

The effect of route efficiency on cash flow and profitability

Your chemical lawn care company is "fuelish" if it is spending more than five percent of its annual gross on fuel.

If your chemical lawn care trucks are driving more than an average of 3.5 miles per stop, your company is going to have a hard time making a profit.

So said Greg Richards, vice president of operations for Hydro Lawn, Gaithersburg, Md. at the recent Virginia Turfgrass Conference in Richmond. The title of his talk was "Profitability and Cash Flow as It Relates to Route Efficiency." He kept the audience on its toes and scribbling in their

notebooks with facts and figures, and also said:

- Depending on your situation and other factors such as route densities, it might be more profitable for you to add an assistant applicator rather than add a whole other truck to a route.
- Allowing a customer two

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Greg Richards

(HBJ) A Harcourt Brace Jovanovich Publication

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Volume 6, Number 3

MARCH 1982

LAWN CARE INDUSTRY

Serving lawn maintenance and chemical lawn care professionals

PRODUCT BY DECEMBER

Dacthal plant reconstruction is on schedule

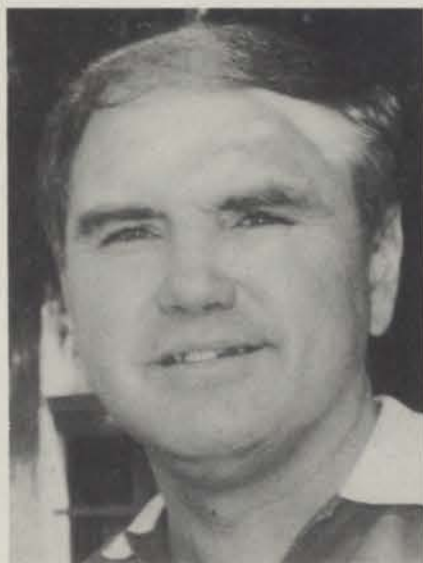
Reconstruction of Diamond Shamrock Corp.'s Greens Bayou Dacthal pre-emergent herbicide plant in Houston is running on schedule, with initial production set to begin in December, officials of the Cleveland-based company have told LAWN CARE INDUSTRY. Contracts have been signed with Fruco Engineering, Inc. of St. Louis for construction management and with Voss International of Houston for construction services of the \$20 million reconstruction effort. An explosion in late July at the plant caused extensive damage to the Dacthal production unit. Reconstruction started in January and mechanical completion is scheduled for October. Dacthal is expected to be available in the lawn care market-

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OFFICERS CONVENE IN PALM SPRINGS

ALCA taps Ray Gustin

Ray Gustin III, owner of Gustin Gardens in Gaithersburg, Md., was elected president of the Associated Landscape Contractors of America



Ray Gustin

at the recent ALCA convention in Palm Springs, Ca. Gustin has been Active in ALCA for the past decade, holding the positions of treasurer, director, and chairman of the awards, seminars, and convention committees.

Other officers elected at the convention were: David Pincus of North Haven Gardens, Dallas, Tx., president-elect; Landon Reeve, owner of Woodbine Chapel Valley Landscape, Woodbine, Md., vice-president; Rod Bailey, president of

Evergreen Services Corporation, Bellevue, Wa., vice-president; T. Irvin Dickson of ChemLawn, Atlanta, Ga., treasurer; and Karl Korstad, president of Sedgfield Interior Landscaping, Greensboro, N.C., secretary.

Pincus, vice-president last year, has served as secretary, treasurer and as a regional director. He was the 1980 chairman of the Insurance, Education, and Awards Committees as well as serving as Chairman of the 1982 convention

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DR. EARLY WARNS CONGRESS

Patent system hampers chemical developments

Development of needed new protective chemicals will be jeopardized unless Congress reconciles the patent system with the federal pesticide regulatory process, a leading spokesman for the chemicals industry warned.

"The chemicals industry cannot continue to undertake the massive research necessary for new pes-

ticides without adequate patent protection," Dr. Jack D. Early, president of the National Agricultural Chemicals Association testified before the House Judiciary Subcommittee on Courts, Civil Liberties and the Administration of Justice.

Dr. Early, accompanied by NACA board chairman Dr. Dale E.

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Next month: disease control

May MISR 0037699 X M DH
P E RIEKE PROF
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What did you spend for equipment in '81?

Product	% readers purchasing	Average per purchaser
Less than 10 h.p.	7.3%	\$ 4,085
10-20 h.p.	15.0	5,294
21-30 h.p.	4.6	14,933
31-50 h.p.	1.5	13,500
Larger h.p.	1.9	5,950
Less than 500 gal.	22.8	1,109
500-1,200 gal.	11.7	7,781
More than 1,200 gal.	3.9	3,440
Walk-behind mowers	35.9	1,320
Riding mowers	12.1	3,813
Hedge trimmers	24.3	365
String trimmers	31.1	676
Tree care equipment	8.3	696
Irrigation equipment	7.3	4,683

Source: 1981 LCI Survey



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UPFRONT



Support 2,4-D Coalition

We received this letter from J. S. "Skip" Skaptason, vice president of research and development for PBI/Gordon Corp., Kansas City, Kans. recently:

"On behalf of the National Coalition for a Reasonable 2,4-D Policy, I would like to take this opportunity to thank you for your fine support in LAWN CARE INDUS-

TRY. In my view, the defense of 2,4-D is perhaps the most important single project that I am currently involved in. Talking to lawn care businessmen, they express the same general concern.

"It may be that I am overly sensitive and too close to the details and my concern may be unfounded, but is there a chance that the headline in your December issue — \$4-Million 2,4-D 'War Chest,' State-of-the-Art Weed Control Presented at Weed Symposium" — would give the impression to potential members of our Coalition that our Coalition has **four million dollars?** You and I, of course, know that National Agricultural Chemicals Association (NACA) Task Force on 2,4-D funding is entirely separated from the Coalition.

"Would it be too much to ask another favor of you to somehow **reinforce** in the minds of your many readers that the 2,4-D Coalition needs their membership and contributions?"

No, it would not be too much to ask, Skip. **For the record**, NACA has its 2,4-D Task Force, which is funded by eight major suppliers to the tune of a half-million dollars apiece. They are doing quite a bit to defend 2,4-D, but this group is not to be confused with the National Coalition for a Reasonable 2,4-D Policy, of which Dr. Robert Miller of ChemLawn Corp., Columbus, Ohio is chairman.

The **objectives** of the 2,4-D Coalition are:

- Insure that scientific facts and risk/benefit considerations are recognized in any 2,4-D regulatory action.

- Establish a network of pesticide coalitions at state and local levels.

- Obtain congressional recognition of the benefits of 2,4-D to industry and the public.

The **Professional Lawn Care Association of America** has become a supporting member of this Coalition, and LAWN CARE INDUSTRY has also become a supporting member. Individual memberships are available for as little as \$25, and can be sent to: National Coalition for a Reasonable 2,4-D Policy, Suite 1717, 435 N. Michigan Ave., Chicago, IL 60611, 312-644-0828. Each and every lawn care businessman who is reading these words should contribute. It will go a long way towards insuring that 2,4-D will be available for your lawn care programs in the future.

Fertilizer coops? Will regional lawn care companies band together in the future to purchase supplies of fertilizer at favorable prices? Yes, is the opinion of at least one dry-applied fertilizer manufacturer that we spoke with recently.

Second-generation tall fescues: Seed companies collectively are wishing they had more tall fescue seed to meet the great demand the lawn care and other turf markets are creating. That problem should be solved after this year's seed harvest in late summer.

But there is even **something better** coming down the pike. Many seedsmen say that the sec-

ond generation of tall fescues will be appreciably better than what is available on the market now. And just about every seed company has something in the works.

PLCAA seminars: Professional Lawn Care Association of America president Marty Erbaugh and his regional seminar chairman Gordon Ober (of Lawnmark Associates and Davey Lawnscape, respectively) have been huddling and have put together a series of nine **regional seminars** to be held on lawn care topics around the country. Word on the seminars should be out after this month's PLCAA board meeting at LAWN CARE INDUSTRY corporate offices in New York. The seminars should start in May and continue through the summer. By the way, this year's **PLCAA Conference and Show** is set for November 16-18 in Indianapolis. The PLCAA Show has quickly made its mark on the turf world in becoming the second most-important national turf show in the country, right behind the Golf Course Superintendents Association of America International Turfgrass Conference and Show. The GCSAA Show was held last month in New Orleans, and was one of the best yet.

Rebel at the White House: Vanessa Jensen of Lofts/Maryland told LAWN CARE INDUSTRY that a section of the South Lawn of the White House was overseeded late last year with a solid stand of Rebel, a newly introduced turf-type tall fescue.

Kempner joins LCI: Many in the industry have already met him, but in case you haven't, Ron Kempner has joined LAWN CARE INDUSTRY as southern salesman working out of our Atlanta offices. Ron is handling sales in the southern portion of the country between California and North Carolina. He joins national sales manager Jim Brooks and Northwest salesman Bob Mierow. Not to mention myself and associate editor Paul McCloskey.

By the way, Paul travelled to Florida to interview mowing and maintenance businessmen throughout the state. While he was there he visited with Frank Timmons of Ladybug Industries, Jacksonville, Tom and Ken Oyler with Oyler Brothers in Orlando, Victor Nocera of Leisure Landscaping in Delray Beach, and Jim Oyler with Dora Landscaping, Apopka.

The group represents four distinct styles of company management as far as computerization, profit sharing, job costing, and corporate growth are concerned, says Paul. "The Florida landscape maintenance market is breaking wide open," he said. "With the growth of huge homeowner associations, condominiums, and industrial parks on the way up, there's going to be a lot happening on a state wide basis." Look for his report in the April issue.

Rob Earley

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Contract actions to affect lawn industry

This year will be a critical one for labor negotiations. Major contracts covering approximately 5,000,000 workers will be negotiated this year in a climate of demands by American business for union cuts in wages, benefits and work rules.

Over 1,000,000 workers will be covered during contract negotiations for the auto, rubber and trucking industry. Additionally, over 200,000 employees will be covered by union negotiations in the garment industry, and over 300,000 electrical workers will be covered in negotiations with RCA, General Electric and Westinghouse. Over 1,400 contracts covering 500 or more workers will expire in 1982.

At first glance, these negotiations appear to be remote from the labor and employment needs of lawn care businessmen and small businessmen generally. However, major contracts, such as those that will expire in 1982, have ripple effects that reach those industries on the periphery of the major negotiations.

Trickle down

For example, lawn care employers will be affected by auto worker, rubber worker, and teamster negotiations. Furthermore, lawn care employer suppliers will be affected by negotiations between the oil, atomic and chemical workers and major oil companies in 1982. Lawn care employers should follow these major negotiations closely, particularly in the auto and rubber industries.

As of January 1, 1982, the minimum wage and overtime law requirements applied to firms with annual gross sales of businesses of at least \$362,500. The old rate, \$352,500, was increased in 1977, at the same time the minimum wage was increased to the current level of \$3.35 per hour.

Thus, any lawn care employer with a gross volume exceeding \$362,500 must comply with wage and hour requirements, including minimum wage and time and one-half overtime provisions. It is unlikely that either the minimum wage or the minimum gross sales amount for retail and service industries will increase before 1984.

State labor developments

Forty-four states revised their labor laws during 1982, primarily in the traditional areas of wages, job discrimination, labor relations, child labor, and safety and health. Though many of the laws apply to state employees, the following is a breakdown of each state and those laws which apply to lawn care businessmen:

California: Under a new state law, Martin Luther King, Jr.'s birthday on January 15th will now be celebrated as an annual public holiday. Another new statute in California requires employers to

advise employees and applicants for employment in writing at the time a polygraph test is to be given

Lawn care suppliers will be affected by negotiations between the oil, atomic, and chemical workers in 1982.

that the individual is not required to submit to that test or a similar test as a condition of employment or continued employment.

Connecticut: An employee or an employee representative, such as a shop steward, who believes that an

employer has violated the state law requiring the posting of names of carcinogenic substances used in the work place may file a complaint with the Connecticut Labor Commissioner.

Employers are prohibited from discriminating against or disciplining an employee who files such a complaint. An employer who fails to correct any cited violation may be penalized up to \$1,000 per day during which the violation con-

tinues.

Louisiana: Employers are prohibited from discharging, demoting or discriminating against any employees who complain about an employer's violation of a federal, state or local environmental sta-

tute, rule or regulation. An employer who is found guilty of violating this law is responsible to the employee for triple damages in addition to litigation costs and attorney's fees.

Maine: An employer is prohibited from requiring an employee to refund the employer for any amounts lost by the employee in the course of work dealing with the customer on behalf of the employer, such as damages to the employer's property, vehicle, or damages to any merchandise purchased by the customer.

Mississippi: The Mississippi legislature has repealed its law that prohibited females from working more than 10 hours per day or 60 hours per week.

New Hampshire: Employers are prohibited from denying employment or discriminating against members of the National Guard because of their membership or absence from work for National Guard duty. Employers are also

to page 15

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Monsanto

Equipment and methods for detecting turfgrass insects

by Dr. Harry D. Niemczyk, Professor of Turfgrass Entomology
Ohio Agricultural Research and Development Center, Wooster, Ohio.

Detection and identification and the first and most important steps in dealing with turfgrass problems. Several pieces of equipment are useful in detection and monitoring of insects that inhabit turfgrasses. When used before and after employment of control measures, this equipment is also useful in determining treatment effectiveness.

The **sweep net** is a particularly valuable tool for detecting aphids in turfgrass. The net bag should be of a solid rather than of a fine mesh cloth. With a motion similar to that

used when using a long-handled broom to sweep off a sidewalk, the net is swept back and forth across the turf so the rim strikes just the grass blades.

The net is then turned inside out and the contents emptied onto a white cloth or your hand. If aphids are present they will collect in the net. If chinch bugs are present they will also be collected because of their habit of crawling up to the tips of the grass blades during the day. Many other insects will also be collected when sweeping turfgrass but most of them do no

damage. You will be surprised at what is collected using the sweep net over turf. It can be an informative experience.

The standard **golf course cup changer** is a convenient tool to survey for grub infestations in home lawns. If care is exercised, sampling can be done with minimal damage to the turfgrass area. Once removed, samples can be examined on the spot with soil and turf being placed back in the hole made by the sampler. In cases where it may be desirable to remove the samples for detailed examination elsewhere or extraction in a Berlese funnel, the hole may be filled with a plug of similar



The author with insects collected in one night with a light trap.

turf from a nearby area. If extensive sampling is planned, it is usually best to obtain a number of plugs equal to the number of samples to be taken and accomplish replacement as the samples are being taken.

The standard cup changer is 4 1/4 inches in diameter; therefore, to convert the number of insects found per sample to the number of square feet, multiply by a factor of 10.15.

The **Berlese funnel** is a device in which heat from an incandescent light bulb is used to force insects from samples taken in the environment they inhabit. Primary components are a steep-edged funnel fitted with a 1/4-inch mesh screen on the inside, and standard jar cover and 1/2-pint jar containing ethyl alcohol at the base.

Berlese system

Samples of turfgrass are taken with a standard golf course cup changer and placed, grass side down, on the screen inside the funnel. The heat source is then positioned two inches above the top of the funnel and held in place for 24 hours. Insects forced out of the sample fall into the funnel and attached jar of ethyl alcohol below. About one inch of alcohol in the jar is sufficient. Since the collected material is preserved in alcohol, it may be examined at any convenient time and/or may be sent to an expert for detailed analysis.

Turfgrass samples taken for extraction should have no more than one inch of soil attached because excess soil interferes with heat penetration. In addition, the Berlese system is not effective in removing insects from the soil portion of the sample because they are unable to escape before the heat kills them. The device is most effective for insects that inhabit the thatch and soil surface (billbug adults, chinch bugs, sod webworms, cutworms, mites, springtails, etc.), or those on the grass blades (aphids, mites).

Hand lens

A 10× hand lens or larger magnifying glass is adequate for general examination of material collected, but detailed analysis requires the use of a microscope. Conversion to number of insects per square foot is achieved by multiplying the number obtained from a sample 4 1/4 inches in diameter by 10.15. Generally, those persons examining samples extracted with a Berlese funnel for the first time are amazed at the variety of insects and mites present.

Light traps are basically black lights with baffles that deflect insects into a container. Insects attracted to the light hit the baffles, fall in a funnel and into a container below. A plastic strip impregnated

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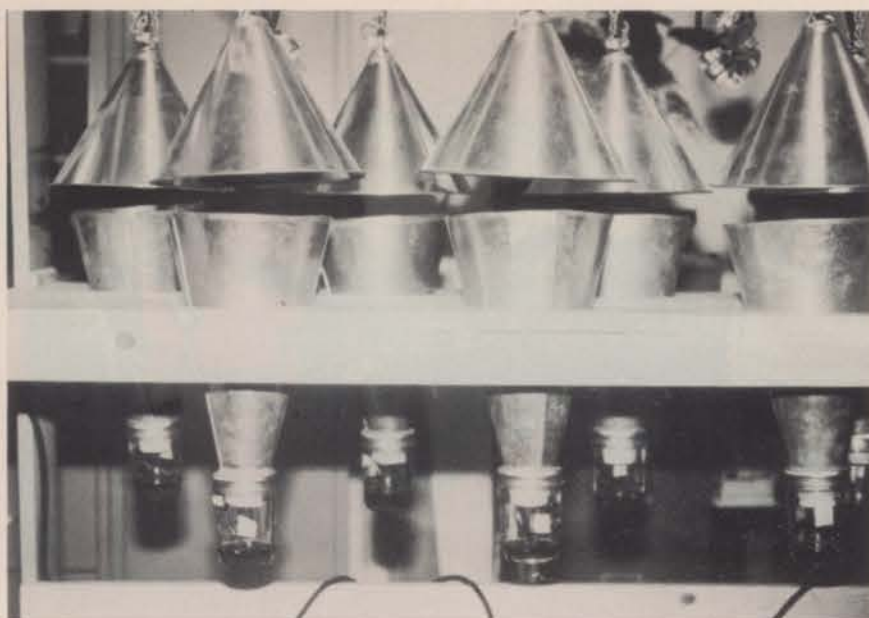
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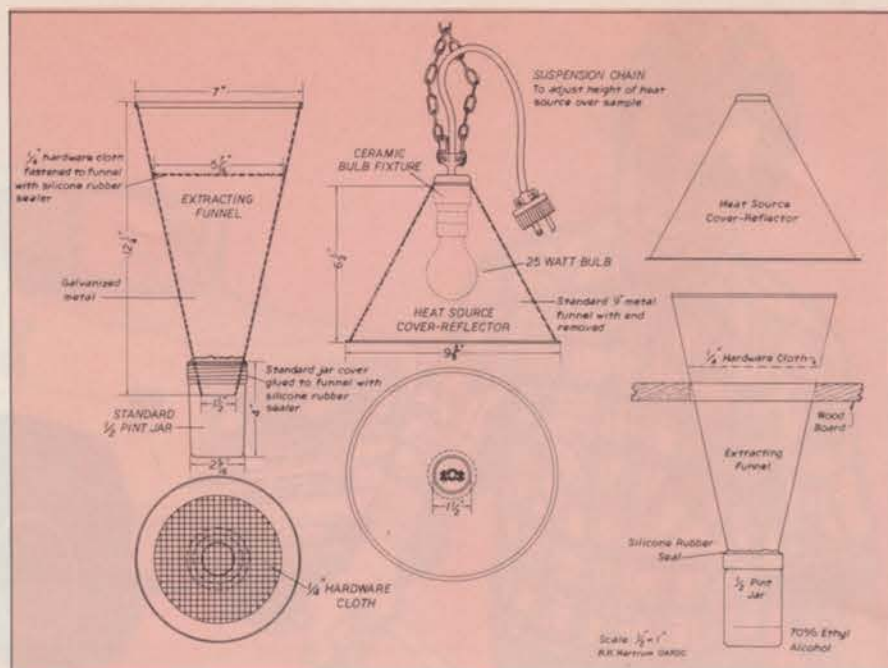
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Berlese funnel (above) and diagrammed (right).



with a volatile insecticide is placed in the container to kill the insects soon after they enter. The layman or amateur should be aware that thousands of insects can be collected in just one night during the summer. Professional expertise is usually needed to analyze the material collected.

The **pitfall trap** essentially consists of a plastic cup with a funnel and collection cup inserted inside. A hole the size of the cup is made in the turfgrass and the cup placed in the hole so the lip is at the thatch-soil level. Alcohol or water is placed in the collection cup. Insects crawling through the turf fall into the cup, through the funnel and into the collection cup of alcohol.

Trap contents should be emptied daily. Small shelters may be placed over the top of the trap to keep rain out. The pitfall trap can be used to monitor and detect the presence of chinch bugs, adult billbugs and many other insects.

Individual collection

An **aspirator** is a simple device consisting of a test tube-like container with a rubber stopper and two metal tubes inserted into the stopper. It is commonly used by entomologists to selectively collect individual insects. Operation consists of placing the plastic tube extension in the mouth and drawing air through it to create a vacuum at the tip of the other tube. The tube tip is then placed near the insect which is then drawn into the test tube. A fine screen over the intake tube prevents any foreign material from entering the mouth when air is drawn through the device.

The **hand lens** is a most useful tool for identifying insects in the turfgrass environment. Use of the hand lens also projects a professional image to those nearby. Generally, lenses of 10× (power) are adequate for most purposes. Such lenses can be purchased for \$5 or less.

Where to buy

Some of the equipment mentioned above is readily available from biological supply companies such as Ward's Natural Science Establishment, Inc., Rochester, N.Y., and Monterey, Calif.

Flotation is a method whereby water is used to detect the presence of insects such as the chinch bug. Cut out both ends of a

two-pound coffee can or similar container and remove the bottom of one end with tin snips to provide a sharp edge. The can is

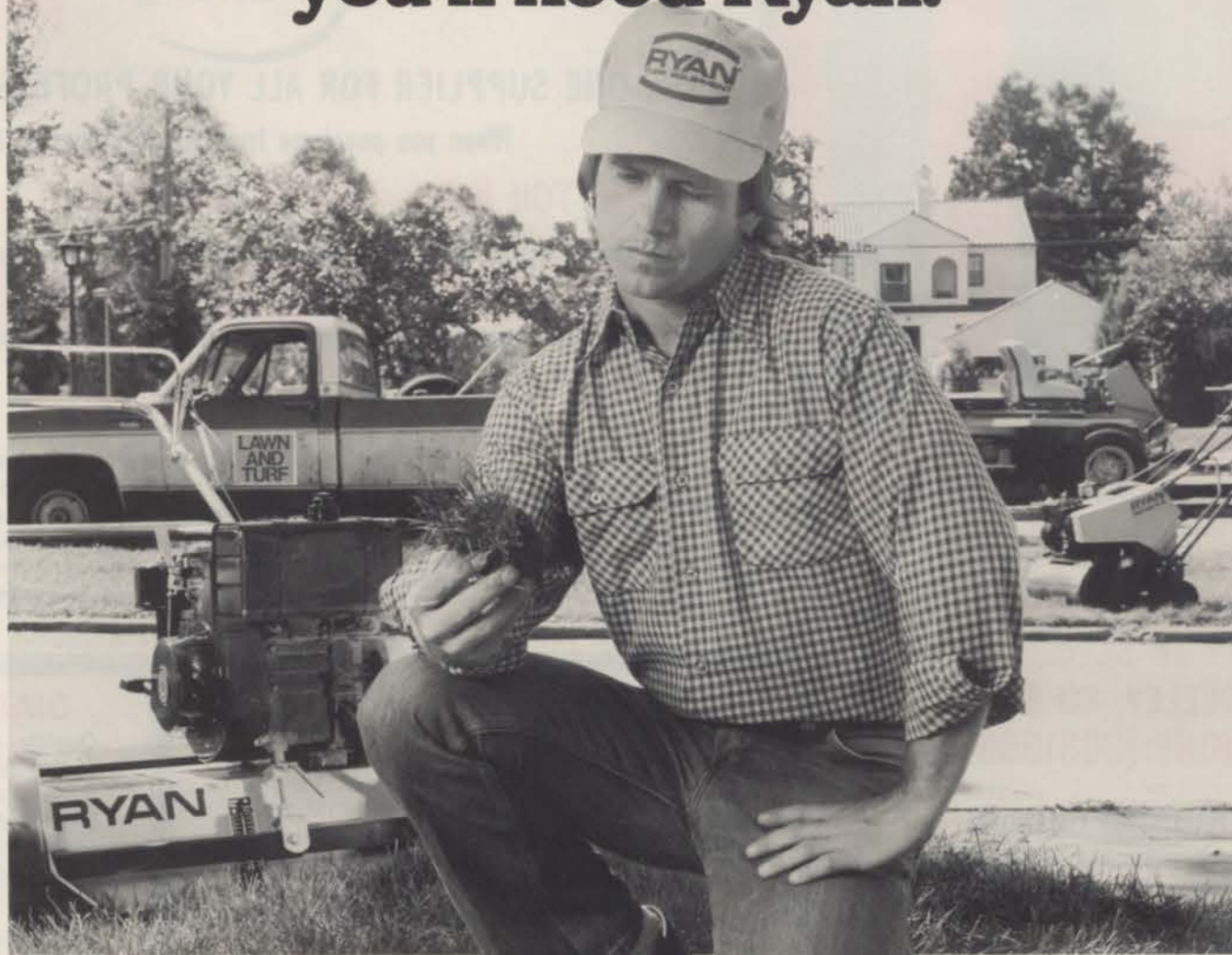
pushed into the turf in an area suspected of being infested with chinch bugs and water added to the brim. If the water recedes, more

should be added. If present, chinch bugs will float on the surface in five to 10 minutes.

Irritation is another effective

to page 24

Sooner or later you'll need Ryan.



Chances are it'll be sooner.

Today's sophisticated fertilizer, herbicide and insecticide treatments are making lawns and large turf areas more beautiful every season. But professionals know that thick, green lawns eventually develop thatch.

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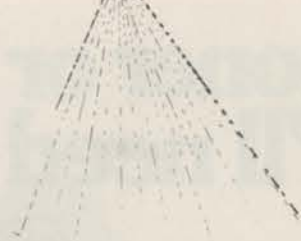
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Method for tank-mixing water insoluble N found

A method for preparing a water insoluble nitrogen suspension requiring little or no agitation once the reaction has taken place has been developed by the Hawkeye Chemical Company, Clinton, Iowa, according to A. H. Bowers, marketing manager.

Evaluated last year at the University of Illinois and Ohio State University turfgrass fertilizer trials, the procedure would enable the lawn care applicator to mix the solution right in his truck tank. The final product contains four percent N, eight-tenths percent P_2O_5 (and two percent K_2O if the neutralization procedure is included), with 25 percent of the N in water insoluble form and of

high activity index.

The optimum procedure described below is designed to produce sufficient liquid fertilizer to apply about one pound of nitrogen per 1,000 square feet on 40 lawns having average areas of 5,000 square feet. The procedure includes the use of an emulsion stabilizer and neutralization.

Optimum procedure

• Into a steel or plastic tank equipped with an agitator and having a capacity of 650 gallons or more, charge 500 gallons (4160 pounds) of water and then add 65 gallons (696 pounds) of Formolene 30-0-2 with thorough mixing at

ambient temperature. To this mixture add 11 pounds of Methocel A 15C (carboxymethyl cellulose), and four ounces of Dow Antifoam solution DB-31.

• While the mixture is well agitated, add six gallons (77 pounds) of phosphoric acid solution (54 percent P_2O_5) which reduces pH of the solution to about 3.7, and continue to mix for about 15 minutes. Then, terminate the mixing and allow the product to stand at ambient temperature overnight (approximately 16 hours).

• The following morning, start mixing the solution again. It will be noted that the formerly clear solution has changed to a white suspension. This suspension is neutralized to a pH of 6 to 6.5 by slowly adding 22 gallons (282 pounds) of 47 percent potassium carbonate solution, allowing the carbon dioxide formed to escape without excessive frothing. The mixture is then ready to apply.

It is most important to produce the suspension directly in the fertilizer application truck's tank, according to Bowers. About 95 pounds of finely ground agricultural lime may be substituted for the potassium carbonate in the neutralization and with adequate agitation in the tank it is usually not necessary to use the Methocel, particularly where no extended storage is planned.

The final solution

The final solution concentration is four percent nitrogen, eight-tenths percent P_2O_5 , and two percent K_2O . Satisfactory results may be obtained with more dilute solutions by adding more water. About 25 percent of the nitrogen will be converted to water insoluble nitrogen in 16 hours.

Also, it is important to note, with good agitation and controlled acid addition rates, it is not necessary to add the Anti-foam solution.

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Dr. G.W. Bennett and
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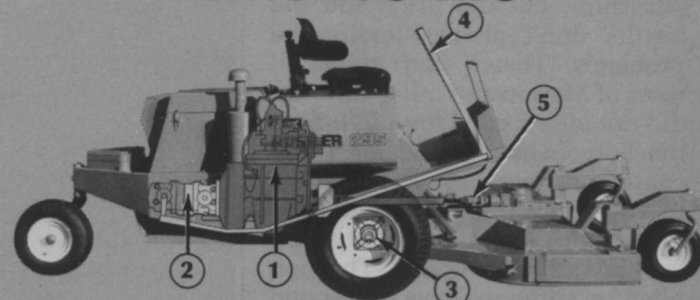
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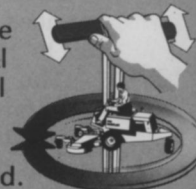
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Coring, slitting, overseeding to rejuvenate customer lawns

by Jim Mello, Nice 'n Green Lawn Care, Lisle, Ill.

All of us in the lawn care business have encountered yards with problems that we really cannot solve.

The environmental conditions may favor *Fusarium* blight which may cause severe damage on bluegrass. Very deep thatch is one of the basic causes of *Fusarium* blight on lawns. We also find *Fusarium* blight on lawns grown on peat sod, or laid on top of clay. The interface causes poor rooting and creates drought. *Fusarium* is a drought-related disease. Thatch is decomposing organic matter and thatch high in cellulose is slow to decompose.

The layering effect hinders the penetration of water. Once it dries out it is very difficult to get water to infiltrate to the rootzone for proper cooling.

The characteristic frog-eye effect of *Fusarium* makes it easy to diagnose on a hot summer day, however, symptoms appearing in the fall appear to be cool-weather brown patch.

Uses Dedoes unit

We have used fungicides against *Fusarium*, but the price and the results don't always justify the problems. Thatch and monocultures of Merion and other varieties did not offer a good foundation for the homeowner. Leaf spot, other common disease, especially as the weather gets hotter and disease approaches the melting-out stage, is very discouraging. Through plant breeding we have some good resistance to the melting-out stage. One solution to blight is to apply Tersan 1991 at a rate of eight ounces per 1,000 square feet (about 12 to 15 dollars).

The golf course people have a program of annual aerification to combat their thatch problem. They aerify twice a year for greens as well as fairways, depending on the course's budget. They try to prevent the thatch problem which is the basic cause of the disease. I have been using the Dedoes unit and a John Deere 400 tractor with separate hydraulic fluid reservoir and down pressure from the pistons actually uses the weight of the tractor for penetration (about 1,200 pounds).

Forward and reverse

A 10- or 12-horsepower unit could be used if weights are added. The transmission is a hydrostatic drive and can be used to aerify forward and reverse — a real time-saver. It does seem to aerify better in reverse. It does remove soil cores which act as a topdressing. One lawn was sod on muck, and as we aerified it, it rolled up like a carpet — as if it had grubs in it. They had problems two years before and to solve those problems they decided to put down new sod on top of existing sod.

There was a quarter-inch of soil and thatch layer and the soil beneath it. We aerified in August, and by going through both layers

we had good rooting in September and October. The machine is versatile. We go over the lawn about three times.

We have a slit seeding program for diseased lawns. For a 100 percent Merion lawn we introduce a blend of bluegrasses so there will be a degree of disease resistance. I have incorporated a blend of four bluegrasses and a perennial rye (15 percent) to be used on shade areas.

Many of the lawns are fine fescue which at one time were under elm trees that are no longer there. The fescue is not good in the sunny areas and so we incorporate bluegrass. Landscapers tend to sod in shade areas, and sometimes



Jim Mello

within a year or two they thin out, which proves they were the wrong grasses for those areas.

A blend of red fescues with Glade Kentucky bluegrass and perennial rye is desirable. With the slit seeder we can apply seed to the desired areas, sunny or shady. The slit seeder has tines or blades in the front which cut a slit in the thatch

and bring up a lot of debris in a lawn with heavy thatch. In the back you have another row of discs which ride in those slits to keep them open. The seed drops from a hopper into the slit.

Core aerifying prior to slit seeding is better than just slit seeding. It has to do with reducing the sod layer. In some lawns with heavy Merion, aerification and the vertical mowing seem to rejuvenate the lawn. The debris from slit seeding needs to be removed. Slit seeding in the spring produces a lot of weeds — broadleaves, crabgrass and winter annuals. Any disruption of the surface invites weeds, so the scheduling of the operation is important.

The best time to schedule this operation is August, September or October. In areas where *Fusarium* blight is heavy, it is better to seed in early August. Even though we will have some weed problems we do some spring slit seeding because of the few lawns that are in such bad shape.

to page 28

How to make a great crabgrass herbicide even better for turf.

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USDA discovers method for seeding zoysia grass

Zoysiagrass is a valuable warm season turfgrass prized for its thick mat and resistance to drought, disease, and weeds. Zoysia's use, however, has been severely limited by its inability to be adequately spread by seed.

Now, however, USDA scientists have discovered a method of propagating zoysia by seed, and that will be good news to most lawn care businessmen maintaining zoysia.

Also known as Korean or Japanese lawngrass, zoysia is well adapted to conditions in much of the United States. Its slow growth and tolerance to many stresses

make it one of the least expensive turfgrasses to maintain. But establishing zoysia has required drilling small zoysia plants or "plugs" into the ground every six to 12 inches. The plugs take two years to completely fill in an area.

KOH solution

The technique for growing zoysia was first suggested by Dr. Doyi Y. Yeom on sabbatical from Seoul National University in Korea. Yeom and research agronomist Jack Murray of BARC's Field Crops Laboratory found that by soaking seeds in a 34 percent potassium hydroxide (KOH) solution for 25 minutes and then exposing them to 48 hours of low intensity light, they could induce more than 90 percent of the zoysia seed to germinate within six days. Untreated seed takes six weeks to reach 30 percent germination.

"Seeding represents a tremendous increase zoysia's usability," said Murray, while recently explaining his findings at a USDA turfgrass field day in Beltsville, Md. "It represents a great boost in our effort to reduce costs and resources needed by the lawn care businessman."

Rapid germination

The KOH solution breaks the seed coat and eliminates a growth inhibiting enzyme present in the seed, he explained. The low intensity light stimulates rapid and

to page 25



Members of the Virginia Turfgrass Council for the coming year are, from left, Peter H. Connelly, Roanoke; Jack L. Kidwell, Culpepper; Jack Henry, Richmond, president; Gus G. Constantino, Richmond; Robert P. Ruff, Jr., Wintergreen, secretary-treasurer; Richard Fisher, Charlottesville; David S. Fairbank, Arlington, vice-president; and Cecil Bland, Virginia Beach and Suffolk. Gilbert W. Barber, Richmond, was not present.

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LEHR from page 5

prohibited from dissuading employees from joining the National Guard or threatening to change an employee's job status if an employee becomes a member of the Guard.

New York: Employers are now required to post publicly their policies on holidays, vacation, sick leave, personal leave, and standard hours or work in their business. This statute requires employers to post the information in locations frequented by the employees, such as company bulletin boards, or, in the alternative, furnish employees with a handbook or written statement of the company's policy.

Tennessee: The Tennessee legislature repealed its law prohibiting work on Sundays.

Lawn care employers should check with their local attorneys regarding other state legislative developments which would affect the lawn care businessman. This summary is only some of the major laws, and it is not intended as a complete representation of the new legislative developments which lawn care employers need to observe.

Richard Lehr is an attorney with the Birmingham law firm of Sirote, Permutt, Friend, Friedman, Held & Apolinsky and a frequent contributor to *Lawn Care Industry*.

Lawn seminar offered by Diamond Shamrock

"The ABC's of Successful Lawn Care" might well be the title for Diamond Shamrock Corp.'s new seminar which is currently being offered to lawn care companies, the Cleveland-based company said.

Designed as a total package on fungicides, pre-emergence and post-emergence herbicides, the seminar is an educational and informative tool on home lawn turf.

The seminar will be presented by Gary Stewart, who is a turf specialist with the Agricultural Chemicals Division's Northeast region. Before coming to Diamond



Gary Stewart

Shamrock, Stewart worked for O. M. Scott & Sons, Marysville, Ohio in sales and as a research biologist for nine years.

Initially, Stewart's presentation will concentrate on cool-season grasses. Additional information on the seminar can be obtained by calling 216-464-5620.

Fungicide emphasis

Stewart's program places special emphasis on fungicides, as the most common diseases are discussed in depth, along with symptoms for diagnosis, plus control and prevention.

The seasonal occurrence of turf diseases, environmental conditions like temperature and moisture that are conducive to the development and spread of disease, and control measures, both mechanical and chemical, that can be applied to prevent loss of turf, are all thoroughly discussed.

For a lawn care company, the use of fungicides as part of a total lawn care program can provide some overwhelming advantages, the company said.

First of all, a fungicide program provides the company with more satisfied customers and this results in fewer service calls. A satisfied customer is likely to be a retained customer. The company can, therefore, apply its advertising dollars toward obtaining new customers as opposed to retaining the old.

The fungicide program can also eliminate losing customers through an inability to treat for disease. Without the program, customers could become do-it-yourselfers, going to a garden center for the needed chemicals, the company said. On the customer side of the ledger, a fungicide program provides a healthier, denser, more vigorous turf with fewer weed problems.

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If the turf area you manage is over 15 years old, chances are it is a mixture of poa annua, wild bentgrass and other questionable turf species.

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University of Illinois - Touchdown was outstanding in its ability to out compete Poa annua.

Ohio State University - America ranked first out of 30 commercial bluegrass varieties in incidence of Sclerotinia Dollar Spot. (At low, medium, & high fertilization levels.)

Ohio State University - Fiesta ranked number 1 out of 22 commercially available perennial ryegrasses in overall turf quality for entire season.

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With this in mind, it might be a good idea to compare your plan with a survey provided by the Bureau of Labor Statistics on average employee benefit programs. The report states that:

- Nearly all employees have paid holidays, usually nine to 11 per year. Typical paid vacations are five days for employees with less than a year's service, 10 after one year, and 15 after 10 years.
- Sick leave plans range from two days per year, to six months or more. 83 percent of technical employees are covered by sick leave plans and 80 percent of administrative personnel, and 37 percent of production workers are covered.
- Two-thirds of employees receive income while absent due to disabilities, half for up to 26 weeks, and one-fifth up to 52 weeks.
- 97 percent of the workers studied are covered by health insurance plans, with employers paying the total bill in 75 percent of the cases.
- 97 percent of employees have pension plans, and nearly all workers are provided with life insurance.

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LCI 32

EFFICIENCY *from page 1*

treatments before cutting service can help route efficiency.

• Hydro Lawn's decision as to whether or not to add a truck or an assistant applicator is based on a break-even point of 58 percent.

Richards said that his company decreased its rate of gallons of fuel consumed per treatment between 1980 and 1981 by 8.8 percent, going from 0.624 gallons per treatment to 0.569 gallons per treatment.

The company has three methods of running trucks and their sprayers. The first is a gas truck with a gas pony engine. The second is a diesel truck with a power take-off. The third is a diesel truck with a diesel pony engine.

Miles per gallon with the first method was 3.81 in 1980 and 4.09 in 1981, an increase of 7.3 percent.

Miles per gallon for the second method was 5.43 in 1980 and 5.92 in 1981, for an increase of nine percent.

Miles per gallon with the third method was not used in 1980, but came in at 8.45 in 1981, the highest of the three. He said Hydro Lawn shoots for spending no more than four percent of its gross per year on fuel costs.

Index variety

Richards compared his company's yearly average per service vehicle in terms of number of treatments, square feet serviced and amount billed for the years 1978 through 1981.

In 1978, the average Hydro Lawn service vehicle handled 2,330 treatments, an average of 16,331,000 square feet, for an average billing of \$57,771.

In 1979, the average service vehicle handled 2,950 treatments, serviced 20,399,000 square feet, and billed \$85,668.

In 1980, the average service vehicle handled 3,018 treatments, serviced 20,885,000 square feet, and billed \$95,258.

In 1981, the average service vehicle handled 3,211 treatments, serviced 22,107,000 square feet, and billed \$114,615.

The billing figures include price increases. He also said that between 1978 and 1979, Hydro Lawn went to more service vehicles to handle special jobs and problem lawns, and thus got more production out of its main production trucks without adding to its fleet.

58.8 miles per day

Richards next compared his application trucks in terms of miles driven per day, number of stops per day, and miles per stop. These figures were also compared for the years 1978 through 1981.

In 1978, the average Hydro Lawn truck drove 58.8 miles, handled 10.7 treatments, for an average of 5.6 miles per stop.

In 1979, the average truck drove 56.8 miles, handled 15.8 treatments, for an average of 3.6 miles per stop.

In 1980, the average truck drove 42.2 miles per day, handled 16.1 treatments, for an average of 2.6 miles per stop.

And in 1981, the average truck drove 40.4 miles per day, handled 17.3 treatments, for an average of 2.5 miles per stop.

He said there are two ways a lawn care company can go to increase production—either add a new truck, or add a helper to a route. He said it takes about an average of \$19,000 to pay an experienced applicator a year, including overhead and benefits. He

of adding a whole new truck, it would cost \$29,000.

With the second method of adding a helper, he determined that his company can get 70 percent increased productivity for an additional cost of 55 percent.

"Hydro Lawn's decision as to whether or not to add a truck or an assistant applicator is based on a break-even point of 58 percent."

also said a two-ton diesel truck costs about \$10,000 a year to run, with the capital cost depreciated over five years. This totals \$29,000 a year for a man and a truck.

He also said it costs about \$16,700 a year to pay an assistant applicator, including overhead and benefits. With the first method

Using an example of a truck that is billing \$60,000 a year, he said that in this case adding a new truck would obviously increase production \$60,000 a year, for a return of \$1.07 per dollar. Using this example and adding a helper, he said increased billings would total \$42,000.

Using an example of a truck billing \$80,000, the return on the dollar of adding a new truck would be \$2.75. By adding a helper, increased billings would be \$56,000, or a return on the dollar of \$3.35.

Using an example of a truck billing \$100,000, the return on the dollar of adding a new truck would be \$3.45. By adding a helper, increased billings would be \$70,000, or a return on the dollar of \$4.19.

He said there are many determining factors as to whether a new truck or just a helper should be added, including route density and number of large commercial jobs. But in most cases, adding a helper is more profitable than adding a truck. He said that if by adding a helper, the company can increase billings by at least 58 percent, they will do it. He also said that in most cases, the assistant applicator is hired to work on a rotating basis.

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INSIDE THE INDUSTRY



Jim Hughes

At the recent Professional Lawn Care Association of America meeting in Louisville, Ky., Jim Hughes, fleet manager at the ChemLawn Corp., Columbus, Oh., addressed lawn care businessmen on a subject of increasing importance to those strapped by high interest rates and creeping inflation — fuel efficiency.

Hughes says that while many factors contributing to the high cost of fleet management are inflexible, including lease, insurance, depreciation, and finance costs, substantial savings can be gained through the awareness of some simple elements of fuel conservation. Among these he cites studies done at the ChemLawn Corp. of speed vs. fuel consumption, tire inflation vs. fuel consumption, and diesel, gasoline, and propane efficiency quotients.

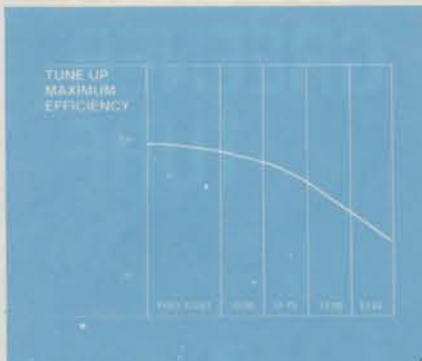
His thoughts and conclusions should be of interest to all lawn care professionals interested in long range fleet efficiency. As one lawn care businessman reported in this magazine last year, motor fuel costs have soared well over 300 percent in the last seven years.

Indifference to the points raised in Hughes's report may cost you even more. Here's his report.

Many of us have trucks that are used on a seasonal basis. That means that the winter months are spent preparing for spring and hopefully we start in the spring with our trucks in the best possible condition. But as the busy season progresses, oftentimes these trucks may be neglected and the tune-ups that we did in the winter may need to be repeated.

We may even find that our priorities are changing. Tires may not be checked as often as they should, and in late summer we're hoping that the truck may just make it a few more weeks until winter when the whole process can be repeated.

Usually when we think of an efficient operation, the first thing that comes to mind is tune-ups and saving fuel. In fact the Car Care Council of America estimates that in the United States alone we waste about five billion gallons of fuel in cars and trucks not maintained on a timely basis.



As the cost of fuel rises, the greater the need to keep engines at top efficiency.

The point we need to consider is how often to service an engine. Our owner's manuals may give us guidelines, but they really need to be adjusted to the frequency of use and especially to the price of fuel. As the efficiency of the engine after a tune-up decreases we need to consider the price that we're paying for a gallon of fuel and how it relates to that service schedule.

The more we pay for fuel the more important it becomes to keep the engine operating efficiently, and that can be especially impor-

tant if you're using an engine-driven PTO-powered pumping system. If you've been measuring your service intervals by miles, engine hours, gallons of fuel used, or even acres sprayed, it would reflect a better indication of the proper service intervals.

The point is that we need a system that will allow us not to contribute to that five billion gallons of wasted fuel each year. At ChemLawn, we've been using some fuel monitors on a few trucks to help us establish our service intervals. They not only allow us to observe the efficiency level, but also give us a better idea of how fuel is being used.

It stands to reason that as rpm's increase, so does fuel consumption. But what's the first thing that's likely to happen out on the route if someone has a faulty pump or regulator? You tend to increase the rpm's. That tends to solve the problem, but in that case you may run the rest of the season using up to a half a gallon more fuel for every hour that the engine runs.

Tire pressure vs. consumption

Now, unfortunately, we still have quite a few people that only maintain a tire when it's flat. But as we all know, proper tire inflation is crucial to tire life. The loss of just eight pounds on a truck tire can reduce its life over 20 percent.

But besides shortening the tire's life, underinflation also can affect mileage. In this test we measured the fuel efficiency of a loaded truck with the tires properly inflated. Then the pressure was reduced until the tires started to look as if they were low. The results showed

a loss in fuel efficiency of about 25 percent during suburban driving.

It should be emphasized that the look of a truck tire can be deceiving. A 10-ply truck tire at 40 pounds does not look much different than the tire at 80 pounds even though it is 50 percent less inflated. In other words, a tire that is half full does not necessarily look like it is half flat.

Contact area decreased

Not only does tire inflation affect tire life and fuel efficiency, but also handling and stopping ability of the vehicle. For example a truck tire of standard size usually has about 30 square inches of tread touching the road. If it is not inflated properly, the contact area is decreased and the penalty to you is an unsafe vehicle.

And safety is of the utmost importance in this industry. A truck that is not safe due to improper maintenance will not only affect the lives of your crew, but can also dramatically increase your running costs. But no amount of policy control concerning truck safety, tire inflation, route planning or maintenance can avoid the fact that the ultimate responsibility lies with the driver himself.

Most companies that have first-class fuel programs have the ability to measure the full fuel usage of each truck and the amount used by each driver. This not only allows them to spot trouble with their trucks and equipment, but it also allows each driver to measure his own individual fuel usage.

And when you ask an employee to conserve fuel, it is wise to recognize him for his efforts, be-

Speed	1200 Gallon Load Tires at 80 PSI	1200 Gallon Load Tires at 40 PSI
35 MPH	8.8 MPG	7.7 MPG (-12%)
45 MPH	8.0 MPG	6.5 MPG (-19%)
55 MPH	6.9 MPG	5.9 MPG (-17%)
Suburban	6.3 MPG	4.7 MPG (-25%)

cause that extra effort and his driving skills have the largest single influence on fuel consumption. A truck that is driven properly has half the repair costs that come with abuse. And if he's driving to save fuel and reduce repair costs, then automatically he is a safer driver.

Speed vs. consumption

Everyone is familiar with the speed versus fuel usage comparisons. The faster you travel, the more fuel you use. That's the reason we have the 55 mile per hour speed limit. We can not only save fuel by watching our driving habits, but by not hauling any more material than is necessary for that day's work.

Our tests with trucks at empty, half, and full loads showed that the faster we traveled and the more weight we had, the more fuel we used. These constant speed comparisons show that we lose a few tenths of a mile per gallon with a heavier load.

Speed	Empty	600 Gallons	1200 Gallons
35 MPH	10.2 MPG	9.8 MPG	9.4 MPG
45 MPH	8.6 MPG	8.2 MPG	8.0 MPG
55 MPH	7.2 MPG	7.2 MPG	6.9 MPG
65 MPH	6.2 MPG	5.7 MPG	5.5 MPG

But the real cost is attributable to suburban driving. There you can use 10 to 15 percent more fuel for every extra ton of material that you haul on a route. Assuming that you have a truck that is returning at the end of the day with two or three hundred gallons of material that went unused, over the course of the season that truck will haul over 150 tons of unused material. With a little extra planning on routes and the material that's going to be required for that day's work, you could save quite a few gallons of fuel.

Alternative fuel sources

When we can afford to buy new trucks in the lawn care business, we unfortunately cannot afford to downsize to a more efficient model. However, there are some alternatives. Today you can get a midsize truck with a choice of engine. Our experience has shown that our diesels are using about 47 percent less fuel than our gasoline trucks of comparable size. Propane trucks in the same weight category are using about 19 percent more fuel.

To understand the reasons for

that difference, it is important to look at the characteristics of the fuels, themselves. Diesel has more BTU's per gallon and it is able to convert about 40 percent of that available energy to supply wheel horsepower. Propane, on the other hand, has less BTU's than gasoline, and it can be less efficient depending on the type of conversion and the particular engine that's being used on it.

This means that diesel even at the same price per gallon as gasoline is still a bargain. You get more energy and you are using it in a more efficient engine. That characteristic is one of the reasons that there will be an increased use of diesels in mid-range trucks in the future. In fact, market predictions indicate that 50 percent of Class 6 trucks sold by 1985 will be equipped with diesel engines.

In anticipation of that new market, there is already a whole new class of mid-range diesels available. If you have been shopping for new trucks lately, you have probably already considered many of

these, in which case your main concern is probably reduced fuel consumption. Depending on your operation, you can figure on using about half as much diesel as you would gasoline.

There is less maintenance with a diesel engine, as well as the lack of a carburetor and ignition system. You can usually count on the residual value of that truck to be greater. Also, you can depend on the life of the vehicle to be greater. The disadvantage, however, is the price of diesel. You will end up paying much more for the engine, a large part of the cost being absorbed by the heavier drivetrain. Also, transmissions and the rear end need to be heavier to handle the increased torque.

While it is true that there is less maintenance with a diesel engine, it is critical that the required maintenance be done on time. If, as with your gasoline trucks, you may be having problems attending to regular tune-ups and oil changes until you get some slow time, diesels may not be the answer for you. With a diesel engine, a short delay of routine maintenance could cost you considerably more in major repairs.

Fuel	Energy	Efficiency
Diesel	137,000 BTU's/Gallon	40%
Gasoline	123,000 BTU's/Gallon	33%
Propane	97,000 BTU's/Gallon	25-30%



On a standard 1200 gallon rig at full load, fuel efficiency can decrease 20 percent during an increase from 55 to 65 mph.

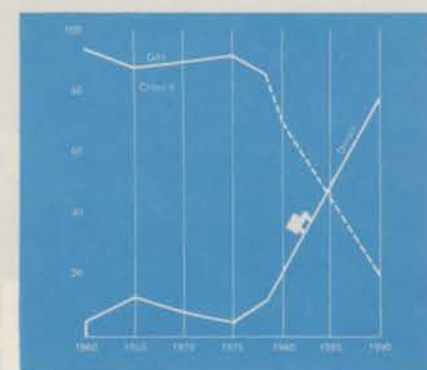
Our experience with propane fuel has shown that we use an estimated 19 percent more propane than gasoline when driving conditions and route lengths were equal. However, the important point to consider is the price, and today there is a wide range of prices for propane depending on the part of the country you are from. A fuel that is priced up to 50 cents per gallon less in some states deserves some consideration.

Two alternative systems

There are two alternative systems to consider in using propane fuel — straight propane or dual fuel. The advantage of dual fuel is that it allows you to burn both gasoline or propane at the flick of a switch, enabling you to increase your driving range significantly. Its disadvantages are that it is less efficient.

For propane to be as efficient as possible, the engine needs to be tuned to run off propane. Timing, spark plugs, and timing advance curves all need to be changed. And with dual fuel, you are adding a second fuel system which could increase your fuel system maintenance costs.

If you are going to convert to a propane system, straight propane is by far the most efficient. But the real disadvantage is that you have a very limited driving range. You just don't find a propane filling station on every corner.



The overall efficiency of diesel as an alternative fuel has increased dramatically.

At ChemLawn we are using a straight propane conversion for gasoline engines. It begins with the addition of a sixty gallon tank which we have found is adequate for most any route. From the tank, the propane flows to a fuel lock-off which is nothing more than an electric valve which allows the fuel to flow when the ignition key is turned on.

From the lock-off the fuel enters a converter that changes the liquified propane to a gas and also regulates the pressure. The final

stage of combustion is carburetion, a much simpler one than in a gasoline engine since propane is already a gas and does not have to be vaporized.

Stationary Test Gasoline Engine 345 C.I.D.		
RPM	PTO Off	PTO Pumping System On
600	0.6 GPH	0.9 GPH
800	0.8 GPH	1.1 GPH
1000	1.2 GPH	1.3 GPH
1300	1.3 GPH	1.4 GPH

An important point to consider in any switch to propane fuel is storage capability. It allows you to have an outside fuel storage when you may not want to invest in an underground tank. Usually these storage tanks can be supplied by your local distributors. They can also be leased, and if your volume is high enough, they can be supplied free.

In conclusion, the expense of operating trucks can be divided into lease, purchase costs, interest, depreciation, repair costs, maintenance, fuel, and accident and insurance costs. A review of your maintenance procedures in driver training should be made if you want to reduce costs on existing or new equipment.

A truck that is maintained or driven properly will not only reduce fuel costs, but repair and accident costs will be reduced as well. If a truck is efficient and dependable, extending its life may help to delay the final costs of replacement, thus reducing the entire cost of your operating overhead.

The price of public image

Considering all of these benefits, it would seem that a training program covering proper truck starting and stopping techniques, maintenance of constant road speed, progressive shifting, driving at reduced speeds, and awareness of idle time, should be of the first order. Each person that is driving a truck should be aware of the amount of fuel wasted by not following these simple driving precautions. Taking the time to cover some of these training points will not only reduce costs, but it may allow your equipment to last longer. And with today's equipment costs, plus interest rates, an extra season or two on all your trucks will look very attractive.

Perennial ryegrasses come into their own

The development of improved, turf-type perennial ryegrasses, *Lolium perenne*, cultivars with fine texture and smoother mowing quality has led to their recent and widespread acceptance and utilization, according to Peter Dernoeden, extension turf specialist at the University of Maryland.

Traditionally, the perennial ryegrasses were used to provide rapid soil stabilization in situations where erosion potential was high. Perennial ryegrasses were also recommended for planting during environmental periods considered unfavorable for the establishment of Kentucky bluegrass.

Today, the improved perennial ryegrasses are frequently used to overseed Kentucky bluegrass turfs that have been severely injured by diseases, insects and environmental stresses. In Maryland, the perennial ryegrasses are also used for overseeding bermudagrass athletic fields. In more southern regions, it is used to overseed bermudagrass putting greens.

Low mowing heights

Overseeding bermudagrass sports turf is necessary because this turf species turns brown and enters a dormant state with the onset of cold temperatures in late autumn. In Maryland, bermudagrass does not green-up until early to mid-May. Overseeding is performed about mid-September in Maryland. The overseeded perennial ryegrass provides an aesthetic cover, and also helps protect dormant bermudagrass from wear injury.

Perennial ryegrasses will withstand the low mowing heights employed on bermudagrass fields, 0.5 to 0.75 inches. Springtime transition of the field back to bermudagrass is important. After completion of spring sporting events, these fields are treated with pronamide, trade name Kerb. Pronamide is a herbicide which selectively controls perennial ryegrass, other cool season grasses and many broadleaf weeds in a bermudagrass turf.

Rapid, dense cover

By removing perennial ryegrass, competition is reduced and the bermudagrass more rapidly fills into areas left barren by wear injury.

The improved perennial ryegrasses are also gaining acceptance as sports turf on athletic fields under constant usage. In the common situation where athletic fields are used continuously from spring to early winter there is no opportunity for the field to be properly renovated.

Because perennial ryegrass produces a rapid and dense cover with good wear tolerance, it becomes the logical turf species to use. One criticism of perennial ryegrass as a sports turf is that its shiny succulent foliage creates a slippery surface, especially when moistened.

The improved turf-type ryegrasses exhibit improved mowability, disease resistance, and environmental stress hardiness. The advantages that perennial ryegrass offers include: rapid and dense cover; early spring green-up (a disadvantage in some situations); good wear tolerance; good partial shade tolerance; reduced thatch proneness; and it grows well on poor soils. Despite these obvious benefits, monostands of perennial ryegrass are seldom recommended as a lawn turf in Maryland.

The major problems associated with perennial ryegrass continue to be in mowability, disease resis-

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COST CUTTINGS

Insuring your teenage drivers

Many lawn care businessmen have all their automobiles licensed and insured through their businesses. There are many good reasons for doing it this way, but there are two important points to be considered. The first relates to the loss ratio situation, and the second to coverages.

From the loss ratio standpoint, there are many instances when teenage drivers have had accidents which caused the insurance premiums of the entire business operation to increase sharply. Young drivers, particularly males between the ages of 16 and 20, are charged horrendous rates for a specific reason — they have a lot of accidents. Before you put them on the corporate policy, you might think about the potential demise of your good loss ratio should one of them be involved in a serious accident.

The coverage consideration is one area in which the business auto policy is, by design, not as broad as the personal auto. Coverage is available for all company owned, hired or leased units, but it does not cover persons other than the actual named

to page 26



How many turf in this

Here's a clue. D-z-n® Diazinon® controls every insect you see here, from the root-eating white grub to the juice-sucking chinch bug. In fact, D-z-n Diazinon has the biggest label of any turf

insecticide. And that makes it the perfect choice for broad spectrum control in both commercial and residential turf.

Need another clue? D-z-n controls damaging worms including

NEWSMAKERS

The appointment of Richard B. Stahl as sales director of **O. M. Scott & Sons Company**, Marysville, Oh., was announced by William E. Englehart, senior vice president and director of marketing/sales.

Vern Pieper is owner of **Spring-Green Lawn Care**, Madison, Wis., Ray Vepel is owner of **Spring-Green Lawn Care**, Appleton, Wis., and Mike Sullivan is owner of **Spring-Green Lawn Care**, Green Bay-Manitowoc.

In the position, Mr. Stahl will have the full responsibility for all sales activities for **Scott ProTurf** products.

Bob Briand has been named district manager for the Pacific Northwest turf sales region of the **Rain Bird Sprinkler Mfg. Corp.**

In his new position, Briand is responsible for the continued development of the market throughout Oregon, Washington, Alaska, Idaho, Montana, Utah and northern Wyoming.



Briand



Kaufmann

Dr. John Kaufmann has left **Michigan State University**, where he was professor of turf management under the direction of Dr. James Beard, and will join the

Monsanto Company, St. Louis, Mo., as senior research specialist. He will be responsible for developing new growth regulators for use on wheat.

Nominations have been submitted for the **Michigan Turfgrass Foundation** Board of Directors. The candidates are: Kurt Thuemmel, Walnut Hills Country Club, for Western Michigan G.C.S.A. Representative; Donald Benham, **Benham Chemicals** for Commercial Supplier Representative; also, John Read, **Spartan Distributors**, for Commercial Supplier Representative; Stephen S. Brown, **True Green Corp.**, Tom Reed, **Tri Turf**, Gerald Gill, **Tam-O-Shanter Country Club**, and Robert W. Hope, **Kent Country Club** for At-Large Representative. The nominations are being submitted by the nominating committee appointed by president James Timmerman.

Michael Kaufman is area manager for **Barefoot Grass Lawn Service**, Omaha, Neb. Pat Norton

is director and Don Brattain is owner. The company offers granular chemical lawn care application services.

Reg Robertson is owner of **Complete Lawn Care**, Olanthe, Kan. Ron Shultz and Monty Block are also affiliated with the company which offers both liquid and granular chemical lawn care and mowing-maintenance services.

William P. Strauss has joined the **Kohler Co. Engine Division** as a sales specialist for Kohler's new line of liquid-cooled in-line engines.

Strauss's appointment was announced by John O. Kohl, the division's director of customer service. As a sales specialist, Strauss will work with Kohler's engine distributors as well as equipment manufacturers to promote an effective sales and service network throughout North America.



Strauss



Congdon

Timothy Congdon has joined **Simplicity Manufacturing Company**, a leading producer of riding mowers, lawn and garden tractors and snow clearing equipment. He will be responsible for marketing the firm's complete line through a network of servicing dealers throughout the state of New Jersey. Simplicity is an **Allis-Chalmers** company, and will be celebrating its 60th anniversary this year.

The **Outdoor Power Equipment Institute** has announced the selection of Robert E. Bergen, division manager of **FMC's** Outdoor Power Equipment Division to their board of directors.



Bergen



Kocun

Frank J. Kocun has been appointed president of **Penick Corporation**, an Affiliate of CPC North America. Dr. Kocun was previously vice president, sales and marketing, for **A. L. Laboratories, Inc.**, Englewood Cliffs, N.J., and prior to that position served as business manager-specialty products for **Corn Products**, a unit of CPC.

The **Parker Sweeper Company**, Springfield, Oh., has appointed Alex Coles as their district sales manager for the south central United States. Coles will be responsible for both turf and industrial equipment sales to distributors in Texas, Oklahoma, Arkansas, Mississippi, Louisiana, and western Tennessee.

He was formerly associated with **International Harvester** and **Jacobsen/Texton** in a sales management capacity and has over 20 years sales experience in the lawn



insects are hiding picture?

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PS: You'll find the answer below.

CIBA-GEIGY

and garden and outdoor power equipment industry. Coles resides in Memphis, Tenn.

Duane R. Saxton is president of **Liqui-Lawn Co.**, Lewiston, Idaho. The company offers liquid chemical lawn care application services.

Bob Farley is vice president of **Four Seasons Lawn Care, Inc.**, Bowling Green, Ky. The company

offers both liquid and granular chemical lawn care and seeding services.

James V. Therkildsen is owner and Linda Therkildsen is office manager of **C. B. Therkildsen and Sons Landscape Maintenance**, Omaha, Neb. The company offers both liquid and granular chemical lawn care and mowing/maintenance services.

James DiCecca is president and

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This heavy-duty self-propelled walk behind machine can seed, fertilize and aerate a lawn efficiently, conserving precious time and expensive materials. It works in hard to service areas like around pools, trees and steep hills. Power is supplied by a gear reduced 3 h.p. Briggs & Stratton engine and is controlled by levers mounted near the guide handles.

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Dr. Victor B. Youngner, (right), professor of agronomy at the University of California - Riverside, receiving Landscape West magazine's Man of the Year award from publisher Denne Goldstein. The UCR professor is credited with major advances in turfgrass breeding, plant identification, weed control, wear resistance, and salt tolerance.

David DiCecca is secretary of **Waterdown Garden Supplies,**

Ltd., Waterdown, Ontario.

Robert Wetsel, senior vice-president, **Wetsel Seed Company**, Harrisonburg, Va., was just elected president of the **Atlantic Seedsmen's Association**, which is the trade association representing the lawn, garden, farm seed and allied industries in the northeast U.S. The election took place at the 29th Annual Meeting held at the Providence Biltmore-Plaza Hotel, Providence, R.I.

Dr. Victor B. Youngner of the **University of California**, Riverside, was honored recently as "Man of the Year" by **Landscape West & Irrigation Magazine**.

Denne Goldstein, the magazine's publisher, presented the award to the UCR professor of agronomy during a special ceremony at the **Southern California Turf & Equipment Exposition**, Costa Mesa, California.

Dr. Dale E. Wolf, vice president, Biochemicals Department, **E. I. de Pont de Nemours & Co.**, Wilmington, Del., was elected to serve as Chairman of the Board of Directors for the **National Agricultural Chemicals Association** during the next 12 months.

Dr. Wolf, former NACA Board vice-chairman, succeeds Nicholas L. Reding, group vice president and managing director of **Mon-santo Agricultural Products Co.**, St. Louis, Mo., who served as board chairman since January 1980.

The following have joined **Lakeshore Equipment & Supply Co.**'s LESCO products division sales team: Mark Sligar; Loren W. Nagy, salesman for northern Illinois and Wisconsin; James L. Johnson, salesman for western Michigan; Michael E. Hannigan, salesman for the new LESCO Truck route in Massachusetts and Rhode Island; and Tracy E. Earles, salesman for the LESCO Truck route in Indiana and Illinois.

Leonard F. Sievers, Crystal Lake, Ill., has been appointed as a district manager for the **Outdoor Power Equipment Division of J. I. Case**, according to an announcement by Mike Hirschman, sales manager. Sievers will be responsible for the marketing objectives of Case lawn and garden tractors and attachments in northeast Illinois.

Dixon Industries, Inc. has announced the appointment of **John Reiner & Co., Inc.**, Carlstadt, New Jersey, as the new Distributor of **DIXON ZTR** mowers for the New

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England area, Hudson Valley, Metro New York, New Jersey, and the Virginia area.

Reiner will serve dealers in this area from their Carlstadt, Boston, and soon to be opened Roanoke, Va., warehouses.

Mallinckrodt, Inc., has named Sam A. Visintine director of credit and collection in its corporate headquarters in St. Louis, Mo. In his new position, Visintine assumes increased responsibility for accounts receivable and employee receivables in addition to the management of the company's credit function.

Jacobsen Division of Textron Inc. has appointed **Ontario Turf Equipment Co., Ltd.**, as distributor of its products in the province of Ontario.

With product, service and parts facilities at 50 Charterhouse Crescent, London, Ont., the firm reports an excellent growth rate annually since its founding five years ago. M. M. Mayne, president of Ontario Turf Equipment, said the Jacobsen line adds strength to the company as it offers the most complete line of turf care equipment in the industry.

Jim Barnes, director of sales for **E-Z Rake, Inc.**, Lebanon, In., has announced the appointment of **RNR Wholesale** of Sarasota as E-Z Rake Products Distributor headed by Ray and Steve Russell.

Robert L. Wheeler has joined the Reclamation Seed Sales Department it was announced by Doyle Jacklin, marketing manager of **Jacklin Seed Company**, Post Falls, Idaho.

Wheeler will assist reclamation manager, John Sours, in a full range of continuing programs of research and marketing seed for reclamation and revegetating mining areas, highway cuts and landfills, rangeland rehabilitation, forest burnout and other projects.

Prior to joining Jacklin Seed, Wheeler served as reclamation specialist at TRW Inc., in McLean, Va.; reclamation assistant for the Anaconda Copper Company in Butte, Mont.; and reclamation technician at Montana State University. He was a Montana State Seed Lab Assistant, and has a ranch and retail nursery background.

Brian M. Silva, agronomist, northeastern region of United States Golf Association Green Section, was the recipient of the 1981 Wreath of Grass Award sponsored by the **Florida Turf-Grass Association, Inc.** Since the Award's inception in 1960, those individuals who have made outstanding contributions to the turf industry, and the Association, have been honored by their peers.

The **Gravely Division** of **McGraw-Edison Company** announced the promotion of Zen Kulpa to national sales manager. Zen joined Gravely in 1978 and has held positions of district manager, government and national accounts, and his most recent position of regional sales manager. Prior to joining Gravely, Mr. Kulpa was regional manager for **Harley-Davidson** in Milwaukee, Wisconsin. In his position of national sales manager he will be responsible for the sale of Gravely tractors nationally through its independent dealer network and factory-owned branches.

Gregory Mazur has joined the technical staff of **Davey**

Lawnscape as Lawnscape Area Agronomist. Mazur received his B.S. in Forestry and an M.S. in Turfgrass from Rutgers University.

Gregory will be responsible for the supervision of the Soils Lab and technical assistance for the western Lawnscape offices.

American Pelletizing Corporation (Ampel), has announced the appointment of Conrad Dyer as director of marketing and sales, specialty markets. Dyer assumed the position in mid-November, 1981 and brings 22 years of lawn experience to **Ampel**, having been employed with O. M. Scott and Sons and Greenview Lawn and Garden. At Ampel, Dyer will be responsible for the national lawn marketing plans.

The **Professional Grounds Management Society** has announced the first person to become certified as a Grounds Manager. Mr. John Abernethy, landscape superintendent of Lenoir, N.C., was presented his certification.

TOOLS, TIPS, TECHNIQUES

Avoiding tank-mixing hazards

More and more lawn care businessmen are tank-mixing pesticides to control a broader range of weeds, insects and diseases. While this practice greatly improves application efficiency — thereby reducing labor problems, operators should take certain precautions before mixing chemicals together.

"If pesticides are not tank-mixed properly, the results can be anything from clogged tanks and lines to uneven, deficient or excessive rates of application," said Herb Day, Stauffer Chemical Company. "In addition to the expense involved and disposal of mixtures which can't be used, the poor application can cause plant injury, inadequate pest control and residue problems."

Day offers the following tank mixing tips and reminders:

- Do a small-scale "jar" test to check compatibility. Place one pint of carrier-water or fluid fertilizer in a quart jar. Add each pesticide or a pre-mix of pesticide in water, one at a time, and shake well with each addition. Use each product in the same

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... the finest lawn seed available!

Don't let our name mislead you ... we're in the seed business too. As a matter-of-fact our A-34 BenSun Kentucky Bluegrass is the seed asked for by turf managers everywhere. One of the many reasons for the popularity of A-34 BenSun is its extreme versatility ... for sun, shade, heat, cold, good or poor soil ... for athletic fields, race tracks, home lawns, corporate offices, tees, fairways, parks, schools or sod farms ... it's the one Sun & Shade Bluegrass proved best for overall performance.

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method of detecting certain insects. Water, with an irritant added, is applied to turfgrass to irritate the insects and bring them to the surface. This method is primarily effective in detecting caterpillar-type insects such as sod webworms and cutworms, although it has been used successfully for vegetable weevils.

One readily available irritant is common household detergent. Add one-quarter cup of dry or one ounce of liquid detergent to one gallon of water in a sprinkling can and apply the solution to one square yard of turfgrass where infestation is suspected. One tablespoon of a commercial garden insecticide containing one to two percent pyrethrin in one gallon of water is also very effective. Larvae usually surface within 10 minutes. If the thatch is dry, irrigation before the test is advisable. This method does not bring soil-

inhabiting insects such as grubs or billbug larvae to the surface.

Observation and a keen sense of awareness are of paramount importance in detecting developing or potential insect problems. The following are examples of situations and conditions to watch out for.

Billbug. There are two times a year to watch out for the migrating bluegrass billbug adults on sidewalks and driveways — the latter part of April and early May, and again on warm afternoons in September and October. If numerous, infestations may occur in adjacent turfgrass areas.

Dead stems of Kentucky bluegrass showing evidence of tunneling in the stem, feeding at the crown or roots and the presence of a tan-white, sawdust-like material is sure evidence of the bluegrass billbug. No other turfgrass insect causes similar injury. The zoysia billbug causes similar injury to zoysiagrass.

The "hands-and-knees method" is more likely to result in an accurate assessment of the causal agent.

Black turfgrass ataenius. This insect can be seen in early spring when overwintered adults begin flying and again in mid-summer when the first generation larvae develop into adults. Examination of swimming pools for adults that may fly into the water, or areas under lights to which the insect is attracted are also good places to check for *ataenius* adults.

Sod webworm. Small moths seen hovering about over turfgrass just after dark are probably sod webworm adults. Seeing the moths means they are laying eggs and an infestation of sod webworm larvae may occur about two weeks after the moths disappear.

Grubs. Japanese beetles on nearby trees and shrubs or evidence of extensive beetle feeding

indicates that adjacent turfgrass is a likely candidate for grub infestation the following fall.

Greenbug. Kentucky bluegrass displaying a burnt-orange coloration, particularly in the shaded areas under trees, may be infested with the greenbug aphid. A few passes with a sweep net will soon determine whether greenbugs are present.

Birds. Turfgrass areas frequented by birds are good indicators of insect infestations. Crows frequently locate grub infestations and starlings have an almost uncanny ability to locate infestations of cutworms and sod webworms.

Disease or insect? Injury from insects can produce symptoms similar to those caused by drought and certain fungus diseases. Symptoms of the fungus disease dollar spot can be very similar to those caused by the billbug. One must be aware of the fact that damage from chinch bug, bluegrass billbug or grubs in Kentucky bluegrass or fine fescue is frequently masked when these turfgrasses go dormant from lack of moisture.

Insect infestations cannot be accurately diagnosed from a standing position. The "hands-and-knees method" assisted by a 10× hand lens is more likely to result in an accurate assessment of causal agent. Proper and accurate diagnosis is the important first step in determining what the next step should be.

(Editor's note: This information and further information about insect control is contained in Dr. Niemczyk's *Destructive Turf Insects*. To purchase the book, write: HDN Book Sales, 2935 Smithville W. Rd., Wooster, OH 44691).

PATENT from page 1

Wolf, Biochemicals Department, E. I. du Pont de Nemours & Company, told the panel that patent holders lose five to seven years from their 17-year patents as a result of present registration requirements for new pesticides.

This unchecked erosion not only places patent holders at an unfair advantage in recouping investment costs, he said, but serves as a disincentive for the continued investment of long-term, high-risk capital in innovative pesticide research.

The NACA executive testified in support of the Patent Term Restoration Act (H.R. 1937), which would restore the portion of patent time lost during the regulatory review process.

Meeting future food demands, expected to double over the next 50 years, will require "sustained incentive and innovation on a scale never before seen in worldwide agriculture," Dr. Early said. "H.R. 1937 will stem patent devaluation and help spur pesticide innovation."

NACA is a non-profit, Washington-based trade association whose 107 members make or formulate virtually all the crop protection pesticides used in the U.S. and a large percentage abroad.



Low Calorie Special

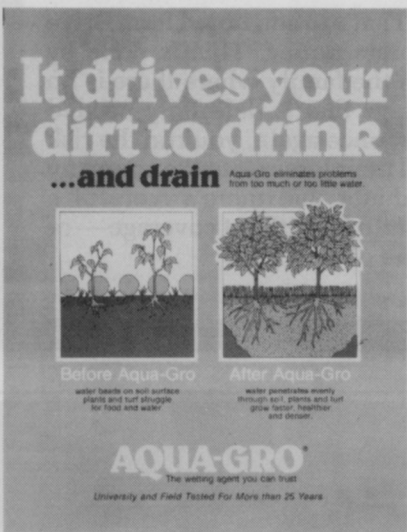
If you watch figures a lot, when it comes to the bottom line, Fylking keeps costs under control two ways. First, it's priced lower than most elite bluegrass seed. Second, it's an inexpensive beauty to maintain — a diet delight compared to other bluegrass needs for water and fertilizer. It's low growing, can be mowed as low as one-half inch and has the great body you want for seed mixtures. Fylking. A very nice spread with very appealing figures. Ask for Fylking Kentucky bluegrass at your local wholesale seed or sod distributor.

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KENTUCKY BLUEGRASS
U.S. Plant Patent 2687
Another fine, quality-controlled product of Jacklin Seed Company

Solutions to water problems in brochure

Aqua-Gro, the rootzone management tool used by lawn care businessmen across the country, is getting a promotional boost via a colorful new brochure entitled: "It Drives Your Dirt to Drink . . . and Drain."

Manufactured by Aquatrols Corp. of America, Aqua-Gro is



specially formulated to eliminate problems from too much or too little water. Its special blend insures faster, more uniform water penetration and drainage. Wet spots and puddling disappear.

The product also prevents localized dry spots and browned-out turf. It moves water into the rootzone, reducing run-off and evaporation, reducing summer stress and watering costs. In addition, it enhances the efficiency of fertilizers and pesticides, eliminating the problems associated with poor soil mixing, thatch and compaction.

It is available in liquid concentrate or spreadable granular and works well in all types of soils.

ZOYSIA from page 15

uniform germination.

Zoysia propagated by treated seed was also found to spread at least twice as rapidly than when established by any other method. After only three weeks, 67 percent of the treated seed area was covered by grass, with an average of 218 plants per square foot. Untreated seeds, by comparison, had covered only three percent of its area, averaging only seven plants per square foot.

Murray also discovered that applying one to two pounds of treated seed per 1,000 square feet would completely fill in an area within six to eight weeks.

Zoysia works best when applied onto bare earth with a smooth roller after drop seeding. Despite the grass's knack for keeping weeds at bay, it performs poorly when seeded into an existing turf.

Just how long it will take for the seeding process to become available to businessmen will depend on further research into the shelf life of treated seed. The light treatment may have to be applied immediately before planting, a task that could then fall to the businessman. Murray is hopeful, though, that remaining questions can be answered quickly, and that "zoysiagrass" will become a "lawn-hold" word.

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- K. These units are not available from any other source at this time.

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- M. We will ship all orders via PP.
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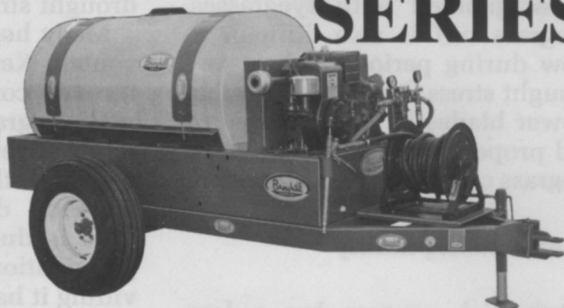
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*PATENT PENDING

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tance, environmental stress tolerance and recuperative potential.

Improved perennial ryegrasses are difficult to mow during cool, moist periods of spring when plants are producing seedheads. Mowers slide and skip on wet slopes planted with ryegrasses. Ryegrass turf is also difficult to mow during periods of heat and drought stress. It is important that mower blades be kept sharpened and properly adjusted if aesthetic ryegrass cover is to be maintained.

Disease susceptibility

Perennial ryegrass has a low crown, tough leaves and a good capacity to recover from wear injury. Ryegrass, however, is essentially a noncreeping, bunchgrass. Because no rhizomes or stolons are produced, the ability of ryegrass turf to fill into areas damaged by wear is very slow. Where ryegrass turf frequently loses density due to excessive wear or other stresses, it should be overseeded on a regular basis to maintain good density. Perennial ryegrass is quite susceptible to numerous diseases. In the spring, *Corticium* red thread and *Helminthosporium* brown blight are common diseases. *Pythium* blight, *Rhizoctonia* brown patch and *Sclerotinia* dollar spot can be very devastating to ryegrass in the summer. In late summer, crown rust is a problem; whereas, pink and gray snow molds are injurious during winter and early spring.

Manhattan, Yorktown II, Blazer, Pennant, Diplomat, Omega and Belle have exhibited some improved resistance to brown blight in New Jersey. Researchers at Rutgers have also reported that Elka, Loretta, Pennant, Belle, Yorktown II, Premier, Fiesta, Blazer, Pennfine and Birdie have shown some resistance to crown rust. Yorktown II, Citation, Derby, Diplomat, Omega and Birdie are reported to have *Rhizoctonia* brown patch resistance. Remember, resistance is relative in terms of tolerance to a disease, and does not imply that immunity exists.

Winter-hardiness

Most turf-type perennial ryegrasses are more winter hardy than common ryegrasses. The improved ryegrasses are subject to damage in wet depressed areas where ice cover exists for extended periods. At the University of Massachusetts, it was reported that young stands are more likely to be damaged by ice cover than mature ryegrasses; and that ryegrass turf mown at 1.5 inches was injured less by ice cover than turf maintained at 0.75 inches.

Also, it was reported that a 2:1 nitrogen:potassium ratio improved the cold tolerance of perennial ryegrass. Manhattan, Omega, Yorktown I and II, Pennfine and Birdie are reported to have excellent cold temperature hardiness, whereas Caravelle and Linn are susceptible to low temperature injury.

Heat tolerance is a critical factor in maintaining quality ryegrass turf in Maryland. Studies conducted in Maryland and Pennsyl-

vania have shown that perennial ryegrass is less heat tolerant than Kentucky bluegrass. Citation, Pennfine and Pennant are among the more heat tolerant cultivars of ryegrass. A low level of nitrogen fertility and deep, infrequent irrigation enhances the capability of ryegrasses to withstand heat and drought stress.

Many homelawn seed mixtures contain Kentucky bluegrass mixtures in combination with perennial ryegrass. In mixtures containing over 20 percent ryegrass by weights, the ryegrass normally ends up dominating the stand. This is due principally to rapid germination of the ryegrass, providing it has a competitive advantage for sunlight, water and nutrients.

Generally, lawns seeded with mixtures containing 20 percent perennial ryegrass eventually become ryegrass turfs with a low population of Kentucky bluegrass plants.

COST CUTTINGS from page 20

insured for non-owned autos they might happen to drive in non-business activities. For any family who has all of its autos insured under a business auto policy, there could be a coverage gap when a family member drives another person's car.

The problem is that in today's society, almost everyone at one time or another will be driving someone else's car. Whatever coverage they have on that auto is available to you as the driver. However, their insurance might be inadequate or nonexistent. Since you do not have access to the high limits you normally enjoy under your corporate policy, you could indeed be in trouble.

Fortunately, there is a solution. That's to add broad form Drive Other Car Coverage to the corporate policy. This is done by listing the names of the drivers in the family where there is no personal auto policy. It's a coverage that is definitely needed when the situation warrants it. But once again, you run the risk of bringing the teenage drivers and their losses into the company picture. Statistically there's no doubt that there's more of a chance that one of their friends would be without coverage — or with inadequate limits — than one of yours.

OFTANOL.
One shot.
No other
insecticide
controls
white grubs
so well
for so long.

The use of OFTANOL for grub control is registered in many states. Check with your state extension office for registration information.



One-shot white grub control with OFTANOL represents a dramatic breakthrough in turf management.

With a single application at the recommended rate, OFTANOL controls white grubs through the entire season.

82101 SPG



But that's only part of the story.

Properly timed, that same application can also control major insects such as billbug, chinch bug, *Hyperodes* weevil and sod webworm.

For example, apply OFTANOL for the first infestation of surface feeding insects. You'll establish season-long white grub control at the same time.

USDA certifies new bluegrass

The U.S. Department of Agriculture has issued a Plant Variety Protection Certificate for "Eclipse", a new low-growing, disease-resistant, shade-tolerant bluegrass.

Tests over a period of years made by Rutgers University and other test centers have indicated many desirable features, including better disease resistance, very low growth, high tolerance to shade, good density, and medium texture. Eclipse has exhibited good resistance to leaf spot, crown rot, leaf rust, stem rust, many races of powdery mildew, stripe smut, and dollarspot.

John Zajac, vice president and general manager of Garfield-Williamson, Inc., said: "Eclipse is

well suited to either full sun, or moderate shade in lawns, parks, and sports turf. It is color compatible in blends with most other bluegrasses and in mixtures with fine fescues and improved turf-type ryegrasses. Our co-marketers indicate that Eclipse is readily adaptable to diverse climatological regions from California and the Pacific Northwest, Michigan, Minnesota, and Maryland, to the northeastern states.

Eclipse is available in both standard-certified and gold-tag sod qualities.

LANDSCAPE

New landscape directory published

According to the National Landscape Association, the question that is most frequently asked in

planning or purchasing landscaping is: "How do I find a firm interested in and qualified to do the job?" The *National Directory of Landscape Firms*, published by NLA in cooperation with the American Nurseryman, was designed to answer that question.

Lawn care businessmen, landscape architects, general contractors, commercial building owners and managers, governmental agencies, architects, businessmen, club managers and operators, homeowners and others can use this 62-page directory to find qualified firms specializing in landscape planting, maintenance services, design, consulting and casualty appraisals.

The directory lists firms alphabetically by state and includes: name, address, phone number; size of landscape projects the firm specializes in and is capable of executing (i.e. Less than \$10,000; \$10,000-\$25,000; \$25,000-\$100,000; over \$100,000); type of

landscape work done (i.e. residential, commercial, institutional, governmental); added services offered; and whether the firm provides a performance bond.

The 1981 edition of *National Directory of Landscape Firms* is available for \$1.50 each from National Landscape Association, 230 Southern Bldg., Washington, D.C. 20005.

DIRECT MAIL

Postal Service drops request for discount for 9-digit ZIP use

The U.S. Postal Service has temporarily withdrawn its request for a discount aimed at getting large-volume mailers to adopt its proposed, controversial nine-digit ZIP code.

The service had asked the independent Postal Rate Commission earlier this year to approve the financial incentive. Under the plans, businesses mailing at least 500 first-class letters — which include many lawn care businessmen — would have received a half-cent discount on each piece displaying the nine-digit code.

But when Congress passed its budget reconciliation this summer, it prohibited the Postal Service from setting up the nine-digit system until Oct. 1, 1983.

In late June, the Postal Service began to give businesses computer tapes listing the nine-digit ZIP code of every address in the U.S. Some mailers then started using the new code even though the discount had not been approved.

EFFICIENCY from page 17

Other factors to be taken into consideration when deciding to add a helper include:

- Whether or not a company wants higher vehicle exposure in a new market area.
- Equipment design — do trucks have two hoses?
- Vehicle capacity.
- Morale of employees — some times it can get "pretty lonely out there with just you and your map and a helper lightens things up," Richards said.
- Capital expense.

The last area Richards dealt with was bad debt and late payers and how they impact on route efficiency.

He said that in 1980, Hydro Lawn billed by leaving the statement at the door. It took customers an average of 12 days to pay, and the percentage of bad debt was a half of a percent. In 1981, the company billed by mail. Customers paid in an average of 14 days, and the percentage of bad debt was the same. Also in 1981, the company allowed customers to miss two payments before they cut service, as opposed to one payment in 1980. Again, the percentage of bad debt was the same.

He said that by "letting the customer get away with two treatments before paying, our bad debt was the same, and it helped route scheduling efficiency."

And it doesn't stop there!

Oftanol

OFTANOL is the new insecticide turf managers are asking to learn more about. OFTANOL can fit into your insect control program, too. Ask your turf chemicals supplier for this free OFTANOL FACTS brochure.

Don't trust your turf to anything less.

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Other insecticides requiring multiple applications can't provide this performance and flexibility.

OFTANOL has other advantages, too: won't tie up in thatch ... resists leaching ... doesn't require watering in.



No wonder OFTANOL is the new insecticide turf managers are asking to learn more about. OFTANOL can fit into your insect control program, too. Ask your turf chemicals supplier for this free OFTANOL FACTS brochure.

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PRODUCTS

Toro introduces new Groundsmaster 62

The Toro Company has introduced its latest commercial turf maintenance unit, Groundsmaster 62, which combines a new rotary cutting deck with a newly powered prime mover for the lawn care businessman. The unit was designed to handle the demands of wide area mowing with the ability to function as an effective trim mower.

The new size deck is 62 inch wide three-bladed rotary cutting unit, mounted at the front of the vehicle, offset 16 inches to the left side to facilitate mowing under low-hanging limbs and to allow trimming close to fences, walls, buildings and around trees. The deck has a flotation type suspen-

sion that allows it to move independently of the prime mover for mowing with minimal scalping even on rolling and hilly surfaces.

The deck is made of 12 gauge



steel, five inch wide deep welded construction with one inch diameter spindles protected by high impact resistance conical shaped spindle housings. The

deck's cutting heights can easily be adjusted from one inch to four inches without tools. Toro has selected a twin cylinder, four-cycle air cooled Onan gasoline engine to power the new Groundsmaster 62 prime mover.

Circle No. 190 on Reader Inquiry Card

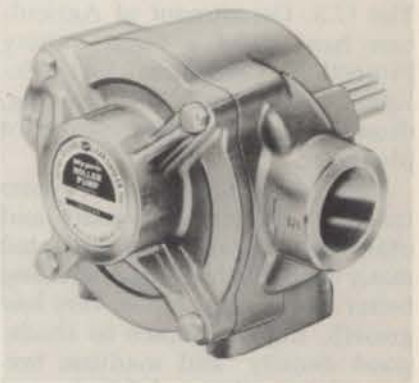
Roller pump sprays at high capacities

A new roller pump for high capacity spraying to control weeds and insects has been released by Hypro Division, Lear Siegler, Inc., for use in the lawn care industry.

The pump, designated Series 1200, fits spray capacity needs between the company's Series 1500 and 1100 roller pumps. The pump has durable cast-iron housing, shaft seals and polypropylene rollers and a one inch stainless steel shaft with heavy duty ball bearings. At pto speed of 540 rpm and spraying pressure of 50 psi, it has an output of approximately 49

gallons per minute. Maximum output is 74 gpm at 800 rpm and 30 psi.

The pump's one inch diameter shaft can be adapted for belt and pulley drive or fitted with a one



and three-eighths inch pto adapter for direct tractor mounting. Port size is one and one-half inch NPT. Weight of standard pump is 32 pounds. Current factory list price is \$260.00.

Circle No. 191 on Reader Inquiry Card

Rear engine rider with syncro-balanced engines

Hahn announced three new models of rear engine riders, the model 830, an eight horsepower recoil start, the eight horsepower electric start and the 1130-E, an 11-horsepower electric start. Each model features Briggs and Stratton



synchro-balanced engines, automotive-type steering, and all gear transmission and differential axle.

All models are equipped with a 30-inch mower deck designed with three-point deck suspension and a floating front axle that allows the mower to follow the contour of the ground. These fea-

IT'S



18-3-3-LC GRASS FOOD Liquid Fertilizer

FOR ME

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GREEN-T 18-3-3-LC GRASS FOOD is a specially formulated high nitrogen, low chlorine LIQUID FERTILIZER specifically designed to serve the needs of those in the turf care industry. It can be directly applied to turf grasses by many methods of application. Nutrient needs are fulfilled and your turf care business will be satisfied when you use Green-T 18-3-3-LC GRASS FOOD LIQUID FERTILIZER. If you're serious about your Lawn and Turf care, try Green-T. It may be the best move you'll make in '82.



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Manufacturers of Liquid Fertilizers

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RENOVATION from page 14

We apply Tupersan and then we slit seed in the spring. Often the customer is dissatisfied with slit seeding; he expects too much too soon. People must be educated to realize that sod growers grow their sod from seed, and it takes one-and-a-half to two years before that sod is ready to be cut.

Increase in the number of bluegrass varieties is good. A lawn that had much thatch and Fusarium blight was aerified and slit seeded with new varieties and one year later was much improved. Once a frog-eye develops, rejuvenation and reseeding with the slit seeder will help to fill in the bare areas and hopefully improve later resistance.

We don't go in two directions when slit seeding. In some lawns there would be nothing left if we did. In poor lawns we spread one pound per 1,000 square feet by broadcast then two pounds per 1,000 square feet with the slit seeder. If the thatch is severe, we rake the debris and then spread the seed.

It drives your dirt to drink

...and drain too much or too little water, and you've got problems!... unless you use Aqua-Gro the rootzone water management tool.

Aqua-Gro is specially formulated to eliminate problems from excessive moisture. Its unique blend ensures faster, more uniform water penetration and drainage. Aqua-Gro will provide the desired residual benefits, irrigation after irrigation, because it does not leach. Insufficient moisture can cause localized dry spots and browned out turf.



tures help reduce scalping and provide more even cutting and control over uneven surfaces. The Hahn rear engine riders are marketed by the Gravely Division of McGraw-Edison Company.

Circle No. 192 on Reader Inquiry Card

Heavy duty aero-seeder for lawn care industry

Olanthe #84 Aero-Seeder will thatch and seed simultaneously, or may be used as a thatcher only. Standard equipment includes a 16 horsepower engine, 10 point 12-gauge blades, electric start and 20



pound seed hopper. Seeder shuts off automatically when blades are disengaged, then will return to previous setting when activated. Blades cut continuous groove one-eighth inch to two inches deep, while seed is dropped via seed tubes. The Olanthe Aero-Seeder is self-propelled.

Circle No. 193 on Reader Inquiry Card

No deck warp with heavy-gauge cutters

The Bunton Company has increased the deck and mainframe steel thickness from 11 gauge to 10 gauge on its entire line of Bunton and Goodall self-propelled mowers. The welded, one-piece frames are reinforced at all stress points with seven gauge steel resulting in exceptionally long mower life.

Bunton manufactures self-propelled mowers in 24, 28, 36, and 52 inch cuts for commercial



use. A large variety of engine and feature options allow the lawn care businessman to customize the mowers to their own specification. Engine options include both gasoline and diesel on lawn, turf and mulching mowers.

Circle No. 194 on Reader Inquiry Card

New weed control ends dusting, mix problems

A new formulation of Atratol, widely used for weed control at

to page 30

MARKETING IDEA FILE

The cost of customer complaints

Did you get a nasty letter in today's mail about the quality of your service? Well don't fret — rejoice instead, because the complainer may well turn out to be among your best customers. Lawn care companies that encourage their customers to complain about poor service and faulty products make more profits in the long run according to Technical Assistance Research Groups, Inc., a consumer research group in Washington, D.C., which found that very few unhappy customers even bother to complain. Instead, they simply switch companies or close their accounts, or more damaging spread their disdain by word of mouth.

"A national panel survey found that 31 percent of the people with bad experiences did not complain because 1) it was not worth the hassle, 2) they didn't even know where to write, or 3) that if they did complain, the company wouldn't do anything because they didn't care," John Goodman of TARP told *In Business* magazine. "To solve these problems, companies have

to page 35

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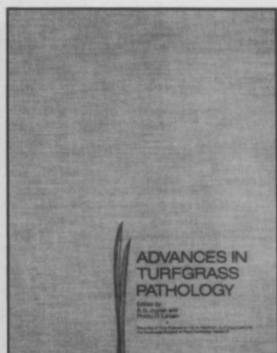
Circle No. 101 on Reader Inquiry Card

DACTHAL from page 1

place by January 1983, prior to the beginning of the northern lawn care season. "We are not building the whole plant over," a Diamond Shamrock spokesman told LAWN CARE INDUSTRY. "The vessel sizes are the same, and we are looking for an overall improvement in efficiency at the plant, but there will be no substantial increase over the amount of Dacthal that was available before the explosion." The spokesman said: "We are obviously committed to the lawn care market by virtue of our \$20 million investment to a product that will be out of registration soon." The big question in the minds of lawn care businessmen across the country is what the price of the pre-emergent herbicide will be for the 1983 lawn care season. Diamond Shamrock is mum on the subject at present, but should know by late summer or early fall what the pricing situation will be. "We are going to have to work harder to win the market back," the spokesman said. — Bob Earley

Advances in Turfgrass Pathology

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PRODUCTS from page 29

industrial sites and along railroad rights-of-way, eliminates the dust and mixing problems associated with wettable powder products.

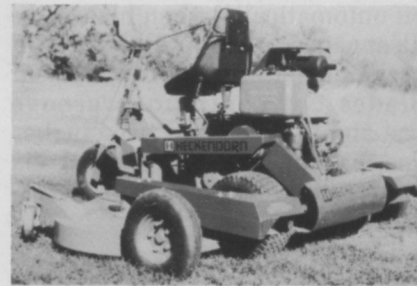
The chemical, Atratol 90, is formulated as a water-dispersible granula. Ciba-Geigy, its manufacturer, says premixing is unnecessary because the granules go quickly into solution with water. Plugging of screens and lines is eliminated.

Available in 25-pound bags, Atratol 90 contains 12½ percent more active ingredient than other atrozine formulations on the market. Therefore, less space is needed to store, haul and dispose of packages. The plastic bag wads up into a fist-size package for disposal.

Circle No. 195 on Reader Inquiry Card

Diesel power option meets savings trends

Heckendorn Manufacturing Co.'s 62 and 88 inch riding mowers will now be offered with a 21 horsepower Model WD2-1000 Wisconsin Diesel power option, enabling the lawn care businessman greater



fuel and maintenance economy.

The Wisconsin Diesel used on the mowers is heavy-duty, air cooled, two cylinder in-line design, featuring cast-iron cylinders, forged steel crankshaft, diecast aluminum crankcase, full-pressure lubrication and full flow oil filters.

Circle No. 196 on Reader Inquiry Card

Rapid knock-down with new pesticides

Mallinckrodt, Inc., is introducing two new products for the ornamentals industry — Dycarb insecticide and Ornalin contact fungicide, both labeled for use on a wide variety of ornamental plant materials.

Dycarb is a broad spectrum insecticide with both contact and stomach poison effects on insect targets. The product provides rapid knock-down and good residual activity. The product is particularly well suited for use in the nursery because it has little odor.

Extensive phytotoxicity testing was conducted resulting in a label listing 58 herbaceous plants and 43 woody plants to which Dycarb may be applied safely. The insecticide is highly effective against a variety of troublesome plant pests, such as scale and Black Vine Weevil, as well as a full spectrum of common pests.

Ornalin is a contact fungicide providing effective control of Botrytis, a fungal disease affecting a broad range of ornamental plants. The product has been used in European ornamental production for more than four years and is

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107	114	121	128	135	142	149	156	163	170	177	184	191	198	205	212	219	226	233	240

PLEASE CHECK BELOW YOUR PRIMARY BUSINESS AT THIS LOCATION:

A. CONTRACTOR OR SERVICES:

- ☐ Lawn care service business involved primarily with fertilization, weed, and insect control.

Please specify method of application:

10 ☐ Liquid 11 ☐ Dry 12 ☐ Both

- 20 ☐ Primarily mowing/maintenance service
30 ☐ Landscape contractor/lawn service company
40 ☐ Nursery or garden center/lawn service company
50 ☐ Pest control/lawn service company
60 ☐ Irrigation contractor/lawn service company

B. GROUNDS CARE/MAINTENANCE AT ONE OF THE FOLLOWING TYPES OF FACILITIES:

- 110 ☐ Private or public estate

- 120 ☐ School, college, university, hospital, or similar facility
130 ☐ Condominium housing development or industrial park
140 ☐ Government grounds; parks, around municipal buildings, military facilities
150 ☐ Cemetery or memorial garden
190 ☐ Other (please specify) _____

C. SUPPLIER

- 210 ☐ Chemical dealer or distributor
220 ☐ Equipment dealer or distributor
230 ☐ Seed broker/dealer
240 ☐ Sod grower

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Switch to liquid makes lawns greener, bottom line blacker

A Florida lawn care businessman says he reduced costs, increased production, improved work efficiency and boosted employee morale by making one small change in his operation.

He switched from dry to liquid fertilizer.

"I could kick myself for not doing it earlier," Irv Weidenmiller, owner of American Pest Control, Ormond Beach, told LAWN CARE INDUSTRY.

"If we used a liquid when I started this company three years ago, we'd probably be three times bigger than we are today," he said.

40% increase

Now Weidenmiller is making up for lost time. In his first year with liquid fertilizer he increased residential accounts by more than 40 percent — from 700 to more than 1,000 — in addition to taking on several commercial and industrial jobs that were "too big to handle before."

"I had one man and one truck cover 175,000 square feet at a condominium in only nine hours," Weidenmiller says. "Before switching to liquid, we didn't have the manpower or equipment to do a job that big that fast."

"Today we can do a lawn in half the time it took us before — with half the manpower. Instead of doing seven or eight lawns a day, my men are averaging 12 to 15 each."

American Pest Control's three drivers each cover about 150,000 square feet a day. "The greatest thing is they don't have to go back again to spray a herbicide, insecticide or fungicide," Weidenmiller adds. "Everything is applied in one shot. Thanks to liquids, this is the first year we haven't fallen behind on our application schedule—and that keeps our customers happy."

Three weeks — 67 accounts

But not all of American Pest Control's customers were ready for the switch to liquid fertilizer. In fact, 12 of them protested by taking their business elsewhere.

Weidenmiller was not upset, however. The 67 new accounts he picked up the first three weeks of the season — all of them referrals after seeing their neighbors' lush, green lawns — more than made up for the dozen that defected.

American Pest Control was applying Folian (12-4-4-.5S-.1Fe) foliar fertilizer, a clear liquid solution manufactured by Allied Chemical, Morristown, N.J.

According to Allied, Folian is compatible with most commonly used pesticides, and its patented formulation lets dealers apply significant amounts of plant food without burning the turf, a common gripe about liquid fertilizers when applied at high rates. One

gallon of Folian contains 1.2 pounds nitrogen.

Because the fertilizer solution is easily absorbed by grass, visual results are said to be evident within a few days.

"It goes to work almost instantly," Weidenmiller reports, "while still supplying enough residual fertilizer to the soil to keep the grass green and healthy for many weeks."

"For that reason, builders and real estate people call us in to

to page 35

TOOLS TIPS TECHNIQUES from page 23

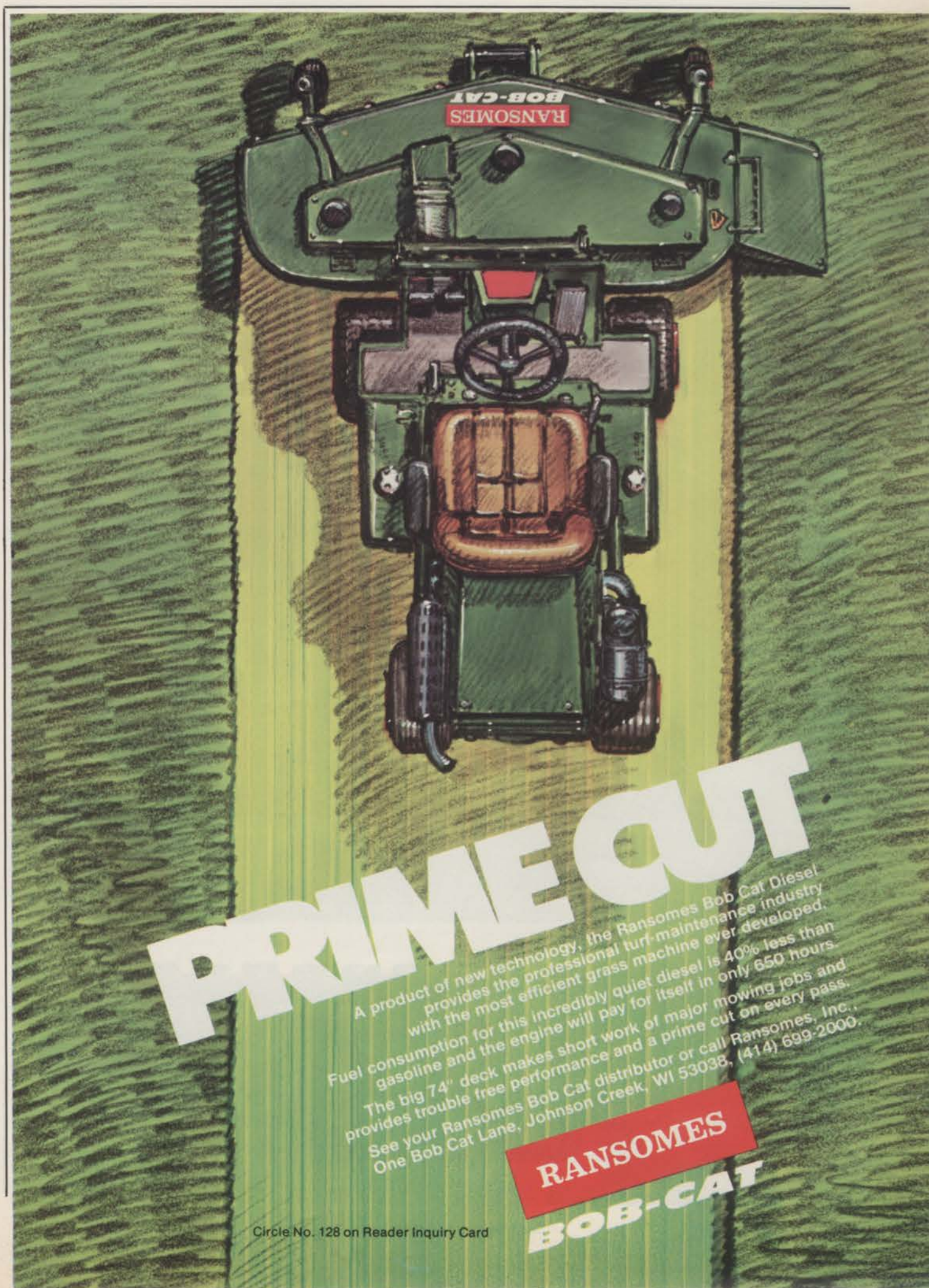
proportion to the carrier as it will be in the actual tank mix.

Unless labels indicate otherwise, add pesticides in this order: wettable powders first, followed by flowables, water solubles, surfactants and emulsifiable concentrates.

Invert the jar 10 times, then inspect the mixture immediately, and again after standing quietly for 30 minutes. If a uniform mix cannot be made or if nondispersible oil, sludge or clumps of solids form, the mixture is incompatible and should not be used. Minor separation after 30 minutes, without sludge or clumps and which remixes readily with 10 jar inversions, is tolerable if field spray tank agitation is good and keeps the combination mixed. Adding a spray adjuvant in testing compatibility of mixes can avoid many problems. An adjuvant helps keep the mixture emulsified. Several of those available are Compex, Sponto 168D, Uni-Mix and Unite.

- When tank mixing in volume, put two-thirds of the carrier in the tank first. Then add pesticides one by one, with wettable powders first. Agitate for thorough mixing after each addition, before pouring the next. Finish filling the tank with carrier.

- Keep agitation going at all times on the way to the job, during application and during stops. Empty the tank preferably on the day of mixing. Do not allow mixture to stand overnight without agitation.



PRIME CUT

A product of new technology, the Ransomes Bob Cat Diesel provides the professional turf-maintenance industry with the most efficient grass machine ever developed. Fuel consumption for this incredibly quiet diesel is 40% less than gasoline and the engine will pay for itself in only 650 hours. The big 74" deck makes short work of major mowing jobs and provides trouble free performance and a prime cut on every pass. See your Ransomes Bob Cat distributor or call Ransomes, Inc., One Bob Cat Lane, Johnson Creek, WI 53038, (414) 699-2000.

RANSOMES BOB-CAT



Peter Loft (right), chairman of Loft Seed, Inc., Bound Brook, N.J., receiving a plaque from Paul DesChamps, president of the N.J. Turfgrass Association, in honor of his induction into the New Jersey Turfgrass Hall of Fame at the Association's banquet. Loft is the eighth inductee since the formation of the Hall of Fame in 1974.

MEETING DATES

Iowa Turfgrass Conference and Trade Show, March 1-3, Marriott Hotel, Des Moines, Iowa. Contact: Barb Erickson, Horticulture Extension Office, Iowa State University, Ames, IA 50011, (515) 294-1870.

The Pennsylvania Turfgrass Council Turfgrass Conference and Show, March 1-4, Hershey Lodge and Convention Center, Hershey, Pennsylvania. Contact: Christine E. King, Executive Secretary-Treasurer, 412 Blanchard St., Bellefonte, PA 16823, (814) 355-8010.

Massachusetts Fine Turfgrass Conference and Industrial Show, March 2-4, Springfield Civic Center, Springfield, Massachusetts. Contact: Dr. Joseph Troll, Plant and Soil Sciences, Stockbridge Hall, University of Massachusetts, Amherst, MA 01003, (413) 545-2353.

American Sod Producers Association Midwinter Conference, March 3-5, Royal Lahaina Hotel, Maui, Hawaii. Contact: Bob Garey, Executive Director, 9th and Minnesota, Hastings, NE 68901, (402) 463-54683.

Canadian Turfgrass Conference and Show, March 7-10, Constellation Hotel, Toronto, Ontario, Canada. Contact: Mary Gurney, Canadian Golf Superintendents Association, 698 Weston Rd., Suite 32, Toronto, Ontario, Canada M6N 3R3, (416) 767-2550.

Northeast Pennsylvania Turfgrass and Grounds Maintenance School, March 9-10, Luzerne County Community College Conference Center, Nanticoke, Pennsylvania. Contact: E. V. Chadwick, Courthouse Annex, Wilkes-Barre, PA 18702, (717) 1701.

University of Wisconsin Turfgrass Conferences, March 22, Columbus Club, Appleton; March 23, Exposition Center, Milwaukee; March 25, Dane County Fairgrounds, Madison; March 29, Waukesha County Youth Center, Waukesha; March 31, Holiday Inn, Eau Claire. Contact: Dr. R. C. Newman, Dept. of Horticulture, University of Wisconsin, Madison, WI 53706, (608) 262-1624.

Southeastern Turfgrass Conference, April 12-13, Rural Development Center, Tifton, Georgia. Contact: Dr. G. W. Burton, Coastal Plains Station, Tifton, GA 31793, (912) 386-3353.

Alabama Turfgrass Field Day, April 22, Turfgrass Research Unit, Auburn University, Auburn, Alabama. Contact: Kin M. Sheffer, Extension Hall, Auburn University, Auburn, AL 36849, (205) 826-4985.

ALCA from page 1

committee.

J. Landon Reeve IV, vice-president last year has previously been regional director and awards chairman. Reeve is a past president of the Landscape Contractors Association of Metropolitan Washington, D.C. and is active in the American Association of Nurserymen. He serves as ALCA's liaison officer on the steering committee of the AAN Nursery Marketing Council.

Rodney L. Bailey, treasurer last year, has served as chairman of the maintenance committee and was program chairman of the 1981 maintenance symposium.

Karl Korstad has been in landscape contracting since 1952 and has concentrated on interior landscaping for the past 15 years. He has been a regional director for Region VII for two years and served as chairman of the Interior-scape committee for five years.

Among the highlights of the educational seminars was a discussion of "Contract Maintenance of Public Landscapes" headed by Joe Marsh of J. M. Marsh Landscape Maintenance Consulting. Principal speakers at the seminar were Mike Kristie of Los Angeles County Parks and Recreation, John Quimby of the Small Business Administration, Ed Westbrook of Westbrook and Close, Jack Burton of the National Federation of Independent Businesses, and Jim Keenan, president of Landscape Associates.

Discussion centered around the problems associated with government contract work, including identification of the lowest possible bidder, government specifications, government maintenance and priorities, bonding companies, the influence of Proposition 13 on government contract maintenance and force accounts. A complete account of the discussion will be featured in the April issue of *LAWN CARE INDUSTRY*.

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**When you define the problem,
the solution is clear.**



BASF



DRY-TO-LIQUID SWITCH from page 33

'green up' a lawn fast before they put a house on the market."

The fertilizer solution is applied four times a year at six-week intervals, from March to September. A chelated iron compound is applied during the winter months.

What prompted American Pest Control's switch to liquid fertilizer?

The turf-scorching brought drought of 1980 planted the seed for the change. Local ordinances, attempting to conserve water, had prevented residents from turning on their sprinklers. Hence, dry fertilizer "did more harm than good," sitting on the surface and burning the withering turf, Weidenmiller explains.

Loading bags

In addition, Weidenmiller thought his drivers were spending too much time and energy loading and pouring 50-pound bags of fertilizer.

"They were exhausted before they even got to the job," he adds. "We were also losing our patience with broken fertilizer bags and spreader breakdowns. We don't need those headaches, especially while working under the hot Florida sun."

That winter Weidenmiller read an article in *LAWN CARE INDUSTRY* about a dealer in Nebraska who faced and solved a similar predicament (See "Dry to Liquid Switch Makes Life Easier in Nebraska," *LAWN CARE INDUSTRY*, January 1981).

"The article really hit home, so I called out there to talk with the dealer myself," Weidenmiller says. "We had a real good 'nuts-and-bolts' discussion, and he couldn't say enough good things about his switch from dry to liquids. That's when I decided it

was worth a try.

"If you're not willing to take chances and accept change, you'll never have progress," he adds.

One side effect of Weidenmiller's switch to liquid fertilizer — one not counted on — was higher morale among his drivers.

"It was rewarding for them to go back to a job six weeks later to see how good the lawns looked, and how pleased our customers were with our new product and service," Weidenmiller says. "We didn't get one single 'call-back' or complaint this season. That alone told us we were doing something right."

In addition, the drivers had more motivation and a better attitude toward their job because "they weren't breaking their backs loading fertilizer bags or pushing around a spreader, nor did they have to fuss with broken bags or sweeping up after spills and over-

laps," Weidenmiller explains.

"Now they have more time to be consultants and salesmen. They can take the time to talk with a customer about a total lawn-care and pest-control program, while

still having time to call on prospective clients. It's gotten to a point where there's an internal, friendly competition among them to see who can cover the most turf in a day."

MARKETING IDEA FILE from page 29

to solicit complaints. First, they must make it simple to complain by using comment cards or setting up a toll-free number. And more importantly, the company has to be ready to respond, or the customer will become even more cynical."

Goodman pointed out that it costs six times as much to get a new customer than it does to keep an existing one happy, so it is very important to have good customer relations. The TARP study found that when dissatisfied customers successfully complained they were likely to remain loyal to the service involved and to tell their friends about the experience. Customers who were satisfied after complaining told four to five other people about their experience. Those who felt they received no satisfaction after complaining told an average of nine to 10 people about it, with 12 percent telling as many as 20 others. The TARP study is one of the few providing numbers to the word-of-mouth phenomenon.

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It seems that more and more grounds maintenance professionals these days are switching to our Kubota tractors.

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hard work, all Kubota models are available with 4-wheel drive.

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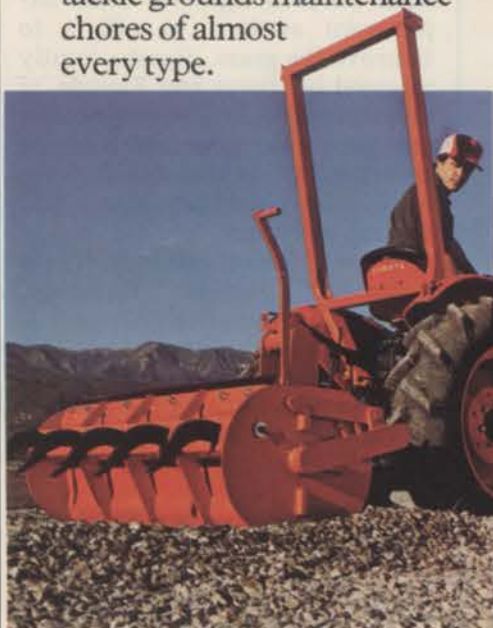
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To add to their capacity for

DAVIDS AND SONS, INC.

Illinois co. wins PGMS award for Orland Sq. Plaza

The Professional Grounds Management Society held its 69th Annual Conference in Portland, Oregon from October 31 through November 4. Attending the conference were Mr. and Mrs. Clarence Davids, Sr., of Clarence Davids and Sons, Inc., a landscape maintenance company in Blue Island, Illinois.

At the gathering, Davids and Sons, Inc. received awards for landscape maintenance achievements at two major sites. The company received the national "Grand Award" for work done at Orland Square Shopping Plaza, the major shopping center in Orland Park, Ill. The center covers 150 acres. Also awarded to Davids was the "Honor Award" presented for maintenance of the Dearborn Park community, an innovative residential area just south of the Chicago loop.

These awards are the most recent of several awards which have been presented to the Illinois firm by local and national organizations in the past.



OPEI reports 12-month shipments down 20 percent

Twelve-month shipments by reporting members of the Outdoor Power Equipment Institute (OPEI) statistical program declined 20.6 percent when compared with the same period in 1980.

The 4.6 million walk-behind power mowers shipped in 1981 compares with 5.7 million units in the 1980 model year. Factory values declined from \$701 million to \$606 million, or 13.6 percent.

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Shipments of riding tractors declined 31.4 percent to 151,000 units having a F.O.B. value of \$453 million. Last year's 220,000 units were valued at \$605 million.

Estimated shipments of lawn tractors totalled 620,000 for the 1981 model year, down 23.3 percent from 1980. F.O.B. factory value also dropped to \$453 million or 14.5 percent less than 1980 values.

Rotary tiller shipments were off 24.9 percent to 501,000 units, a decline of 166,000 units from the 667,000 shipped in 1980. Factory value decreased 13.2 percent from \$159 million to \$138 million.

The twelve-month across the board declines can be attributed in part to high interest rates and a decline in household spending.

The twelve-month period begins in September and ends August 31, 1981. Companies participating in the OPEI statistical program account for a vast majority of total industry shipments of the products, according to an OPEI spokesman.

RESEARCH

Efforts to improve St. Augustinegrass

Efforts are being made to use genetic resistance to combat two problems of St. Augustinegrass, southern chinch bug and St. Augustine Decline. Millions of dollars are spent each year to combat these problems.

St. Augustinegrass is grown extensively throughout the southern coastal states and California. Not only is it used as a pasturegrass, but also it comprises about 96 percent of the lawns in the Gulf Coast and accounts for an estimated 56 percent of the lawns in Texas.

Cooperative effort

Scientists with the Texas Agricultural Experiment Station have been cooperating with other experiment stations in efforts to improve the grass. Florata, jointly released by Texas and Florida, is now in use but its coarse texture and poor cold tolerance limit its acceptability. It was the first release with combined insect and disease resistance.

In the present research, Texas Common, Florida Common, Florata, five lines from Africa (P.I. series), and eight hybrid lines (TX series) were tested in the laboratory for resistance to chinch bug and St. Augustine Decline strain of Panicum Mosaic Virus (SAD-PMV).

Hybrid lines

Two hybrid lines (TX100 and TX104) and Floratam tested as having combined disease resistance to both pests. Four other hybrid lines (TX 101, TX 102, TX105, and TX106) exhibited virus resistance only, and one line (P.I. 410-357z0), from Africa, exhibited southern chinch bug resistance only.

Lawn care businessmen will be saved millions of dollars each year in pest control costs if an acceptable grass can be produced to SAD-PMV.

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MEMOS



Watching out for stress

As the lawn care season in many parts of the country returns to full swing in the coming months, many lawn care businessmen should be forewarned of the effects of business stress on the success of their company. Business may fall off sharply, an owner thinks he should cut back

to survive, and that means firing members of the family. He can't do it, so he calls in someone else to do the firing.

That's one way of doing it, but businessmen can't escape stress entirely — and failure to handle it properly can lead to serious health problems and even to bankruptcy. According to a report featured in the *Wall Street Journal*, even business expansion can cause it. A job promotion can produce stress if, for example, the promoted employee loses access to information he considers valuable. Another person may find his job too complex.

The day-to-day management of a lawn care business is constantly stressful and usually worse if the company is slowing. Stuart Rosenthal, a Boston psychiatrist told the *Journal* that "a certain level of stress is desirable. People need a modicum of demand on them to keep their tone up." But, he warned, stress is bad when it is managed inadequately and "leads to distress."

Signs of mental tension may include successive errors or accidents by an employee, tardiness

in finishing projects or the tendency by an employee to constantly criticize himself or apologize for his work, Rosenthal said. To deal with employee's stress, bosses should anticipate change and prepare workers for it. Hold down the number of changes made at one time, he suggested. "Be there in the foxhole with the troops. Be available. Be in touch." The small business owner may have to give employees permission not to be so hard on themselves or he may have to reveal some of his own past failures.

The point of all this is to wish you the best in the coming lawn care season, but keep the monkeys off your back.

Paul Shocloskey

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