill-collector image in their minds hesitate to ask a third party to collect overdue accounts receivable. Many managers justifiably fear alienating present customers and driving away future clients.

Slow-paying customers who are treated aggressively and rudely develop a permanently negative attitude toward the creditor. They may also badmouth their creditors to others in the business com-



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munity—without, of course, explaining that collection action resulted from their non-payment of legitimate bills.

Many business owners are also reluctant to use a collection service because of what they perceive to be high fees—from 25 percent to 50 percent of the amount collected.

Neither of these problems—unprofessional collection methods and exorbitant collection fees—need to be encountered.

Today's professional collection methods are both efficient and cost-effective.

Three powers are at work in carefully planned third party intervention:

- customers realize that "someone else knows that we're not paying our bills," a factor which in itself can motivate payment;

- customers know that they may face legal action;

- customers know that their credit rating can be adversely affected by the report of a third party.

Picture one of your slow-paying or no-paying customers seated at a desk with a pile of invoices six inches high and a pile of cash two inches high.

With two inches of cash to pay six inches of bills, some creditors are going to have to wait.

Now, picture your customer

dividing the pile of invoices into two stacks—one for the "must-pays" and a second for the "all others."

In the must-pay stack are expenses that absolutely have to be paid: utility bills, salaries, rent or mortgage payments and taxes.

Your objective is to get your share of the "all others" stack of unpaid invoices. You deserve part of that two-inch pile of cash.

The old saying about the squeaky wheel getting the grease is perfectly applicable to this situation. The only difference is in the "wheel"—a high-tech method of bill col-

lection.

A truly professional collection company uses the latest techniques in telecommunication, for instance. The same kinds of creative, interactive messages that sell products and services by phone are used to persuade customers to pay their overdue invoices promptly.

Written demands requesting payment likewise should be market-proven for quick results.

Both telecommunication and written demand approaches should be customer-designed for your specific company, not the trite and ineffective standard messages used

unsuccessfully in the past.

The professional collection company you select should have offices in a sizable number of states. A customer is more likely to respond to a call or letter from a relatively close collection office.

Supporting the premise that prevention is preferable to resorting to a cure, your company can take certain steps to avoid collection problems in the future.

Top priority: establish a definite account follow-up policy, a procedure for handling accounts once the billing process begins. Lack of a sound follow-up policy contributes to a failure to monitor large balances owed, internal mismanagement and haphazard follow-through on delinquent accounts.

Diligently supervise your follow-up policy. It won't fly on automatic pilot. Watch those warning signals at the 60-day point. And be aware of a mental red light flashing as the overdue balance moves toward the 90-day mark.

Your credit policy can avert collection problems right from the start if you determine the size of a credit balance a customer is capable of handling.

Know your customer. What is their past track record in paying bills? Set limits on a credit line until customers prove they're credit-worthy for larger amounts.

A professional collection firm can also provide your management and accounting team with guidelines for establishing and maintaining a credit policy and follow-through program. **LCI**

About the Author

Lou Bishop is president of Parson-Bishop Services, Inc., Parson-Bishop Building, 7870 Camargo Road, Cincinnati, OH 45243, a franchised accounts receivable management and collection system.

Florida foliage sales drop 10%

ORLANDO, FL—The Florida Nurserymen and Growers Association (FNGA) says the state's wholesale foliage sales totaled \$269.5 million in 1989. FNGA says sales were down \$10 million from the year before but still accounted for 57 percent of the nation's foliage sales.

Foliage and related plants make up about half Florida's overall nursery production with landscape material and other related products adding another \$500 million. The entire green industry totaled more than \$1 billion in sales.

FNGA says the drop in foliage sales resulted from overproduction prior to the December 1989 freeze. Smaller growers weren't able to compete. **LCI**

IF TRIUMPH
CAN STOP ONE
OF THESE IN
ITS TRACKS,
IMAGINE
WHAT IT CAN
DO TO SOME
LITTLE INSECT.

Compared to other insecticides, Triumph® can put the brakes to a good fifty percent or more of your callbacks.

And with the cost per trip averaging around \$75, that's no small savings we are talking about.

It's also no great mystery how Triumph makes this possible.

It simply controls turf insects (even not so little ones) better than anything else on the market.



Emerging disease control strategies

BY DR. ERIC B. NELSON,
Cornell University

Newly emerging disease control strategies for cool-season turfgrasses may reduce many fungicide applications.

This is significant because turfgrass covers nearly 25 million acres in the United States, much of it near people—home lawns, golf courses, parks, and school and corporate grounds. Over the past five to 10 years the public has become more concerned over possible soil and water contamination by fungicides, and consumer and applicator exposure.

Also, continually applying modern systemic fungicides at high levels can lead to pathogen resistance to these products. It may, over a period of time, also boost the growth of soil microorganisms capable of degrading fungicides. Therefore, alternative management practices are being tested to reduce fungicide use and to prevent fungicide-resistant pathogen strains from developing.

Many turfgrass managers feel the need for a more holistic strategy of turfgrass disease management, based upon accurate and timely pest identification and monitoring, the judicious use of fungicides and other pesticides, the use of biological and cultural forms of disease control, and fertility management designed to minimize plant stresses.

Biological forms of disease control have the potential to reduce fungicide usage. Biologicals have been used successfully in experiments and also in control of plant diseases on several agronomic and horticultural crop plant species. Several types of biological control products are commercially available; others are likely to be in the marketplace in the next few years.

Plants rely heavily on microorganisms for good plant health. They release nutrients in soil, produce substances that stimulate plant growth and development, and protect plants against infection from pathogenic fungi. With a biological control as a management tool, we take advantage of these interactions among microbial populations to limit the activities of plant pathogenic organisms. Even cultural management techniques that reduce pathogen activity and disease development generally act by changing the microbial communities in which pathogens must function.

As a result, cultural practices may indirectly affect disease severity by changing the environment to favor antagonistic microflora but not the pathogen population. But this can only happen with a diverse microbial community in the soil. Nearly all organisms antagonistic to turf pathogens survive on dead and decaying organic matter—thatch, decaying plant tissues, and soil organic matter.

Although pathogens are suppressed by most fungicides, these chemicals are also detrimental to other non-target (including antagonistic) organisms. Likewise, many of the herbicides, insecticides, and plant growth regulators have similar detrimental effects on non-target microorganisms.

As populations of natural antagonistic organisms are reduced, both as a result of the continued use of these types of chemical pesticides and the general lack of soil organic matter, pathogenic microorganisms can more readily become established on susceptible plants. This is, in part, one of the major reasons why turf diseases are so devastating.

It's also partly responsible for the resurgence of "new" turf diseases, particularly some of the more destructive root and crown diseases.

If we're to use the beneficial microbes and non-chemically manage turfgrass diseases, we must restore the biological balance to turfgrass soils. We must learn to not only manage the turf itself but also the microorganisms in it. This may be the key to sustained turfgrass management in the future.

Biological control of diseases is still in its infancy, but there have been promising studies using both complex mixtures of microorganisms as well as individual organisms for managing fungal diseases.

Peat, a commonly used organic component in topdressings, has no disease-suppressive properties but composted manures, sludges, and agricultural wastes are readily available organic substrates that, if composted properly, are inherently disease-suppressive. Composted materials and organic fertilizers are excellent sources for antagonistic microorganisms.

In composting, organic materials are broken down under controlled temperature and aeration conditions so that a very uniform and nutritive material is produced after stabilization. Composting is fundamentally a microbial process involving successions of microorganisms during various phases of organic matter decomposition. It's only after decomposition slows that a more stable and disease-suppressive microflora develops.

Research at Cornell University with the use of composts and organic fertilizers has indicated the potential to suppress diseases such as brown patch, dollar spot, typhula blight, pythium blight and root rot, and red thread by topdressing with some of these materials. Golf course superintendents are beginning to incorporate these practices into their disease management programs, and cut their fungicide use significantly.

CONTROL RECOMMENDATIONS FOR COOL-SEASON TURFGRASS DISEASES

Disease and Pathogen(s)	Comments (1)	Cultural Management (2)	Fungicide or Nematoicide (common trade names)	Disease and Pathogen(s)	Comments (1)	Cultural Management (2)	Fungicide or Nematoicide (common trade names)
Anthraxnose (<i>Colletotrichum</i> , <i>Microdochium</i>)	Occurs July-Aug. Attacks annual bluegrass, Kentucky bluegrass, fine fescue, and bentgrass.	Avoid N deficiency and drought especially on annual bluegrass.	benomyl (Tersan 1991) mancozeb (Fore, Tersan LSR) propiconazole (Banner) thiophanates (Fungo, CL3336, Duosan, Bromosan), triadimefon (Bayleton)	Pink snow mold (<i>Microdochium</i>)	Occurs during cool, wet weather. Snow is not necessary. Attacks annual bluegrass, Kentucky bluegrass, bentgrass, fine fescue, tall fescue, and perennial ryegrass.	Avoid late fall application of N.	benomyl (Tersan 1991) fenarimol (Rubigan) iprodione (Chipco 26019) quinozene (Turicide, Terracolor) thiophanates (Fungo, CL3336, Duosan, Bromosan) triadimefon (Bayleton) vinclozolin (Vorian)
Brown patch, yellow patch (<i>Rhizoctonia</i>)	All seasons. Attacks Kentucky bluegrass, bentgrasses, ryegrasses, annual bluegrass, fine-leaf fescues, and tall fescue.	Avoid excess N and water, especially on perennial ryegrass, fescue, and bentgrass. Use resistant varieties of perennial ryegrass. Remove dew from greens. The use of organic fertilizers and composts have been shown to reduce disease severity.	anilazine (Dyrene) benomyl (Tersan 1991) chlorothalonil (Daconil 2787) fenarimol (Rubigan) iprodione (Chipco 26019) mancozeb (Fore, Tersan LSR) propiconazole (Banner) quinozene (Turicide, Terracolor) thiophanates (Fungo, CL3336 Duosan, Bromosan) thiram (Spotrete, Thiramad) triadimefon (Bayleton) vinclozolin (Vorian)	Powdery mildew (<i>Erysiphe</i>)	Occurs July-Sept. Attacks Kentucky bluegrass and fine fescues.	Avoid excess N and shade. Use resistant (shade-tolerant) varieties of Kentucky bluegrass.	cycloheximide (Actidione TGF) propiconazole (Banner) thiophanates (Fungo, CL3336, Duosan, Bromosan) triadimefon (Bayleton)
Copper spot (<i>Gloeocercospora</i>)	Occurs June-Oct. Attacks low-cut bentgrass.	No information known on cultural practices to manage copper spot.	anilazine (Dyrene) benomyl (Tersan 1991) chlorothalonil (Daconil 2787) fenarimol (Rubigan) iprodione (Chipco 26019) thiophanates (Fungo, CL3336, Duosan, Bromosan) thiram (Spotrete, Thiramad) triadimefon (Bayleton) vinclozolin (Vorian)	Pythium blight (<i>Pythium</i>)	Occurs July-Aug. Attacks Kentucky bluegrass, ryegrasses, tall fescue, annual bluegrass, bentgrasses, and fine-leaf fescues.	Avoid excess N and watering and mowing of wet grass, especially on perennial ryegrass, fescue, and bentgrass.	etridiazole (Koban, Terrazole) fosetyl Al (Alette) metalaxyl (Subdue) propamocarb (Banol)
Damping-off, seed rot (various fungi)	Occurs April-Oct.	Provide good seed bed and conditions for seedling vigor. Pythium Fusarium and Rhizoctonia often cause damping-off; select fungicides accordingly.	Seed treatment: thiram (Thiramad, Spotrete) metalaxyl (Apron) Seedling spray: varies with the causal fungus	Pythium root rot (<i>Pythium</i>)	Occurs Mar.-Nov. Attacks Kentucky bluegrass, annual bluegrass, creeping bentgrass, and perennial ryegrass.	Avoid prolonged wet conditions and excess watering. Raise mowing height if practical. Avoid frequent applications of Triadimefon.	fosetyl Al (Alette) metalaxyl (Subdue) propamocarb and metalaxyl must be thoroughly watered-in. Fosetyl Al can be applied as a spray. Apply fungicides Oct.-Nov. for early spring control.)
Dollar spot (<i>Lanzia</i> , <i>Moellerodiscus</i>)	Occurs June-Oct. Attacks Kentucky bluegrass, ryegrasses, annual bluegrasses, bentgrasses, and fine fescues.	Avoid N deficiency, drought, and night watering. Use resistant varieties of Kentucky bluegrass, fine fescue, and bentgrass. Remove dew from greens. The use of organic fertilizers and composts have been shown to reduce disease severity.	anilazine (Dyrene) benomyl (Tersan 1991) chlorothalonil (Daconil 2787) cycloheximide (Actidione TGF, Actidione Thiram) fenarimol (Rubigan) iprodione (Chipco 26019) propiconazole (Banner) thiophanates (Fungo, CL3336, Duosan, Bromosan) thiram (Spotrete, Thiramad) triadimefon (Bayleton) vinclozolin (Vorian)	Red thread, pink patch (<i>Laetisaria</i> , <i>Limonomyces</i>)	Occurs May-Oct. Attacks Kentucky bluegrass, annual bluegrass, perennial ryegrass, fine fescue, and bentgrasses.	Avoid N deficiency, esp. on perennial ryegrass and fescue. Use resistant varieties of Kentucky bluegrass, perennial ryegrass, and fine fescue. The use of some organic fertilizers will reduce disease severity.	iprodione (Chipco 26019) propiconazole (Banner) thiram (Spotrete, Thiramad) triadimefon (Bayleton)
Fairy rings (various fungi)	Occurs April-Oct. All grasses.	Mask symptoms by removing cores, thorough watering, and moderate fertility. In critical areas, fumigate or replace the soil and reseed.	None are effective.	Rusts (<i>Puccinia</i>)	Occurs July-Oct. Attacks Kentucky bluegrass and perennial ryegrass.	Avoid N deficiency and drought. Use resistant varieties of Kentucky bluegrass and perennial ryegrass.	anilazine (Dyrene) chlorothalonil (Daconil 2787) cycloheximide (Actidione TGF) mancozeb (Fore, Tersan LSR) propiconazole (Banner) triadimefon (Bayleton)
Leaf spots and blights (<i>Ascochyta</i> , <i>Bipolaris</i> , <i>Curvularia</i> , <i>Drechslera</i> , <i>Nigrospora</i> , <i>Septoria</i> , etc.)	Occurs April-Oct. Attacks Kentucky bluegrass, ryegrasses, annual bluegrass, bentgrass, and fine-leaf fescues.	Avoid excess N (esp. in spring), excess benomyl, thiophanate, and triadimefon, and night watering. Use resistant varieties of Kentucky bluegrass, perennial ryegrass, and fine fescue. Raise mowing height.	anilazine (Dyrene) chlorothalonil (Daconil 2787) iprodione (Chipco 26019) mancozeb (Fore, Tersan LSR) vinclozolin (Vorian)	Smuts (<i>Ustilago</i> , <i>Urocystis</i>)	Occurs April-Nov. Attacks Kentucky bluegrass, creeping bentgrass, and colonial bentgrass.	Avoid excess N and drought. Use resistant varieties of Kentucky bluegrass.	benomyl (Tersan 1991) fenarimol (Rubigan) propiconazole (Banner) thiophanates (Fungo, CL3336, Duosan, Bromosan) triadimefon (Bayleton) (NOTE: Apply fungicides in Nov. or Mar.)
Necrotic ringspot (<i>Leptosphaeria</i>)	Occurs June-Sept. Attacks Kentucky bluegrass, fine fescue, annual bluegrass, and bentgrass.	Avoid excess N, drought, excess water, and very low mowing. Mix perennial ryegrass into Kentucky bluegrass seed or overseed with resistant varieties of Kentucky bluegrass.	benomyl (Tersan 1991) fenarimol (Rubigan) iprodione (Chipco 26019)	Summer patch (<i>Magnaporthe</i>)	Occurs June-Sept. Attacks Kentucky bluegrass, fine fescue, annual bluegrass, and bentgrass.	Avoid excess N, drought, excess water, and very low mowing. Mix perennial ryegrass into Kentucky bluegrass seed or overseed with resistant varieties of Kentucky bluegrass.	benomyl (Tersan 1991) fenarimol (Rubigan) iprodione (Chipco 26019) propiconazole (Banner) thiophanates (Fungo, CL3336, Duosan, Bromosan) triadimefon (Bayleton) (NOTE: Apply fungicides preventively at high rates in April-June.)
Nematode-caused diseases (various genera)	Occurs April-Oct. Attacks all grasses.	Apply to prepared seed bed during warm weather. Aerate soil thoroughly before planting. Apply as a drenching application during growing season. Do not handle sod within 30 days. See label directions.	Preplant: 1,3-dichloropropene (Telone II, Vorlex) metam (Vapam) Mature turf: (*) ethoprop (Mocap) (*) fenamiphos (Nemacur)	Take-all patch (<i>Gaeumannomyces</i>)	Occurs Mar.-June, Sept.-Nov. Attacks Kentucky bluegrass and annual bluegrass.	Use acidifying fertilizers to reduce thatch pH. Avoid heavy application of lime.	fenarimol (Rubigan) (NOTE: Controlling other diseases with triadimefon may also be helpful.)
				Typhula blight (<i>Typhula</i>)	Occurs Dec.-Mar. "Gray snow mold." Attacks Kentucky bluegrass, bentgrass, annual bluegrass, tall fescue, fine fescues, and perennial ryegrass.	Proper fertilizer management to prevent lush turf going into winter.	anilazine (Dyrene) chloroneb (Terneneb SP) chlorothalonil (Daconil 2787) fenarimol (Rubigan) iprodione (Chipco 26019) quinozene (Turicide, Terracolor) thiram (Spotrete, Thiramad) triadimefon (Bayleton) (NOTE: Apply fungicides before long-lasting snow cover. Systemic fungicides should not be applied to dormant turf.)

(1) Most susceptible species in capital letters.

(2) These practices have been shown to affect disease severity. The inclusion of these practices in no way implies that they may eliminate the need for pesticide use.

(*) Restricted-use pesticide.

Using composts and organic fertilizers for disease control is economically and technologically practical and can provide control comparable to that of fungicides.

Unfortunately, we don't know how predictable certain composts might be from year to year and batch to batch. It's clear that composts of different origin and stage of decomposition differ in their disease-suppressive properties as well as the diseases they control. There's microbial variability among different composts and among the different qualities of organic matter present in any one compost at various stages of stabilization.

Although microbial activity is necessary for a compost's disease-suppressive properties, we know nothing of the specific microorganisms that give these qualities to the material. We'll have to identify these specific organisms to understand how composts suppress diseases.

Since the 1920s, when interest in biological control of plant diseases first arose, there have been only

four commercial microbial-based fungicides or bactericides marketed in the United States. Three—Quantum-4000®, Dagger G® and Binab-T®—are targeted for fungal pathogens; the fourth—Galltrol-A®—is targeted at one specific bacterial disease. However, in the last few years there's been intense interest among several of the larger agrichemical producers in developing microbial fungicides for turf. It's likely that in the next three to five years, turfgrass microbial fungicides will begin appearing on the market, if:

- 1 needed by consumers;
- 2 economically feasible to produce;
- 3 competitively attractive;
- 4 acceptable to activists and regulatory agencies;
- 5 compatible with the interests of the company developing the product.

All five of these qualifications can be met. For example, the development of microbial fungicides in the United States is estimated to

take approximately two to three years at a cost of less than \$500,000 while chemical fungicides are estimated at approximately seven to 10 years at a cost exceeding \$20 million. Costs of applying one of the more recent biofungicides, Dagger G®, is about \$9.50 per acre. It's critical that some of these initial products perform as well as or out-perform conventional fungicides for the future success of biological fungicides.

While biological controls offer an attractive alternative to chemical fungicides, turfgrass managers feel they must depend on fungicides to manage turfgrass diseases now.

Fungicides are either contacts or systemics. Contact fungicides are typically applied to foliage to prevent pathogenic fungi from infecting leaves, but they also kill pathogens on thatch and leaf clippings in the turfgrass canopy. Contact fungicides kill both dormant spores, and dormant and active mycelium of pathogenic fungi but must

See **EMERGING** Page 30

PA turfgrass fete Dr. Waddington

BELLEfonte, PA—The Pennsylvania Turfgrass Council gave its Distinguished Service Award to Dr. Donald V. Waddington, professor of soil science, The Pennsylvania State University.

The presentation took place at the Western Pennsylvania Turf Conference. It honored Waddington's 25 years on the Penn State faculty and his research on turfgrass fertilization, soil modification, and surface characteristics of athletic fields.

A number of his former graduate students are active in research, teaching and extension at other universities. He has been active in professional societies and served as chairman of the Turfgrass Division in the Crop Science Society of America. In 1986 he was elected Fellow in the American Society of Agronomy.

Waddington serves as a member of the Pennsylvania



Don Waddington recognized for topnotch turf work

Turfgrass Council Technical Advisory Committee and as a member of the planning committees for the Eastern and Western Pennsylvania Turf Conference. He has been a strong supporter of the concept of Penn State and the Turfgrass Council working together to provide the best possible educational opportunities for those in the turfgrass industry. LCI

Henry Indyk says goodbye to Rutgers U.

HORSHAM, PA—Turfgrass expert Dr. Henry Indyk is making a career change.

As of June 30 he will be leaving behind 30 years on the faculty of Rutgers University to join Turfcon, professional turfgrass consultants, a recently-formed division of GSI Consultants. The announcement came from Thomas L. Ripley, Sr., group coordinator of The Greenway Group, Horsham, PA, which manages GSI Consultants.

Indyk joins Turfcon as its chief agronomist. The Greenway Group's announcement says he continues working in the construction, renovation and maintenance of athletic fields and other sports turf facilities. He served as a consultant in the reconstruction of the Los Angeles Coliseum for the 1984 Olympics.

Indyk is one of the better known turf authorities in the



Dr. Henry Indyk joins Turfcon

United States, and particularly in the Northeast. He was the Irrigation Association's "Man of the Year" in 1978, earned a spot in the New Jersey Turfgrass Hall of Fame in 1985, and was honored by the Golf Course Superintendents Association of New Jersey in 1989. For the past 16 years he served as the general chairman for the New Jersey Turfgrass Expo. LCI



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Circle No. 122 on Reader Inquiry Card

Winds and oil: two facts of life for a busy Corpus Christi LCO

BY RON HALL
editor

Met the busiest man in Corpus Christi each spring—Mr. Frank Dietz, owner of Perma Grass.

And spring comes early, real early, on the Texas Gulf Coast, usually in February. That's when Dietz starts the 12-hour days, often Monday through Sunday.

Dietz and his wife moved from Indianapolis just over 12 years ago because they thought Corpus would—somewhere down the road—offer a marvelous retirement for them which, they've concluded, it will. Except Frank's working harder than ever as

fall, that might be one of this city's most distinguishing traits. If it isn't blowing at least 20 mph, it's calm, say natives.

That's just one of the coastal Texas realities Dietz has had to deal with as an LCO. It caused him to equip each of his four service trucks with dual hoses. A second valve releases post-emergence herbicide or other products which allows his technicians

to pinpoint areas as they treat a lawn. "We don't want drift of post-emergents or even fertilizer into bushes or anything. There's no reason for us to put them onto most entire lawns," says Dietz.

A bigger reality than the wind—except for the occasional killer hurricane—is oil. As it goes, so goes South Texas, boom or bust, one reason why Corpus has been trying very hard to broaden its



Dietz likes ultra low volume and pickup trucks.



*The telemarketing machine doesn't get upset. It doesn't get paranoid.—
Frank Dietz*

probably the only exclusive chemical lawn care provider in this South Texas city.

Corpus, population about 250,000, is spread on the Gulf Coast, north to south, like glazing spread on a window pane with a putty knife. There isn't much west of Corpus—except Texas which, of course, there's plenty. Downtown is small but the buildings are tall and glass-faced and look out onto a jelly bean-colored fleet of charter and shrimp boats. Bayfront parks extend miles south from downtown. They're dotted with palm trees beheaded by the vicious 1989 Christmas freeze and just now sporting cabbage-sized regrowth. Getting around Corpus is easy. Traffic is generally light.

But it's the wind, seemingly never-ending in the spring and

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And, as effective as CHIPCO® SEVIMOL® brand is on turf pests, it's equally reliable against 86 insects known to attack a wide variety of trees

Secret

economy. Modestly it's succeeding, thanks to tourism and the presence of the military.

When Dietz arrived in Corpus, oil sold at \$30-plus a barrel. Since, of course, it's been up and down, "and when it gets down to \$10 a barrel, the old man says, 'Mama we're closing the well. Let's just take a year off,' and that's when you start seeing lots of vacant condos," says Dietz. In recent months it's been holding steady, and the Corpus economy, though not blazing, is steady too.

"Even when oil was real low my business didn't suffer but we certainly didn't grow as

When the price of oil dips, the old man says "Mama, we're closing the well. Let's just take the year off."

fast," says Dietz.

Perma Grass, in fact, has been growing slowly ever since Dietz, with no previous lawn care experience, bought the company in 1979. In Indiana he'd operated a service station/convenience market, then a wholesale cookie route. When he came to Corpus, he worked for a company that provided day labor to area businesses.

"I'd introduce myself and

my company to every businessman I could and I'd say something like, 'Anytime you want to clean this warehouse out, just call us and we'll deliver two guys and we'll pick'em up when they're done.' It was a great opportunity to learn about the town," recalls Dietz.

One of the businesses he called on was a lawn care company (the one

he now owns), and he saw "customers out there holding \$50 bills and nobody going out and getting them."

Shortly after buying Perma Grass, he equipped it with personal computers, not the most powerful but enough of an improvement over the previous system to whet his appetite. He streamlined the company's purchasing and fine-tuned its routing. In general, he began managing the business as a business, and emphasizing service as its number one product. "There's probably nothing we can do for our customers that they can't do for themselves, but we like to ask them, 'Do you really want to

do it?"

Getting this message to potential customers has been somewhat of an adventure for Dietz, who's tried television, radio, newspapers and three automatic telemarketing machines. He likes telemarketing.

"If people hang up, the machine doesn't get upset, it doesn't get paranoid, it just dials another number." The number of sales coming from the machines rises dramatically, Dietz admits, when they're coupled with the efforts of a real flesh-and-blood telemarketer. Sales also rise by coordinating telemarketing with the early spring selling season. "When the grass starts coming out, people are saying, 'Gosh, I've got to buy some fertilizer, and I've got to go out and do it,' and then the telephone rings," says Dietz. "But if we try to use them (telemarketing machines) at a time of the year when demand isn't strong, it's a real bummer. You don't get good results, plus you irritate the public."

Perma Grass, like Dietz, has changed since 1979, and it'll probably continue to change. The company's gone to ultra-low volume applications from pickup trucks with 125-gallon tanks and electric spray rigs. Perma Grass also offers granular applications.

And just recently Perma Grass began offering indoor pest control services, targeting mainly fleas. "We want to offer any inside work that's related to the work we offer outside," says Dietz.

It's been a more than a few months since Frank Dietz has fertilized or treated a customer's lawn, but he can find more than enough to keep him busy—accounting, training, inventory control—running Perma Grass in Corpus Christi, Texas. Particularly in the spring. LCI

Weapon



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Circle No. 116 on Reader Inquiry Card

NJ DEP says, watch weather

TRENTON, NJ—Don't second guess the weather, says the Pesticide Control Program, New Jersey Department of Environmental Protection.

"If the forecast calls for heavy thunderstorms, hold off on making that granular application to the lawn that slopes down to a streambank," says Daniel Russell, environmental specialist. "If the product label says to 'water in after application,' don't count on a predicted rainfall to do it for you.

"You might get more rain than you bargained for, causing run-off, or you might get no rain, increasing the risk of someone coming in contact with the pesticide."

Russell said there's no need to carry a portable T.V. tuned to the Weather Channel. "What we would like to see is a little extra caution." LCI

COVER STORY

IPM

from Page 1

clients exactly the *right* information which is that IPM is positive, it's practical and science-based, and its goal is to maintain plant health—in some cases even increase plant vigor—while reducing factors which may be harmful (including those *perceived* to be harmful) to the environment and beneficial creatures in the environment.

This was one of the messages of a day-long IPM workshop in Denver recently, a message, regardless of common misconceptions about IPM (particularly by the public), that was far from anti-pesticide in tone.

"I hope you won't leave here thinking that IPM means the elimination or, in some cases, the drastic reduction of chemicals from your programs. In many cases it will and in some cases it won't," said consultant Steve Day, LANDSCAPES plus, Wheat Ridge, CO. He and Duane Moll, Horticulture Concepts, Aurora, CO, stressed that pesticides are, in fact, one of many tools available to lawn and landscape professionals. There's no sound or logical reason to abandon them, but there are proven methods to use them prudently by lessening their use and/or minimizing their impact on the environment.

The heart of their message:

- IPM (particularly perceptions surrounding IPM) will gain importance in professional turf, tree and

landscape care. "The whole concept is the way we need to move either voluntarily or involuntarily over the next several years," said Day.

- There's evidence for a growing market for company's that can educate customers about IPM, then sell and deliver legitimate IPM service to them. No small matter this, Moll and Day conceded at the workshop, because delivering a total IPM package to lawn and landscape customers means building a program from the bottom up.

"It's not a quick response to offer in an attempt to hop on the environmental bandwagon," said Moll. "It's a long-term commitment that's going to last for years. Unless there's serious preparation and planning, it will fail."

Yet, defining a true IPM program for many professional lawn providers remains as wriggly as a dew worm on hot asphalt because it involves redefining what services LCOs provide (IPM by necessity requires more inspection, more visits to each property, etc.) how they provide them and, finally, how they convince clients and potential clients that they need these services. Indeed, switching to an IPM program or adding an IPM department to an existing operation may even require a different mindset—an intensely customer-focused mindset, with different pricing, marketing, support systems and fundamentally better-trained technicians.

"You're going to need a good six to nine months lead time and probably more than that to implement a program,"

said Moll.

But the biggest question surrounding the creation and selling of IPM programs for lawns is the marketplace. Is the public concerned enough about pesticides to "pay for" their more prudent and, in most cases, reduced use? "You might reduce usage but don't expect the savings you get there to cover the increased costs elsewhere," said Moll.

And, is the public, or at least a profitable segment of it, ready to become *partners* with LCOs? Any program to maintain and increase the vigor of lawn grasses revolves around the delivery of proper cultural practices—mowing and watering among them—and oftentimes the homeowner must deliver these.

The biggest hurdle to building and marketing an IPM program might be the public itself.

Moll emphasized it's not entirely clear, although most reasonable people believe, that certain segments of the public will continue to link pesticides with "environmental" issues. But will enough of the public be willing to shoulder some of the responsibility of helping solve these issues?

"If a customer wants you (as an IPM practitioner) to come in and take care of that lawn and they don't want to look at it, you don't want them as a customer. That customer has to be involved with their lawn. They have to be in tune with their yard," said Moll.

Customer education, important to any successful lawn care program, becomes vital in an IPM system, and that's what LCOs will have to master.

"You have to *SELL* IPM to your clients," insisted Day.

Added Moll, "You have to convince the potential customers that it's worth more to



Duane Moll says don't expect reduced pesticide usage to pay for the higher costs of delivering IPM, plant-focused services

have someone from your company come out to their lawn. It becomes more of a sales-driven force and if your sales people don't have time to explain IPM to a client, that sales person doesn't have time to sell it. The person selling IPM won't be able to make 30 calls a day."

Similarly, the technician providing IPM services will have to be extremely well-trained, including a basic understanding of turf biology. "You're going to have trouble finding an IPM technician for \$5 an hour," said Moll. It's not likely seasonal personnel will be able to satisfy the demands of the program. An IPM technician position will probably evolve into a year-round, salaried position with the technician taking on marketing and sales responsibilities in the off

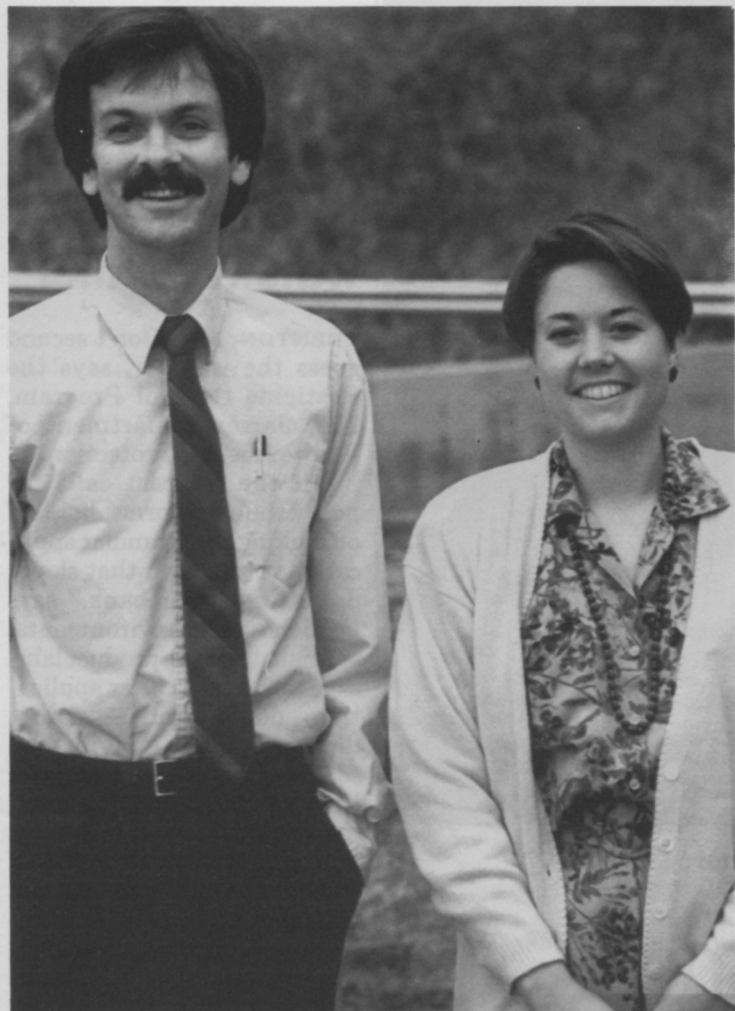
season.

The goal of any IPM program, Day and Moll emphasized, is building and cementing a highly personal, cooperative bond between technicians and clients.

"We already know that customers love individual attention," said Moll. "We already know that when a technician shows a client an inspection report with his findings they appreciate it, even if it's something like, 'Mrs. Jones, I inspected your lawn today and everything is looking great. Keep up the good work!' You're showing that you care for their property and you're willing to take the extra minute to write out what you've found."

"The technician is either

See **IPM** on Page 20



Jefferson County Extension Agents Robert Cox, Laura Pickett helped at IPM workshop. Both stressed need for more research.

Extension agent says IPM vital

DENVER, CO—Robert Cox, Jefferson County Extension Agent, provided this definition of integrated pest management at a workshop of Green Industry managers recently:

"Multiple tactics employed in a compatible manner so as to maintain pest populations below levels causing unacceptable economic or esthetic damage, while reducing hazards to man, domestic animals, wildlife and other non-target organisms."

IPM: it's at the same time the watchword of the harshest critics of the pesticide-using industries, their battle cry, while many knowledgeable people in agriculture, pest control and the turfgrass indus-

tries (among others) see it as the future of their industries, to one degree or another.

But it's an inexact term yet, particularly in landscape and turf management and it's meaning is colored by a definer's agenda. Not a mirage exactly. More like the bobbing head of a skilled boxer.

Though some of the public equates IPM with non-chemical, most turf professionals perceive IPM to be a thoughtful reduction of chemical control products by using alternative products or cultural practices. The use of IPM techniques may allow a turf manager to reduce chemical use 20 to 70 percent without loss of turf quality, some experts feel.

Cox said IPM also encompasses the use of less toxic pesticides, the more effective use of pesticides and better timing of applications.

He gave these three reasons for IPM:

- The growing resistance of some pests to control products.

- The exposure of non-target organisms to control products.

- Environmental concerns. It's been estimated that 27% of all pesticides used in the United States are used in urban areas.

Cox said extension stresses education concerning pesticides. "We look at every call we get as a potential pesticide misuse," he said. **LCI**



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Circle No. 121 on Reader Inquiry Card

Here's a brief recap of DOT requirements for LCOs

BY RICHARD H. JALETTE
and Paul Skorupa

Lawn care operators across the country are becoming aware, sometimes painfully, of their responsibility to comply

IPM

from Page 18

going to make or break your program."

Of course, Moll added, some potential customers, particularly those expecting a lawn care company to spray every time it visits a property, will say, "I can look at my property myself," because they're conditioned to think of lawn care in terms of killing pests instead of *total plant health*. "It's a real challenge," conceded Moll.

Apart from developing an IPM program and selling it, there's the question of putting together the necessary office support and record keeping systems. Both will differ from a production-driven spraying operation.

Record keeping particularly will be more involved because any IPM-based program will require detailed information on costs (labor, sales, equipment, control products, etc.) and evaluating the program. "You'll need someone in the office who is very detail oriented, someone who can do more than just answer the phone," said Moll.

Where are the customers willing to buy into (it'll probably cost at least 20 percent more than they're already spending for lawn care) an IPM program?

Day said LCOs should look to their existing client base. "You're already familiar with their habits and their properties. Stay with your existing customers, at least until you get the bugs worked out."

Day advised against the shotgun approach to marketing IPM but, instead, urged landscape managers to investigate "niches" like condominiums, homeowners' associations, etc. Then begins the educational process, perhaps even involving sponsoring seminars and workshops in various neighborhoods, appearances on local talk shows and at lawn and garden shows.

Again, the IPM message is a positive message, stressing prevention rather than cure. "Of course on some areas you're going to have to use some preventive sprays," said Moll. "But we want to make sure we're in the business of helping plants grow and remain healthy and sometimes even making them healthier. We're not in the business of killing things and we don't want leave our clients with the perception that we are." LCI

with federal and state transportation regulations.

The Federal Department of Transportation (DOT) has had regulations in effect for years which require commercial motor carriers to meet specific and oftentimes complicated requirements.

LCOs—particularly since the DOT's list of hazardous materials was expanded to include commonly used lawn care materials such as 2,4-D, diazinon, chlorpyrifos—may now be required to comply with these regulations which are oftentimes vague and con-

fusing, even to federal DOT inspectors when asked specific questions regarding pesticides.

The following information is intended as a synopsis and general overview of the Federal Motor Carrier Safety Regulations. Its objective is to inform you of the responsibilities you and your company have to your employees who drive company vehicles, and to the protection and safety of the general public on the roads.

Where do you as an LCO fit into this puzzle?

Is your operation such that you meet the criteria that requires you to comply with DOT safety and hazardous material regulations?

LCOs transport product over public highways and are classified as "commercial motor carriers." Many LCOs have vehicles with a gross vehicle weight rating, or a gross combined weight rating, greater than 10,001 pounds. If so, you're operating commercial motor vehicles. Even a pickup truck with a gross weight of 7600 pounds that pulls a trailer with a gross

weight of 3000 pounds is considered a commercial motor vehicle because the gross combined weight is 10,600 pounds. When LCOs or any company operating vehicles in the category hit the road, the DOT regulations apply.

The safety regulations were established to help reduce or prevent truck accidents resulting in fatalities and injuries or the release of toxic substances. Statistics compiled over the years by both federal and state DOTs have confirmed, without a doubt, a motor carrier who has a com-

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Use new TEMPO™ 2 ornamental insecticide and it will become your new standard of measure for all other insecticides. New TEMPO is the first affordable pyrethroid labeled for both ornamentals and home lawns. Better yet, it treats the same area as effectively as the leading insecticide, but with 80% less active ingredient. And that's a sizeable difference.

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In simple terms, TEMPO effectively controls the surface-feeding insects attacking your customers' lawns. Plus, TEMPO controls the toughest ornamental pests. So using TEMPO eliminates the need to stock several different insecticides.

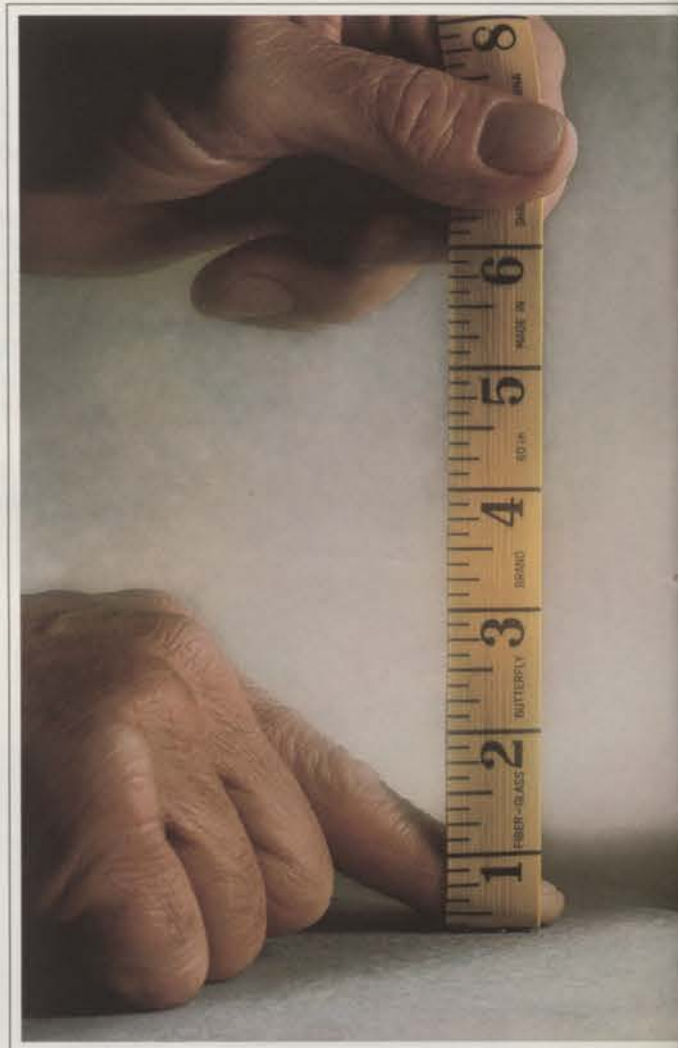


TEMPO effectively controls surface-feeding pests like cutworms, armyworms, chinch bugs, and sod webworms.

Here's another good reason to put TEMPO in your tank. More and more of your customers have a growing concern about Lyme disease. TEMPO effectively controls the deer tick which carries

the Lyme disease virus.

Calculate the cost. TEMPO is the first affordable pyrethroid labeled for use on home lawns. Better yet, it's competi-



pliance program in effect is a safer and, generally, more profitable carrier. The regulations were designed to protect the general public, the commercial driver and the liability of the company.

Basic requirements

The Federal Motor Carrier Safety Regulations are comprised of sections that require specific actions and programs to be undertaken by both the driver and the employer or company.

Drivers are required, per the Federal Safety Regulations, to comply with the following standards:

- All drivers must have the

appropriate license as per federal and state requirements. This depends on the type and size vehicle driven, and the type of materials being transported, i.e. hazardous materials.

- They must be familiar with all aspects and requirements of the regulations such as daily logs where, if applicable, a driver must log in hours on duty of driving and off duty.

- Drivers are required to ensure their vehicles are in safe operating condition as accomplished by a "circle check."

- Drivers are required to safely operate the motor vehicle under their control.

Employers have even greater responsibilities and liabilities as set forth in the regulations. First and foremost, an employer must ensure a potential driver is qualified both physically and legally to drive a commercial vehicle.

Dependent on the size and classification of that vehicle, all vehicles must meet specific safety standards and guidelines before they can be legally allowed on public highways. Specific standards and corresponding records must be established for each vehicle including a prescribed maintenance program for scheduling of inspections, repair and lubrication.

Employers responsible

Employers are responsible for the driver's on-duty status, and must ensure drivers are complying with the specific standards regarding the time a driver is behind the wheel. With the newly expanded Hazardous Materials Regulations, employers must also determine the hazard class of these materials, ensure trucks are correctly loaded, are marked or placarded depending on the hazard class of the material, and loads have the correct shipping papers accompanying them.

This basic overview of the Federal Safety Regulations may seem overwhelming,

cumbersome and onerous, but by taking each section of the regulations, digesting each and implementing the standards section by section, the task of complete compliance can be accomplished rather painlessly and in a relatively short period of time.

The Federal Motor Carrier Safety Regulations are composed of 10 parts. Each company should obtain a copy of the regulations as a reference. **LCI**

About the Author

Skorup and Jalette, Pesticide Compliance and Training Services, Inc., 580 Ten Rod Road, North Kingstown, RI 02852.



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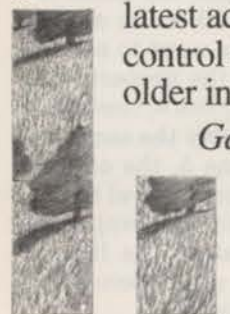
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This tiny deer tick causes Lyme disease, much suffering

Sevin approved for deer ticks

RESEARCH TRIANGLE, NC—The Environmental Protection Agency approved the registration of Sevin brand carbaryl insecticide for control of deer ticks and other ticks linked as vectors of Lyme disease.

Tests by Dr. Terry Schulze, research scientist for the New Jersey State Department of Public Health, and Dr. Du-rland Fish, director of the Medical Entomology Laboratory at New York Medical College, showed that a single application of carbaryl at two pounds per acre can provide over 95 percent control of deer tick nymphs on residential lawns.

"Considering that 23 percent of deer tick nymphs can be expected to carry the Lyme disease spirochete, and each infected tick has the capability of transmitting spirochetes, any measurable reduction in the abundance of infected *Ixodes dammini* (deer tick) will result in a significant and immediate reduction in the risk of Lyme disease to residents and visitors," says Dr. Fish. **LCI**

GA dates

GRIFFIN, GA—U. of Georgia Turfgrass Field Day, Aug. 1, Griffin, GA. Contact Dr. Gil Landry or Dr. Tim Murphy 404/228-7300.

21st GA Turfgrass Conference & Trade Show, Dec. 10-12, Hyatt Atlanta Airport. Contact Karen Lavender 912/681-5189 or Esther White 404/447-4985. **LCI**

Pricing lawn services for larger properties

BY PHILIP D. CHRISTIAN III

Last month this column explored a pricing model for a 7,000 square-foot residential property. This model is shown in column 2, figure 1. Readers were asked to plug in their own real numbers and compare the relationship between the real numbers and the model.

Did that work? If not, let's look at some of the probable areas of difficulty.

In line 4 we used the time

available of 8 hours per day, 480 minutes. Some parts of the country need to expand this to 9 or even 10 hours to get in enough stops a day to equal \$873.00 in total income as shown on line 1. If 480 minutes is divided by 21.8 stops, as shown on line 9, you get the total of line 8, or 22 minutes per stop.

If you have fewer stops than 21.8 per day, divide your actual stops into 480 minutes to find the length of each stop. Example: 480 minutes divided by 16 stops equals 30

minutes per stop. Why does it take 30 minutes to treat an average 7,000 square-foot lawn? Is the travel time more than the 15 minutes, or is your production below 1,000 square feet per minute?

If 16 stops per day is correct for your route, how does it effect the model price of \$40.00 per stop? The quick way to find out is to multiply 30 minutes by \$1.50 per minute. This equals \$45.00. Add \$7.00 for material costs for a revised stop price, based on 16 stops per day, of \$52.00 per stop.

Surprised that an increased stop time of 8 minutes will increase the price per stop by \$12.00?

Another solution to the "not-enough-stops-per-day problem" is increasing the work day from 480 minutes to 600 minutes or 10 hours. Divide \$720.00 as shown on line 3 by 600 minutes and line 5 becomes \$1.20 per minute income. Now, recalculate your price by multiplying \$1.20 per minute times 30 minutes. This equals \$36.00. Add to that the \$7.00 for material

costs, and this will equal a total stop cost of \$43.00. This is a \$3.00 increase over the original stop cost as shown in the model.

Let's look back at the original model for some "what if" questions.

What if we could increase the price to \$45.00 per stop without making any other changes in the model? The 21 stops per day times \$45.00 equals \$945.00 in total income minus \$153.00 for material equals \$792.00 per day instead of \$720.00. The difference, \$108.00, is all profit and drops directly to the bottom line.

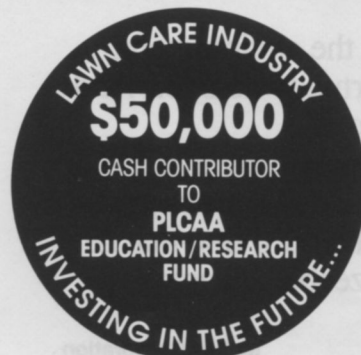
The lawn care industry focuses on the average-sized lawn just as we have in our model. The average-sized property is considered by many to be the most profitable property to service. If the original model, and the model you built, is acceptable from a

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Our over-concern about material cost has influenced us—Philip Christian

profitability point of view, the major elements in the model could be used to price properties smaller and larger than 7,000 square feet. Let's look at the model line by line.

Line 1 would get larger with bigger properties, and smaller with smaller properties because line 2, the material component, will change in direct proportion to the size. Line 3 would remain the same because \$720.00 is the amount of money we want to earn regardless of the property size. As shown in line 4, time available would stay the same, and so would line 5, the cost per minute. Line 6, travel time, is the same for all properties, but the rest of the lines, 7 through 12, vary depending on the property size.

Traditionally the lawn care industry has over-priced all properties larger than average-sized properties. It was widely believed that price

The customer might say, "It appears I'm being penalized for having a large lawn when I should be getting a better price."

should be influenced by the size or material cost rather than time required to produce.

An example of this is a comparison between a 5,000 and 10,000 square-foot property based on a typical industry pricing of \$35.00 per stop for the 5,000-foot lawn and \$65.00 per stop for the 10,000 square-foot lawn.

Please look at Figure 1, columns 1 and 4. From the customer's point of view, it's difficult to justify a \$30.00 difference when one property is only 5,000 feet larger than the other. The customer may ask, "If you are satisfied with \$40.00 per stop on the 5,000 foot property, why does it cost \$30.00 more to stay an extra five minutes to treat an additional 5,000 square feet?" The large property customer continues, "\$30.00 for five minutes work is equivalent to \$360.00 per hour and that's a little pricey for your services. It appears I'm being penalized for having a large lawn, when I should be getting a better price."

While this large property customer doesn't know the numbers, he or she knows a large percentage of our total costs are associated with getting service to the customer. Knowing that treating an additional 5,000 square feet cannot possibly cost \$30.00, the customer resists purchasing.

Continue the comparison. How would a complete route of 5,000-foot customers compare to a complete route of 10,000 square-foot customers on a daily basis? Calculating 24 stops for the small property multiplied by \$35.00 a stop equals a total daily income of \$840.00. Subtract from that total \$120.00 for materials, and the income for the day without material is \$720.00. On the 10,000 square-foot route, we made 19.2 stops at \$65.00 each totaling \$1,248.00 for the day. Deduct \$192.00 for material, and the revenue remaining is \$1,056.00.

Which would you prefer when all other costs are approximately equal, \$720.00 or \$1,056.00?

Revenue-per-acre thinking drives pricing in the wrong direction because it does not relate to profit. Our over-concern about material cost has influenced us to think about expenses as a function of area or quantity rather than a function of time.

The correct price for a 10,000 square-foot property

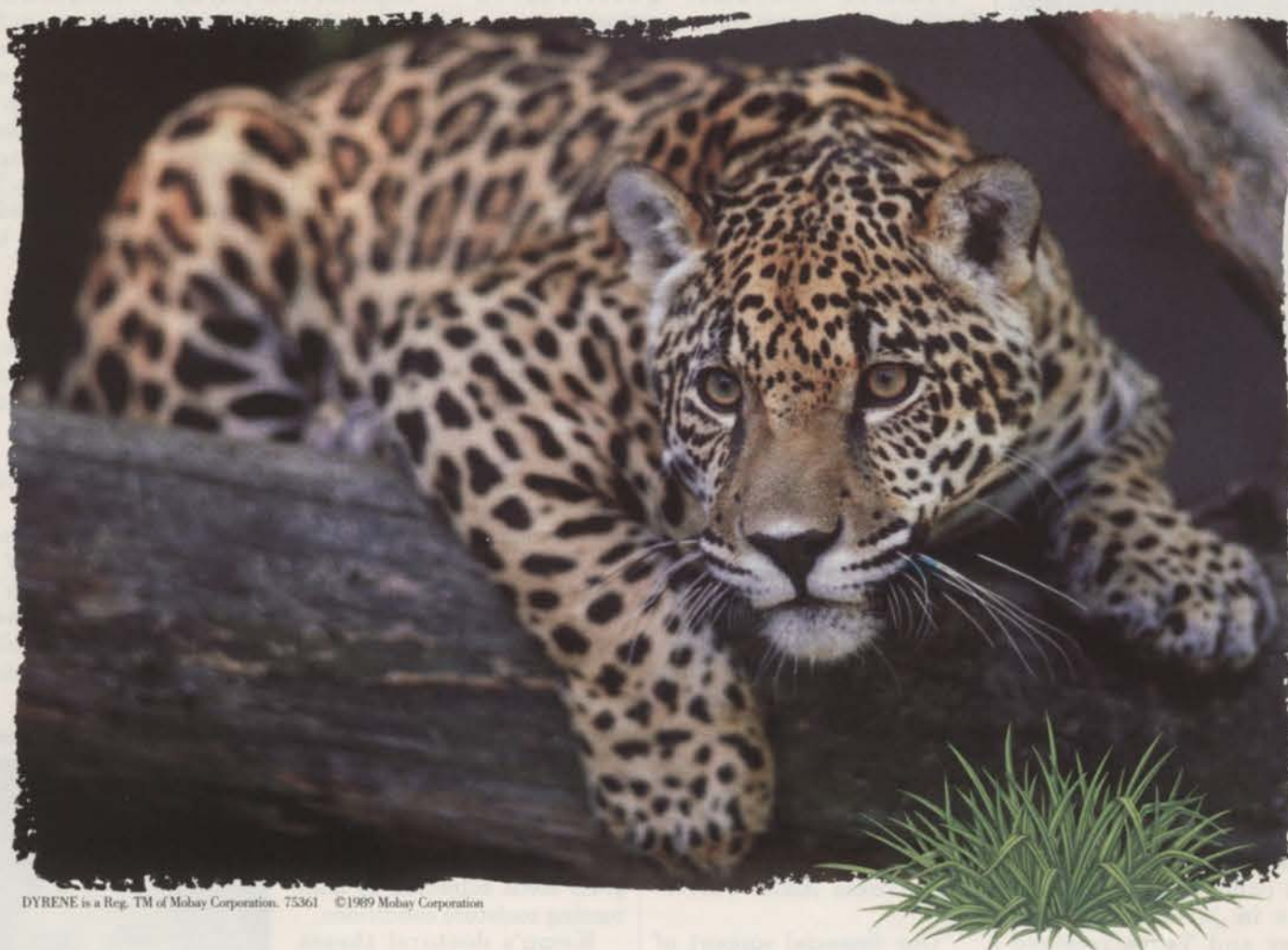
based on the model is 25 minutes times \$1.50 per minute, or \$37.50 plus \$10.00 for material equaling \$47.50 per stop.

Traditionally, our industry has seen fierce competition for average-sized properties. In reality, larger residential and commercial properties

See **PRICE** page 27

COLUMN NUMBER	PRICE BASED ON 7,000 SF MODEL			TYPICAL INDUSTRY PRICE 10,000 SF
	5,000 SF	7,000 SF	10,000 SF	
1. Income/Day/Route Line 2 + Line 3	840	872	912	1248
2. Material Costs @ \$1/1000 SF	120	153	192	192
3. Revenue Line 1 - Line 2	720	720	720	1056
4. Time Available/Day 8 Hrs X 60 Min	480 MIN	480 MIN	480 MIN	480 MIN
5. Cost/Min Line 3 / Line 4	\$1.50	\$1.50	\$1.50	\$2.20
6. Average Travel Time	15 MIN	15 MIN	15 MIN	15 MIN
7. Production Time @ 1000 SF/Min	5 MIN	7 MIN	10 MIN	10 MIN
8. Time per Stop Line 6 + Line 7	20 MIN	22 MIN	25 MIN	25 MIN
9. Stops per Day Line 4 / Line 8	24	21.8	19.2	19.2
10. Costs W/O Material Line 8 X Line 5	\$30.00	\$33.00	\$37.50	\$55.00
11. Material Costs/Stop Line 7 X \$1/1000 SF	\$5.00	\$7.00	\$10.00	\$10.00
12. Price	\$35.00	\$40.00	\$47.50	\$65.00

Some Things in Nature Were Meant to Have Spots. Your Turf Just Wasn't One of Them.

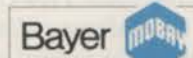


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DYRENE 4

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Specialty Products Group
Box 4913, Kansas City, MO 64120

Circle No. 112 on Reader Inquiry Card

Toma grows grass on a carpet

KANSAS CITY, MO—It's sometimes said (not unrarely by himself) that George Toma can grow grass just about anywhere. Well, the colorful and nationally known sports turf expert has one-upped even himself—he grew grass on artificial turf.

Toma, who cares for the

green carpets at Arrowhead and Royals Stadiums at the Truman Sports Complex here, noticed that artificial turf often gets dirt in it.

Where there's dirt, there's grass, Toma knows, so he seeded the mat with PHD Ryegrass and dusted it lightly with sand. The pre-germinated seed sprouted within four days. He then nourished it with applications of Bov-A-Mura Organic Fertilizer and Ferromec Liquid Iron. (Bov-A-Mura is a sprayable plant food made from dairy cow ma-

nure and marketed in the United States by PBI/Gordon Corp.)

Toma says the real grass/carpet mat can be playable within a couple of weeks then it's just a simple matter of spraying the playing surface with a high-pressure water hose to get rid of the grass. If the ryegrass is allowed to grow it will eventually put roots into the plastic base of the artificial turf, says Toma. George is investigating returfing artificial playing surfaces for World Cup Soccer competitions. LCI



George Toma (l.) and Jonathan Harmer with grass on carpet

3PF still alive, and holding

NORTH KINGSTON, RI—The Pesticide Public Policy Foundation (3PF), for the time being, will not have a new director. That was the decision of its board of directors this past May.

Dr. James Wilkinson left as director of 3PF to become the CEO of Lawnmark in mid Spring. "3PF will continue as an entity though," Paul Skorupa told *Lawn Care Industry* magazine. In fact, Skorupa said he will be answering the 3PF phone (401/294-6133). The board decided to discontinue 3PF's 800 phone number.

Skorupa said the main focus of 3PF this summer will be the activities of its State Affairs Committee which is drafting policies for materials recycling, containment, mixing and loading.

"I will still be keeping track of what's going on with the state and national issues," said Skorupa. "I'm still here in the office." LCI

What to tell your clients

From the mailbag comes a one-page information sheet that will help you, the LCO, answer client concerns. The sheet, "Common Consumer Questions on Pesticides", answers these questions:

● *Is it true that lawn care pesticide products are untested and pose a health hazard?*

Absolutely not! Pesticides used in and around the home must comply with the testing requirements established by the U.S. Environmental Protection Agency. These test requirements were developed in an open public forum. Most lawn care products are used extensively on food crops as well. Certain data "gaps" have been identified by the EPA in their files on pesticides and they're seeking this new information from the manufacturers. Data gaps do not equate or infer a health problem or human risk.

● *Aren't many pesticide products suspected cancer causing chemicals?*

This is a gross misinterpretation of the data reviewed by the EPA and other scientists. The EPA does not have data proving any currently used lawn care pesticide products to be a human carcinogen. Pesticides are evaluated in life time feeding studies using rats and mice. The animals are fed the maximum tolerated dose of the pesticide in their diet. This often equates to millions of times greater exposure

than you or I would get in our life time.

● *My children play on the lawn all the time. Is this safe?*

Exposure from playing or sitting on a treated lawn is not a health risk as long as you follow simple precautions. The treated area should be dry before you let children or pets back on the lawn. Most lawn care companies use no more than two or three pesticide applications per year and these are applied in very dilute (generally less than 1 percent) spray solutions. There is no scientific evidence to show that adverse effects occur with occasional exposure to the residues of these dilute applications.

● *What are the benefits of healthy lawn grass?*

Turf care chemicals improve the beauty of the landscape, control soil erosion, keep mud and dirt out of our homes, absorb noise and air pollutants, and cool our neighborhoods. Lush turf provides a safer playing surface.

● *Do lawn care companies rely heavily on chemicals to produce a perfect lawn?*

Lawn care companies don't rely solely on chemicals. The primary component of lawn care service is proper fertilization which helps the turf resist weeds, insects and diseases. Chemicals are selected for special problems and, usually, LCOs prefer spot treatments. LCI

Hoosier date

INDIANAPOLIS, IN—The Indiana State Lawn Care Conference and Trade Show. Nov. 6-7. Agricultural Building, Indian State Fairgrounds, Indianapolis. Bob Robert Andrews 317/575-9010. LCI

PGMS workshop July 26 at OSU

COLUMBUS, OHIO—The Professional Grounds Maintenance Society says its Facilities Management Workshop at The Ohio State University will be Thursday, July 26.

Among the speakers will be Ohio State's Dr. Neil Andrew addressing parks maintenance operations. Also included in the program is an equipment demonstration period and a tour of the newly renovated university football stadium.

Contact PGMS, 10402 Ridgland Road, Suite 4, Cockeysville, MD 21030. 301/667-1833. LCI

Musser awards scholarships to three

SHARON CENTER, OH—Doctoral candidates at universities in Minnesota, New Jersey and Texas received \$4,000 scholarship grants from the Musser International Turfgrass Foundation:

● Phil Allen, Department of Horticultural Science, University of Minnesota;

● Melodee Kemp, Department of Crop Science, Rutgers University;

● Virginia Lehman, De-

partment of Soil & Crop Sciences, Texas A&M University.

"Our financial support of these three doctoral candidates is the best investment we can make for the future of all sports turfgrasses," says Frank Dobie, president of the MITF and superintendent of The Sharon Club, Sharon Center, OH.

Allen is studying under Dr. Donald White. Alen's thesis

focuses on the germination of grass seeds subjected to fluctuating moisture conditions.

Kemp's doctoral theses deals with the effects of some root-infecting fungi on fine fescues. She's studying turfgrass breeding under the tutelage of Dr. Reed Funk.

Lehman studies plant breeding with Dr. Milt Engelke. His concentration is root and shoot tolerance of creeping bentgrass. LCI



Virginia Lehman Texas A&M

NY Turf Expo; NYSAA confab

LATHAM, NY—The New York State Turfgrass Association's (NYSTA) Turf and Grounds Exposition is November 13-16 in Rochester. The conference features a four-day educational program and a 350-booth trade show. Contact NYSTA at 800/873-8873 for more information on the program or an exhibitor packet.

Also, the New York State Arborists Association's (NYSAA) annual Empire State Tree Conference is January 20-22, 1991, in Syracuse. The conference features an educational program and a trade show with the newest in arboriculture equipment. Contact NYSAA at 518/783-1322. LCI



Melodee Kemp Rutgers U.



Phil Allen U. of Minnesota

ASPA event is July in Canada

ROLLING MEADOWS, IL—The American Sod Producer Association's 1990 Summer Convention & Field Days will be held July 25-27 at Manderly Sod Farm, Kemptonville, Ontario, Canada.

Demonstrations and static displays will be shown on two consecutive half days (July 26, 27). Headquarters for the affair is the Westin Hotel, Ottawa, Ontario.

Contact ASPA, 1855A Hicks Road, Rolling Meadows, IL 60008. 708/705-9898. LCI

Desert Show

LAS VEGAS, NV—The Desert Turfgrass/Landscape Conference and Show, Dec. 12-14, Bally's Casino Resort. Contact Desert Turfgrass Show, P.O. 948957, Las Vegas, NV 89193. 702/739-8500. LCI

Twelve pass CLCA CLT tests

POMONA, CA—Two days of testing at Cal Poly uncovered 12 new Certified Landscape Technicians, reports the California Landscape Contractors Association (CLCA).

Fungicide label adds ring spot

RESEARCH TRIANGLE PARK, NC—Rhone-Poulenc Ag Company received EPA approval to add control of necrotic ring spot to the label of Chipco 26019 WP. Necrotic ring spot is a recently identified component of the Fusarium blight complex.

Rhone-Poulenc says Chipco 26019 WP can be tank mixed with any compatible fungicide to broaden the spectrum of control with just one application. For example, Pythium blight can be prevented during an application for dollar spot by tank mixing the product with Chipco Allette fungicide, says R-P. LCI

PRICE

from page 25

offer many benefits to the lawn service company. Some of the benefits affect the pricing model and might encourage you to develop a large-property pricing strategy. The owners of large properties find it more and more difficult to do all the lawn service themselves. Therefore, one could argue they have a greater need for lawn service contractors.

The cost to acquire a customer is not related to the customer's size. A 20,000 square-foot customer could generate almost twice the revenue of an average-sized customer, thereby reducing the cost of sales as a percentage of revenue. Cancellations, invoicing, service calls, and collections are not related to customer size except in the cases where over-pricing in the past encouraging cancellations. All the costs associated with serving the customer could be reduced as a percentage of revenue by increasing our average lawn size. Large properties offer the opportunity for flexible programming and increased productivity by innovative delivery systems.

Pricing is an important part of the marketing mix. Over-pricing a portion of a market segment tends to reduce penetration of that segment. As competition increases in the 1990s, those large residential and commercial properties will become more important. LCI

About the Author

Philip D. Christian III of Alpharetta, GA, is a consultant with All-Green Management Associates in Columbus, Ohio.

tractors Association (CLCA). There were 50 applicants.

CLCA offers the exams for landscape construction and maintenance twice a year. The next tests: Saturday and Sunday, Oct. 6 & 7, at Foothill College, Los Altos. The tests are open to all landscape workers or contractors who meet certain experience and education requirements. For test information, contact Robert Baretta 916/448-2522.

The new CLTs of Construction: Spencer Deal, Rainbow Gardens, San Gabriel, and Bladimiro Hernandez,

Ciro's Landscaping, Escondido.

CLTs of Maintenance: Bruce Carleton, Elite Landscape, San Bernardino; Etienne Dipraseuth, Les McDaniel and David Laslo, Brookwood Landscape, San Diego; Bruce Heiland, Environmental Care, Santa Ana; Tom Launder, Steven Smith Landscape, Escondido; Frank Tremmel, Rainbow Gardens, San Gabriel; Bill Meredith and Larry Neuhoof, Landtrends, Inc., San Diego; and Michael Woodrow, Ponderosa Landscape, Solana Beach. LCI



CLT candidate Mike Woodrow shows how to edge at test.

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Tiltmaster diesel engines deliver strong low-end torque, and impressive fuel economy. And GM's medium-duty truck dealers are specialists who can fully meet all your spec requirements. To receive your package describing Forward or Tiltmaster in lawn care applications, call 1-800-VALUE90 (1-800-825-8390).



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Circle No. 105 on Reader Inquiry Card

Comparison drawn with 'fitness' boom

Symposium explores plants' benefits on the well-being, health of humans

ARLINGTON, VA—The first national symposium on "The Role of Horticulture in Human Well-Being and Social Development" took place here April 19-21.

Research scientists, green industry representatives, government agencies and the public focused on the beneficial effects of plants on the quality of life.

Speakers drew comparisons to the enormous growth of the "fitness" industry that came as a result of research on the benefits of exercise on physical and emotional well-being. Symposium organizers feel that conducting and disseminating research on people/plant interaction will create as deep an economic impact on the American horticulture industry.

The symposium's purpose:

- To collect current research-based information on the psychological, physiological and social responses of people to plants.

- To identify research priorities leading to an understanding of the relationship between people and plant and to seek ways that horticulturists can work with social scientists to use these relationships.

- To start a network for researchers, the green industry and the media.

The Horticulture Department at Virginia Polytechnic Institute and State University (VPI-SU) sponsored the symposium along with the American Society for Horticultural Science, the Association of American Botanic Gardens and Arboreta, and the American Horticultural Therapy Association. Funding came from the Horticultural Research Institute, government, private industry and horticultural organizations.

LCI

BASF gets EUP for herbicide

RALEIGH, NC—Impact, an experimental turf herbicide from BASF, received an Experimental Use Permit (EUP) from the U.S. Environmental Protection Agency (EPA).

BASF says Impact controls broadleaf and annual grasses with one application.

Testing during 1990 will concentrate on its control of broadleaf and grassy weeds including crabgrass, dandelions, clover and other weed species. The field work will also look at sequential, low-rate split applications, tank mixes and control of additional weed species including wild violets, says Terry Hanson of BASF.

LCI



Seminar rooms filled both days of the plant/human meeting



Dr. Charles E. Hess (l.), assistant secretary for science and education at U.S. Ag Dept., and Lawrence Scovotto at meeting.

For Getting Rid of Grubs in Record Time, There's Nothing Faster Than Dylox.

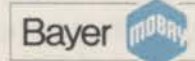


DYLOX is a Reg. TM of Bayer AG, Germany. 75371 ©1989 Mobay Corporation

DYLOX® insecticide stops grubs in their tracks. Fast. Usually in less than 48 hours. And for the record, nothing on the market works better or faster.

DYLOX

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Specialty Products Group
Box 4913, Kansas City, MO 64120

Circle No. 111 on Reader Inquiry Card

EMERGE

from Page 15

come in contact with the pathogen for this to happen.

Contact fungicides must be allowed to dry on the plant surface to be effective, and they must be reapplied frequently to newly-formed grass tissue. To achieve most effective control of foliar diseases, these fungicides should never be watered in or applied in the rain. If, however, they're targeted against pathogen activity in thatch, they can be lightly watered in. Since contact fungicides are largely water-insoluble, they don't move well through thatch and

may not be effective root protectants.

Many of the modern fungicides are systemic fungicides; they're taken up by the plant. For example, a systemic fungicide applied to foliage may move through the plant to protect roots as well as leaves. Likewise, they may be taken up by the roots and move through the plant to protect leaves and crowns. Most systemic fungicides are translocated upward in the plant.

Generally, foliar disease control with systemic fungicides is extended when they're drenched into the root

zone. For example, foliar applications of upward-moving systemic fungicides provide excellent short-term control of foliar diseases whereas drenching the fungicide into the root zone provides a much longer period of protection as well as control against some root and crown diseases. Root disease control with upward-moving systemic fungicides is only possible if they are drenched into the root zone whereas downward-moving systemic fungicides can provide control of root diseases when applied as a foliar spray.

Systemic fungicides have the advantage over contact fungicides in that they 1) have

longer residual action, 2) can protect root and crown tissues, 3) can eradicate pathogens that have already infected plant tissues, and 4) can protect newly-formed plant tissues. Also, many systemics have some contact activity as well.

However, there are some disadvantages to the use of systemic fungicides. Most don't actually kill pathogenic fungi but simply suppress pathogen activity, usually through a specific mode of action. Repeated application of one or more fungicides with the same mode of action provides selection pressure which encourages development of re-

sistance to these fungicides. No particular fungicide should never be used repeatedly over prolonged periods of time.

The chance of causing resistance can be lessened by:

1 ensuring proper spray application rates and proper plant coverage

2 alternating fungicides with different modes of action

3 using fungicides with different modes of action in mixtures

4 alternating or mixing systemic fungicides with contact fungicides to give the desired disease control. Therefore, broad-spectrum systemic fungicides should always be mixed or alternated between fungicide class and never within fungicide class. Likewise, fungicides specific for Pythium diseases should always be mixed or alternated between classes. **LCI**

B.t. resistance study is funded

DANBURY, CT—Grants ranging from \$7,000 to \$20,000 are going to five research proposals to study insect resistance to *Bacillus thuringiensis* (B.t.), a naturally occurring microorganism used in insect control:

- Drs. Arthur Aronson and Peter Dunn, Purdue University, and Drs. William McGaughey and Don Johnson USDA/Grain Marketing Research Laboratories, B.t. resistance in the Indian meal moth.

- Dr. Arnold DeLoof, Catholic University of Leuven, B.t. mode of action and receptor characterization.

- Drs. Thomas Brown and David Heckel, Clemson University, genetics of B.t. resistance in "Heliothis".

- Dr. Bruce Tabashnik, University of Hawaii, B.t. resistance in diamondback moth.

- Drs. Galen Dively and James Linduska, University of Maryland, B.t. resistance in the Colorado potato beetle.

The B.t. Management Working Group, a consortium of agrichemical and biotech companies announced the selections. **LCI**

Century buys Kentucky sites

MADISON HEIGHTS, MI—Century Rain Aid bought the Louisville and Lexington, KY, branches of Dixie Irrigation. Debbie Anderson will supervise the both branches.

Century Rain Aid, which now has 17 locations, designs and sells supplies for sprinkler irrigation systems, aerators, etc. in Michigan, Illinois, Indiana, Florida, Kentucky and Wisconsin. **LCI**



**Grow your lawn the way you grow your family.
Nourished from the roots up.**

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Your customers want the best looking lawn in the neighborhood, but they also want more natural products and fewer chemical treatments. We can help. ROOTS* is a natural organic root growth enhancer that can be part of a program to

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NEW PRODUCTS



This tiny rangefinder accurate to 75 yards

Ranging's TLR 75 rangefinder features through-the-lens readout so that the operator can focus and read the distance through the viewfinder with one hand. The TLR weighs only seven ounces and fits easily into a shirt pocket. Its measuring range is 10 to 75 yards with an accuracy of one-half yard at 20 yards and three yards at 75 yards. It features a non-slip grip for wet conditions.

LCI

Circle No. 125 on service card.



Natural fertilizers feed soil and plants

Earth's Best is the name of a new line of all-natural, organic mineral fertilizers. The nutrients contained in Earth's Best are natural and release slowly to provide long-term growth and color without polluting groundwater. The NPK analysis for lawn care is 8-2-4 which compares equivalently to higher analysis for chemical fertilizers because the nutrients are more available to plants when needed. Earth's Best feeds plants by "feeding the soil," says its maker, EarthGro, Inc.

LCI

Circle No. 126 on service card.



Backpack sprayer has many unique features

This 4-gallon backpack sprayer by Maruyama is compact and lightweight and is designed for operator comfort. The high-density polyethylene tank has reinforcing ridges

and features a large-diameter fill lid with filter basket.

The gear-driven pump features a patented uniflow piston that delivers consistent discharge rates. The pump is interior mounted for protection and is additionally guarded by a stable stand. An all-purpose dual-head nozzle produces fine to medium mist in a swirling cone pattern. LCI

Fertilizer with Sevin controls many insects

Lesco Fertilizer with 4% Sevin brand insecticide is a granular product labeled for

use on turf, flowering plants, shrubs and landscape plantings. It controls over 25 insect species including both surface-feeding and soil insects.

It's available in many analyses to fit a wide range of agronomic needs. It features a no-odor formulation and is an excellent alternative to organophosphate insecticides.

The fertilizer/insecticide combination offers affordable control of soil insects like white grubs, billbugs and ataenius grubs as well as surface insects like chinch bugs, sod webworms, armycutworms and ticks.

LCI

Circle No. 128 on service card.



'Clean air machine' takes out pollutants

The Activgreen filter unit is a "clean air machine" developed after NASA specifications. The Turbo pump cleans and brings fresh oxygen into your home or office. It is efficient in retrieving large amounts of toxic pollutants out of your environment both day and night.

The system works close to the root system, breaking down harmful chemicals which enables the plant to use them as fertilizer. It can be used in common plant containers. It has a free air flow capacity of 53 M3/hr.

LCI

Circle No. 129 on service card.

DON'T PLAY GAMES WITH CRABGRASS!

Safe, effective crabgrass control.

Here is what lawn care professionals need for controlling crabgrass. Here is Acclaim® 1EC Herbicide—a rescue treatment that is truly effective, yet easy on turf.

Unlike the old arsenates, Acclaim is effective with just one treatment. Acclaim won't harm turf, and it can even be applied to new or reseeded turf.

Be ready for rescues anytime.

The best time to be ready for rescue treatments

is early, beginning within 2 weeks of July 4th, —but Acclaim controls emerged crabgrass up to 5 tillers anytime. So you should plan ahead by putting Acclaim on your trucks.

That way you can take care of little crabgrass problems along borders and sidewalks before your customers even see them. And you'll keep them happy without complaints or costly callbacks.



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Because your turf is always on display.

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NEW PRODUCTS



Garfield Williamson offers commercial seed
Garfield Williamson Inc.'s new Commercial Line of special mixture turf seeds is made up of the seven most requested seed mixtures professionals ask for: Deluxe Sun & Shade, Contractors Turf, Deluxe Shade, Athletic Turf, Landscape Turf, Utility Turf and Triple Rye.

All Garfield Williamson Commercial Line turf seeds are available in 25-lb. polypropylene bags. Deluxe Sun & Shade, Contractors Turf and Landscape Turf also come in 50-lb. bags. **LCI**

Circle No. 130 on service card.



The Ultra Lift has many equipment uses

Ultra Tool Company describes its Ultra Lift as the most versatile lawnmower servicing lift on the market. This mobil unit can lift heavy engines out of riders or it can be used as a floor jack. It helps service all types of turf equipment. **LCI**

Circle No. 131 on service card.

Lawn Makeup makes grass turn green

Kord Products describes its Lawn Makeup colorant as biodegradable, water-based and environmentally safe. It turns brown spots to green, comes in

spray can or bulk concentrate form and is available in four computer-matched shades of green that can either be used alone or blended to meet virtually any requirement. Kord says Lawn Makeup is the solution to unsightly brown spots caused by animals, fertilizers, dry seasons, etc. **LCI**

Circle No. 132 on service card.



Aquatrols' video shows how to do it

Aquatrols' videotape "Selecting and Installing Aquatrols Irrigation Injection Equipment" runs 12 minutes and costs \$5 which will be applied toward the purchase of either the Little Squirt or P.P.M. Unit injection pumps. It's a step-by-step guide to the installation and calibration of the pumps.

"Increasingly, turf managers are recognizing the benefits of treating irrigation water with soil wetting agents to improve penetration, uniform wetting and increase water use efficiency," says Andy Moore of Aquatrols. **LCI**

Circle No. 133 on service card.

This trailer hitch makes pulling easy

The Soft Pull Trailer Hitch takes the shock out of towing. It protects your truck's transmission, drive train and differential with four heavy-duty springs. It mounts directly to the frame on all domestic 1/2 and 3/4 ton pickup trucks and has a recommended maximum tongue weight of 1,000 lbs. **LCI**

Circle No. 134 on service card.



New Echo portable is a powerful unit

Echo's EG-5500E portable generator features a large fuel tank, solid state electronic ignition, quick-glance fuel gauges, circuit breaks on all circuits, 12VDC circuit for convenient battery charging and 12 volt operation. **LCI**

Circle No. 135 on service card.

On Some Lawns, Grubs Just Aren't a Problem.



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DO NOT PLAY GAMES
WITH GRABBERS!

OFTANOL™ controls grubs before they have a chance to do their damage.
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HELP WANTED

"Consider all of your employment options in the irrigation and landscape industries. Call **Florapersonnel**, the international employee search firm for the ornamental horticulture industry. Completely confidential. Employer pays fee. **Florapersonnel, Inc.**, P.O. Box 1732, 1450 S. Woodland Blvd., Suite 201, Deland, FL 32721-1732. (904) 738-5151. Jeff Brower, Joe Dalton, David Shaw, CPC, Bob Zahra, CPC." TF

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