

John Quimby

Office Of Advocacy Aids **Maintenance Contractors**

This is the second in a series of four articles that will appear on the subject of contract maintenance to public agencies. The articles are based on a workshop on contract maintenance held at the Associated Landscape Contractors of America convention, and headed by Joe Marsh, president of J.M. Landscape Maintenance Consulting, Cupertino, Ca.

This article concerns contract lawn maintenance from the point of view of the Small Business

Administration. John Quimby is an officer in the department of advocacy for the Small Business Administration, a division set up in 1974 to address the concerns to strengthen the voice of the small businessman within the federal decision making process. The Office of Advocacy has set up a task force on regulatory relief for small business, one of the functions of which is to aid private sector competition in the public sector.

It has been estimated that in the state of California alone there is a potential for contract out \$4.4

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\$2.00

and chemical lawn care professionals lawn maintenance

SUCCEEDS SCHERY

BLUEGRASS OVERSUPPLY

Eliot Roberts New Director Lawn Institute

Dr. Eliot C. Roberts was confirmed as the second director of the Lawn Institute at its annual meeting in Dallas, Tx. Dr. Roberts succeeds Dr. Robert W. Schery who is retiring after 25 years at the helm of the Institute.

In welcoming Dr. Roberts aboard, president Norman Rothwell indicated that the Institute was very fortunate to find so capable and dedicated a replacement for Dr. Schery as Dr. Roberts.

Turfgrass circles

Eliot C. Roberts is well known in not only turfgrass circles, but as an administrator and environmental ecologist with wide-ranging interests. He is resigning his position as professor of soil science at the University of Rhode Island, to assume directorship of the Institute. Among his activities in Rhode Island were supervision of programs relating to the impact of urbanization.

PhD in 1955

Dr. Roberts did his undergraduate work at the University of Rhode Island and continued with his graduate work at Rutgers University where he received his PhD degree in soils and plant Physiology in 1955.

He specialized in turfgrass teaching and research at the University of Massachusetts for some years before accepting a professorship at Iowa State University, Ames, under the aegis of both the horticultural and agronomy departments. Dr. Roberts left Iowa State to become chairman of the ornamental horticulture department at the University of Florida. and eventually assumed similar responsibilities in a return to his alma mater.

Seed Harvest Forecast

Seed growers have forecast that there will be an oversupply of Kentucky bluegrass and spot shortages of tall fescues and perennial ryegrasses in this year's seed harvest.

Seed producers cite two major problems they have faced this season: A drop in sales of Kentucky bluegrasses together with a corresponding increase in the popularity of fine-leafed perennial ryegrasses and improved lowmaintenance tall fescues.

Kentucky bluegrasses

Kentucky bluegrass has been suffering from a drop in construction and competition from the faster germinating perennial ryegrasses and lower maintenance fescues, according to turf growers.



Larry Vetter

Northrup King's Larry Vetter said that demand for Kentucky bluegrasses is down while the supply is good, and Loft's Rich Hurley concurs. "We had a good crop last year and another good crop is antici-

pated for this year," he said.
Tom Stanley of Agricultural Services predicts Kentucky bluegrass is in oversupply which may take a few years to balance with anticipated demand. And prices may fall as a result. Touchdown is the only Kentucky bluegrass indicated which may be limited by supply.

Fescues

With the increased attention to the maintenance requirements of turfgrasses, fescues are this season's beneficiary. Fine fescues succeed in conditions where Kentucky bluegrasses fail such as heavy shade and low nitrogen.

MR. AGRICULTURE



Arden Jacklin

The prestigious American Seed Trade Association on June 30, honored Arden Jacklin with lifetime membership in the organization at their 99th annual meeting in Dallas, Tx. Jacklin was escorted to the dais for the presentation by his three sons Don,

Seedmen Award Jacklin A Lifetime Membership and beans seed business that had Doyle, and Duane.

Singled out as "Mr. Agriculture all the way through," the 800 member international organization honored lacklin for a long list of accomplishments in the industry as well as the successful completion of more than 100 assignments on behalf of ASTS.

Bob Russell, president of the association, pointed out that Jacklin was graduated with honors

from Washingti MISR 0037699 X and became as: PERIEKE PROF training peopl MICHIGAN STATE over the nation CROP 5 SOIL SCL In 1940 with E LANSING

brothers, Jackli

been started four years earlier.

In 1945 he participated in a grant which researched the first grass seed yield trials in the Northwest and in 1947 planted the first field for commercial produc-

Through the years this business became highly successful and Jacklin became a leading authority on the subject. His expertise was

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Contractors of America (ALCA) holds its annual meeting every February in different cities around the country. ALCA also is heavily in the mowing/ involved maintenance area, and will hold its annual Maintenance Symposium in November in Dallas/ Fort Worth. We will have more details on this meeting in coming

There is a lot of crossover between the mowing/maintenance businessman and the chemical lawn care businessman. For companies that strictly do chemical lawn care, and for mowing/ maintenance companies that are already involved or are getting involved in chemical lawn care, the primo show of the year is the Professional Lawn Care Association of America Conference and Trade Show.

The third annual PLCAA show is being held Nov. 16-18 at the Convention/Exposition Indiana Center in Indianapolis. Headquarters hotel is the Indianapolis Hyatt Regency Hotel. Myself and the rest of the PLCAA board of directors received a tour of both facilities in May, and believe me, the site is beautiful. The two facilities are right across the street from each other. And to answer the question that I know is on the lips lawn care businessmen everywhere - yes, there are quite a few watering holes within walking distance where you can get a nice cold soda pop after convention hours. I know, because I have already checked then out.

The PLCAA event will start again with the Early Bird Reception from 6:30 to 8:30 p.m. on Monday, Nov. 15. This proved to be a hit last year, with first class eats and drink.

Registration opens during the reception and then continues at 8 a.m. Tuesday morning. Exhibit visitation is scheduled from 9 a.m. to 12:45 p.m.

Following PLCAA President Marty Erbaugh's opening at 1 p.m. on Tuesday, Gerry Sweda, sales training manager for O. M. Scott & Sons, Marsyville, Ohio will speak on "Motivation." Sweda is a captivating speaker, and he should get things off on the right foot.

Following Sweda, there will be a presentation of Lawn Care Industry's survey of the industry - a statistical review with facts and figures.

The final session of the afternoon will be led by Jerry Swinehart, director of mail processing for Indianapolis. He will speak on postal regulations affecting mailing services.

There will be a cash bar on the exhibit floor from 4:30 to 6 p.m. on Tuesday, and then the evening is open.

Former U.S. Secretary of Agriculture Earl L. Butz will give the keynote speech, "Populism, Politics and Progress" at 8:30 a.m. Wednesday morning. Butz is a no-holds-barred speaker who, as Howard Cosell might say, "tells it

like it is." Even I am going to get up early to hear this one.

Exhibits will open at 8 a.m. on Thursday and close at 1:30 p.m. From 11:30 a.m. until 1:30 p.m., there will be a buffet luncheon in the exhibit hall with no scheduled speakers.

The PLCAA annual meeting will be held in conjunction with a buffet breakfast from 8 to 9 a.m. Thursday morning. From 9:30 a.m. to 11:30 a.m., there will be a panel discussion on "hot issues" facing the lawn care industry.

Dr. Robert Miller, vice president of ChemLawn Corp., Columbus, Ohio, and president of the National Coalition for a Reasonable 2,4-D Policy, will speak on the very important topic of the 2,4-D situation from 1:30 to 2:30 p.m. on the final day. The meeting will close at 3 p.m.

For further information about the PLCAA show, contact: Jane Stecker, PLCAA, Suite 1717, 435 N. Michigan Ave., Chicago, IL 60611, 312-644-0828.

Exhibitors already signed up for the show include: Power Spray Technology, BFC Chemicals, Miller Chemical & Fertilizer, Moyer & Son, Rockland Chemical Co., Lofts Seed, Lebanon Chemical Rhone-Poulenc, Stauffer Chemical Co., Chipman, Inc., W. Cleary Chemical Corp., Smithco, Inc., Brouwer Turf, Du Pont Co., N-P-K-Ca Concepts, Green Pro Cooperative Services, Container Mfg., Inc. and B & G Equipment.

Also, Hahn, Inc., Hawkeye Chemical Co., The Andersons, Northrup King Co., Encap Products Co., E-Z Rake, Dow Chemical, Knox Fertilizer & Chemical, O. M. Scott & Sons, TUCO, Echo, Diamond Shamrock Corp., Marsh & McLennan, Warren's Turf Nursery, Velsicol Chemical Corp., Lakeshore Equipment & Supply Co., Agro-K Corp., Velotta Uniform Sales, Coatesville Machine, Dice Decal Corp., Feldmann En-Desco gineering, Chemical, American Pelletizing Corp., Professional Turf Specialties, USS Agri-Chemicals, Estech, Inc., Mobay Chemical Corp., and Monsanto Co.

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Rob Galey

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In a recent decision by the National Labor Relations Board in the case of Ohio Brass Company and Ricky Hillyer, the National Labor Relations Board considered whether or not an employer's questions regarding an applicant's history of workman's compensation claims would interfere with the applicant's right to engage in protected concerted activity according to the National Labor Relations Act.

The employer's application asked whether the applicant had ever "filed an industrial claim." Additionally, the employer asked the job seeker about his physical limitations, surgery, medical treatment, and whether or not he had ever been hurt on the job. The employer also required that the applicant pass a physical examination.

Legitmate right

According to the Board, the employer has "a legitimate and substantial business justification" in inquiring about the physical condition of job applicants. The company may be alerted through the information received on the application that "the employee applicant may have once been injured on the job, raising the possibilities of a continuing in-

Thus, the employer has legitinate health and safety interests in determining whether or not an employee who has filed a workman's compensation claim may be prone to further job related injuries.

The Board distinguished this case from Krispy Kreme Donut Corporation, where the Board decided that an employer may not terminate an employee in retaliation for filing a workman's compensation claim. According to the Board, employers are free to inquire from job applicants about their workman's compensation history, but employers are forbidden from terminating existing employees in retaliation for those employees filing workman's compensation claims.

We note that no employer is required to keep on his payroll an employee who is either accident prone, unhealthy, or simply fails to follow safety rules. This is in sharp contrast to terminating an employee for filing a workman's compensation claim, though either case may arise out of the same set of facts.

The City Council of Cincinnati has passed a "Right to Know" ordinance that requires employers to inform employees of hazardous materials in the work place. Cincinnati follows the lead of nine states and the City of Philadelphia, which have passed similar statutes and ordinances. This has prompted the Occupational Safety and Health Administration to hold informal hearings on a proposed hazards communication rule.

Cincinnati's ordinance requires that employers with twenty-five or fewer employees label hazardous

substances and inform employees of their risk within eighteen months. Those employers who employ over 250 employees have eight months to comply.

Post signs

Every employer is also required to post signs in all work areas informing employees of their right



LAWN CARE INDUSTRY

Richard Lehr





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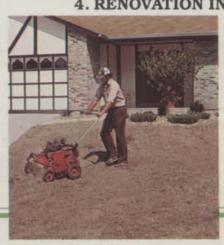
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INSIDE THE INDUSTRY

Turf Renovation Report

By Jim Mello

Consultant and Instructor, Turfgrass Management College of Dupage

As turfgrass managers we encounter many problem turf situations which can not be solved with a spreader. Fertilizers, fungicides, insecticides, and herbicides are valuable tools available to handle problems, yet they are not a cureall for declining turfgrass areas.

These tools cannot bring dead plants back to life. When necrotic or severely damaged turf areas must be corrected, a program of renovation may be necessary.

We can take great satisfaction in returning a problem turf area to functional and aesthetic quality. There are various methods available, but keep in mind some basic points:

Identify the problem

☐ Is it due to poor grass selection?☐ Is it due to improper cultural practices?☐ Is it due to insects, disease, thatch, or compaction?

Weigh the alternatives

☐ Should existing turf be non-selectively killed? ☐ Will aerification and over-seeding do the job? ☐ Should a slit-seeder be used?

Select a reclamation program

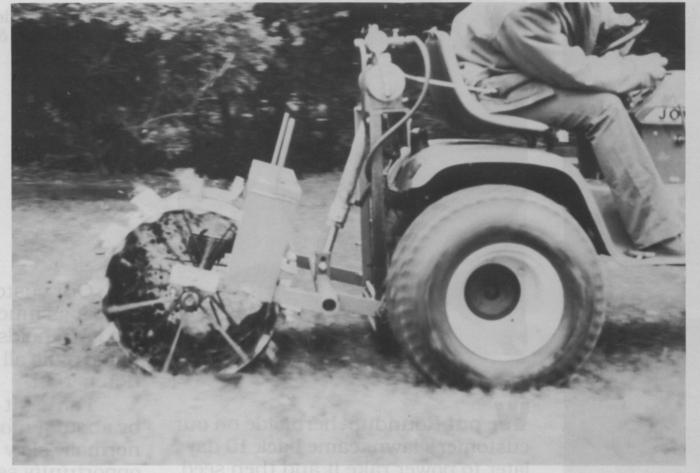
 \square Is it economical? \square Will the area recuperate quickly for the use imposed?

Execute the program professionally

☐ Is the right equipment being used? ☐ Have you selected the proper grass for use imposed? ☐ Is the crew trained and is the necessary supervision on hand?

Follow through with postrenovation maintenance

☐ Do mowing and watering practices favor new development? ☐ Have you spot-seeded any areas that did not take? ☐ To reduce stress are you controlling thatch and compaction by routine aerification? ☐ Are you fertilizing properly and controlling weeds effectively?



The success or failure with turf lies in the decisions and practices of the turf manager.

For declining turf, first identify the problem. Improper variety selection can be the basis for turfgrass decline. Fine fescue, basically a shade-loving grass, will do well in the full sun of a cool climate, such as western Canada.

However, when fine fescue is grown in the sun under warm temperature conditions, like southern California, it has great difficulty surviving. Warm-season grasses, such as bermuda and zoysia, do well in the southern United States, yet as they move north of the transition zone into Ohio or New York their dormant off-coloration makes them undesirable species.

In New England many home lawns are old and have been seeded with common Kentucky bluegrass varieties. In their cool, moist climate leaf spot disease flourishes, thinning out many turf areas.

The reclamation of these areas to improved bluegrass varieties, which have been bred for resistance to leaf spot, would provide a healthy turf.

Improper cultural practices set the stage for many problems. Any procedure performed on turf which causes stress invites unwanted pests to attack the predisposed turf.

Close mowing, improper irrigation, poor fertilization practices, chemical injury, heavy wear, soil compaction, excessive thatch accumulation, extreme air temperatures, and drainage problems are some of the stresses which weaken turf and encourage problems that have to be remedied through renovation.

Proper selection

A healthy lawn which contains a high percentage of broadleaf weeds or annual grasses can be corrected through the proper selection and application of herbicides.

Applying a broadleaf herbicide or pre-emergent annual grass control can maintain that area weedfree.

Certainly this situation would not call for renovation unless the desirable grass species remaining are not maintaining a dense cover. In this case, introduction of seed would provide new plants.

Insect damage can seriously thin turf. Insects should be identified to learn what type of insects (sucking or chewing) and which plant parts are affected. For example, the greenbug aphid will attack the leaves of Kentucky bluegrass, piercing cells and sucking out the leaf juices.

In many cases, the application of an insecticide in combination with nitrogen will stop further damage and promote new top growth. Seeding would not be necessary. Damage to roots and crowns by white grubs, billbugs, or ataenius will cause complete loss of large turf areas.

After an insecticide is applied to stop further damage, renovation is necessary to regain a healthy grass stand. However, not all damage by insects requires renovation. Be sure to identify the pest, analyze the potential for recuperation by examining roots and crowns for injury, and then select the proper insecticide.

Give the turf a chance to recover and then renovate the bare areas.

Disease causes various symptoms in turf. These range from slight discoloration to total

SEPT 19

death. Whether total kill has come from fusarium blight in bluegrass, anthracnose in annual bluegrass, or spring deadspot in bermuda grass, the only solution to deaf turf is replanting.

Select grass varieties which will show better resistance or perhaps be more suitable for local conditions. Fungicides are a great preventive tool, and their high cost can be justified when puttinggreen quality maintenance is involved.

However, when we maintain large areas, such as home lawns, the cost of fungicide use becomes prohibitive. When cultural procedures, like proper mowing and watering can not keep a turf area from fungal infection, rejuvenation through renovation becomes the most economical alternative. Proper diagnosis of the disease aids in selecting the proper varieties for teh reclamation process.

Weeds

A weed is a plant out of place. In Tulsa, Oklahoma, annual bluegrass is a weed in a bermuda grass lawn, yet in Cincinnati, Ohio, bermuda grass is a weed in an annual bluegrass lawn. Weedy grasses, also, such as quackgrass, annual bluegrass, tall fescue, bentgrass, bermuda grass, or nimblewill can infest a desirable turf stand.

These weedy grasses are objectionable because of their variations in color, growth habits, and competitiveness. Once a perennial grass invades, a non-selective herbicide must be used to kill the unwanted vegetation.

Reclamation alternatives

Before starting to restore turf that has a problem, we must examine alternative program and take into account their potential for success and the costs involved.

With inflation affecting homeowners, can they justify the expense involved in alternative reclamation programs for their troubled landscapes?

Thatching and Overseeding

Many turf areas are being reclaimed through dethatching or powerraking and overseeding. A dethatcher or powerrake has a set of blades or spring teeth, which cut or comb the thatch, bringing it to the surface.

To prepare a seedbed effectively the seed must come in contact with the soil. Dethatchers will bring a great deal of debris to the surface, but if there is a severe thatch layer, the blade will not penetrate completely down into the soil.

Dethatching should be repeated, removing as much of the thatch layer at one time, without tearing out the entire sod layer. When a heavy thatch condition develops, crowns and other parts of the plant grow in the porous, organic layer, creating problems. The thatch, because of its physical nature, does not provide a satisfactory growth media. To dethatch an area

totally, removing all the dead organic matter, could, just as if we had used a sod cutter, leave us with hardly any plant growth left.

By repeating the dethatching procedure many times, removing a portion of the layer each time, allowing time for recuperation between each dethatching, we will eventually reach the desired thickness of this organic layer.

This program involves many hours of labor for both machine operation and cleanup time. If the thatch layer is thick, the seed will lay on top of thatch and its potential for establishing itself is not great.

If the thatch layer is thick in your problem turf area, then the dethatching units can cut through and expose the soil for seeding. In this case dethatching the area once to break up the layer and removing the debris is all that is necessary.

Broadcast Seed

Seed should then be broadcast over the entire area, and the dethatching process should be performed again to incorporate the seeds in the soil. One of the greatest benefits of the dethatching units even when they cannot fully penetrate the thatch area is their vertical mowing action.

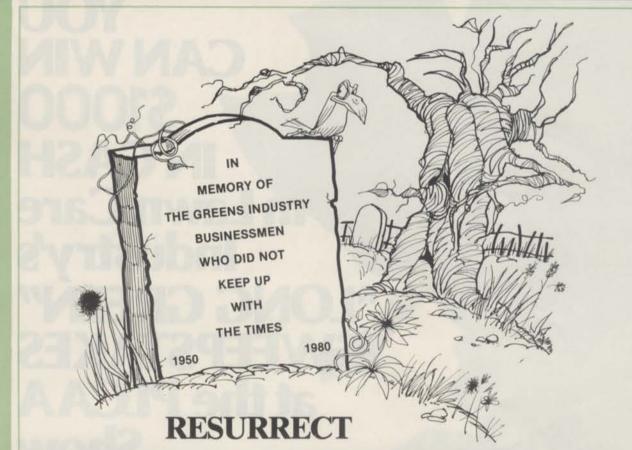
This separates connecting rhyzomes and/or stems stolons between parent and daughter plants, reducing stress on both. Also, dormant buds can be exposed which will give rise to new plants.

Once the thatch depth is under control, routine dethatching will keep the layer to a minimum reducing plant stress. Dethatching, however, does not have any effect on relieving soil compaction on established turf. This can only be accomplished through aerification. Dethatching should be scheduled for fall, reducing the incidence of annual grasses and broadleaved weeds.

If a pre-emergent crabgrass herbicide has been applied the cutting action of the dethatcher will break this barrier and bring about a potential weed problem.

Dethatching is one form of renovation which should be used as a

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preventive measure rather than a cure for heavy thatch. To reduce a two-inch thatch layer properly to a quarter inch or to prepare a favorable seedbed requires numerous efforts.

Resodding

The prospect of an instant lawn which has sold the most anxious client can only be achieved through sodding. Sodding is also a quick solution for erosion on steeply sloped areas. On the other hand, sodding is an expensive process.

Do we know what varieties are being delivered in a sod mix? We

should if we are going to predict its performance in seasons to come. Buying sod is like buying a used car. We often do not know its history. But when we buy a used car at least we know the model and can relate that model to its track record for performance and dependability. If we do not know the varieties in a sod blend, we have no way of predicting or evaluating its performance.

In the past most of the sod delivered was a monoculture containing one specific variety of bluegrass. This becomes a disadvantage if disease strikes, because if all the plants are genetically identical they will all show the same susceptibility to fungal invasions. If this happens the result is a

large area of infected turf. Most sod growers now incorporate a blend of different varieties within a sod field insuring survival of the fittest

If one variety shows susceptibility to a disease, then a resistant variety will fill in the injured area. Furthermore, when sod is delivered for installation, much of the root system (the most important part of the plant) has been left in the sod field. The soil should be prepared in a way which will favor new root development.

Media interface

If the sod, grown on peat, is laid over clay, the interface of these two physically different growing media creates a poor situation for the reestablishment of the root system.

A sod area with an undeveloped root system creates a serious stress problem, predisposing the plant to effects of disease, drought, and other stress related adversities.

Core aerification

Interfacing soil problems, heavy, thatch, and poor rotting hinder growth and development of a sodded area. Reduction of these stresses can be achieved through core aerification on a yearly or bi-yearly schedule. Core aerification involves the removal of a soil/thatch core two to three inches deep over the entire problem area.

Coring breaks up the thatch layer, allows water to penetrate into the root system and gasses to flow freely in and out of the root zone. Coring breaks up the serious interfacing problem of soils with unlike physical properties.

Roots do not grow in soil; roots grow in space between soil particles. The greater the porosity the more room for the roots to grow and develop. In a tightly compacted clay, undersoil roots have very little room to grow. The roots prefer to stay at the surface in the porous peat or loam soil brought in with the sod.

Porous spaces

Using core aerification we create large porous spaces which rapidly fill in with turf roots. This greatly increases the turf's vigor, drought tolerance, and overall health.

Large core aerification units are available for vast turf areas such as parks and fairways. On the home lawn a smaller unit is needed to maneuver the equipment in tight places. The unit should also be capable of being raised or lowered for driving over sidewalks and curbs.

I have found the Dedoes aerifier with its separate hydraulic lifting system a versatile unit. In tightly compacted clay undersoil, the hydraulic lifting system gives excellent down pressure for deep penetration. Many of the walkbehind aerification units do not have enough for maximum benefits. Weight is a very important factor when trying to penetrate a hard clay soil.

Penetration weight

To increase the penetration weight, the tires have been filled with calcium, and this year I have added 100 pound wheel weights. This increases the weight 200 pounds per tire, totally 1300 to 1400 pounds of down pressure.

With the sod fully opened, overseeding efforts will provide excellent results because the seeds will come into contact with the soil. The soil cores brought to the surface are broken up by rains and provide a topdressing rich in soil microorganisms which biodegrade thatch into valuable plant nutrients. The soil brought to the surface also makes a favorable





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seedbed into which new varieties can be incorporated.

This process should not be called dethatching but more appropriately thatch modification. The intermingling of the soil with the thatch favors decomposition and alters the physical structure of this organic layer. With soil core removal water can now penetrate the surface easily, fertilizer can move more readily to the root system, and gases and head exchange can take place. New varieties of turf can be incorporated for a move away from the less desirable monoculture and toward better disease resistance.

With warm season grasses the

benefits also include a source of new plantings. Each soil core removed contains viable nodes which can give rise to new plants. These sprigs can be collected and used to establish grass in problem areas or in new places where vegetation is needed. Golf course superintendents have established nurseries by collecting these plugs, piling them two to three inches deep, raking them level, rolling, fertilizing, and watering. New growth begins immediately.

Consider coring

Core aerification done on a routine basis can help restore many declining turf situations. Coring should be considered before reaching for a solution on the chemical shelf.

Slitseeding

Sonetimes we will encounter turf which is so severely thinned that core aerification and overseeding will not provide enough plants to recover the declining areas. In this case the slit-seeder can be used to incorporate seed in rows without completely stripping the area and starting all over.

The grass should be mowed short to reduce the debris brought to the surface. The slitseeder will bring matted grass and heavy thatch to the surface. After the renovation is completed this material should be raked and scraped.

Whenever seeding is done proper placement of the seed in contact with the soil should be given the utmost priority. If moisture, light, and temperature favor germination a seed may germinate in the thatch but its survival potential in this porous medium is low.

By using the slitseeder, seed to soil contact is assured. The machine has a set of blades in front which cuts grooves through the thatch down into the soil. A set of discs located behind the blades keeps the slits open while seeds flow from a seed hopper through a small tube into the slits at the base of the disc.

The slits are two to three inches apart, close enough for the new plants to fill in rapidly. The slitseeder also cuts through the thatch layer, providing an avenue for the new seedlings to grow through.

This vertical cutting action also stimulates new growth. The rhizones and stolons of the existing turf are cut and new shoots grow from uncovered nodes and growing points.

Surface disruption

New seed varieties can be incorporated without severe surface disruption. Slitseeding followed by core aerification provides excellent results because the surface has been mechanically modified to favor new growth and development. The seeding rate would vary depending on the various weights of the different seed species.

The rate of seed flow is easily adjusted to compensate for seed size and weight. In overseeding stressed cool season grasses, I have used a mixture containing four different bluegrass varieties and 15 percent perennial ryegrass at a rate of two pounds per 1,000 square feet.

Bare soil

After sweeping off the debris left by the slitseeder I then hand overseed another pound per 1,000 square feet to cover any totally bare areas. The perforated sod area into which the seed has been incorporated protects the young seedlings against birds and dessication.

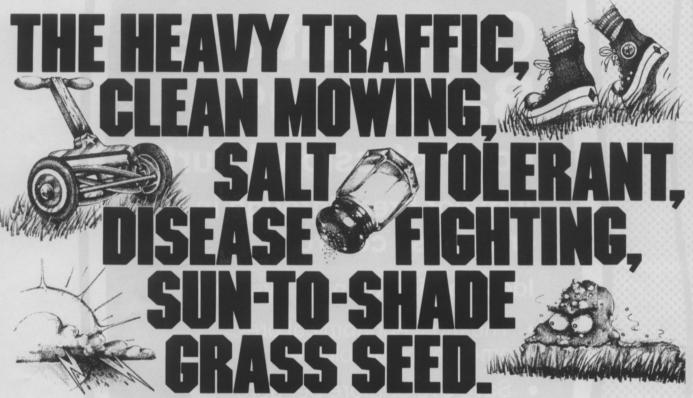
The watering requirements are less than for seeding on bare soil because the sod/thatch layer protects the seed and retains the moisture. An advantage is that the area renovated by slitseeding is never out of service. The area will look as if it has been renovated but it will still be firm and usable. In fact, entire golf courses have been changed from one variety to another without interruption of play.

Usually a non-selective herbicide like Roundup is sprayed on to kill all growing plants on the site.

Disadvantages of Slitseeding

Many people anxious to have a beautiful turf area are very impatient. A beautiful turf from seed or slitseeding takes longer than lay-

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Tall Fescues Triumph

Trends in turfgrass varieties have come and gone in the past two decades. In the 1950's, Merion bluegrass was popular. In the 1960's and 70's, it was improved Kentucky bluegrasses. In the mid to late 1970's, perennial ryegrasses had emerged as highly desirable. And now, during the 1980's, tall fescues seem to be the bright spot on the horizon.

With more and more lawn care businessmen voicing their concerns about energy conservation and cost efficiency, it is easy to understand the attraction of tall fescue varieties. They are heat and drought tolerant, thrive equally well in sun or shade, and can withstand heavy traffic and require minimal maintenance. Two major benefits are less thatch buildup and the ability to resist fusarium roseum, a dreaded disease of Kentucky bluegrass.

Growth

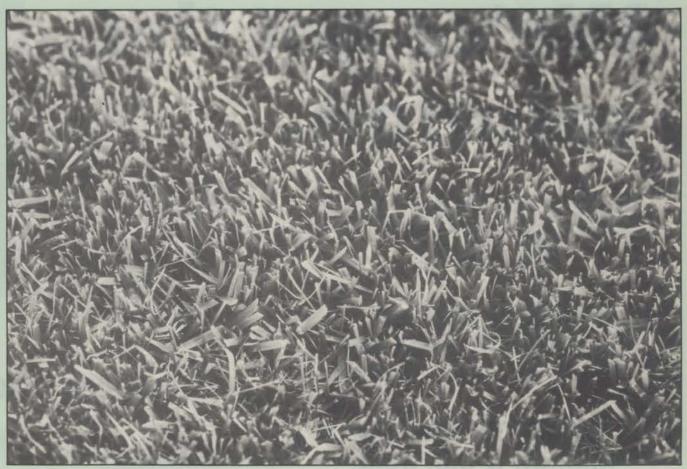
"We'll soon see tall fescue growing on thousands of athletic fields, home lawns and industrial parks from New York south to Atlanta, west to St. Louis and Kansas City and throughout southern California," said Dr. Rich Hurley, vice president and director of research and development at Loft's Seed Inc., Bound Brook, N.J., producers of Rebel and Clemfine, two of the varieties in large supply.

Other tall fescues currently on the market include: Falcon, produced by E. F. Burlingham & Sons; Olympia from Turf-Seed; Shannon from Northrup King; and Houndog and Brookston from International Seeds. "Plant breeders first started researching tall fescues in the 1960's, but it wasn't until 1977 that we decided to invest in the future of tall fescue," says Hurley, noting that Rebel was the first variety on the market.

Uniformity

According to Hurley, tests have shown Rebel to be significantly finer and more dense than K-31, thus providing greater uniformity. "Since Rebel and other fescues don't need to be irrigated as much as ryegrass and bluegrass, and provide excellent tolerance to traffic, they are much more energy efficient for public-use areas, cemeteries, and home lawns. The White House was recently seeded with Rebel," he said.

"In the past, many lawn care businessmen and landscapers shunned tall fescues because of



their clumpy, patchy appearance and inability to mix well with previously planted turf. Most of these new varieties are much finer of blade, but compatibility is still a problem," Hurley admits. As a result, he recommends a "total transformation" in the form of renovation.

"Overseeding is possible, but not recommended," he explains. "When overseeding a mixed lawn consisting of various species, it would take at least four or five years to change the population enough to make a difference. Another problem is that hardy weeds and grasses like orchard-grass, bentgrass, quackgrass and bermudagrass will usually persist despite overseeding the fescue. The same job can be accomplished in one season with total renovation."

While many lawn care professionals may feel renovation is a time consuming and costly process, Hurley emphasizes the customer will be happier with total renovation in the long run. "Homeowners are very impatient," he says. "They want to see a change in population immediately, a near impossibility with overseeding. Within a month after a renovation, they'll have a new lawn that not only costs less to maintain, but looks a lot nicer."

According to Hurley, lawn care businessmen seeding tall fescues like Rebel will need to irrigate just two or three times a season, and only during prolonged stress periods. "That's about an 80 percent water usage reduction versus ryegrass and bluegrass lawns," he points out. "In addition, Rebel can be maintained at a mowing height of one and one-half to three inches while still maintaining a solid stand. Tall fescues don't grow as fast as ryegrass and bluegrass, so that means fewer mowings as well."

Fall renovation

Loft's recommends all renovations be undertaken in the late summer and fall, with dates ranging from mid-August in the east and Midwest to mid-October in the south. "Spring renovations interfere with crabgrass control so many landscapers find fall seeding desirable," says Hurley.

The renovation procedure recommended by Loft's begins with application of a two percent solution of Roundup, a non-selective herbicide that "translocates" throughout the entire plant, controlling above and below ground growth. "Because Roundup effectively controls existing turf, it is the most effective and cost efficient renovation toll currently on the market," contends Hurley, noting that he renovates all of

Loft's research plots with Roundup. "Eliminating all the previously planted grasses is vitally important from the standpoint of uniformity."

The fact that the herbicide has no residual soil activity and has relatively low toxicity also makes it suitable for use in renovation situations, Hurley feels. "After seven days, the existing turf should be deaf, and lawn care professionals can start seeding, after verticutting to improve seed-soil contact." Hurley notes, "Frequent irrigation should begin after seeding or as needed to aid germination."

Tall fescues should be seeded at a rate of 10 - 12 pounds per 1,000 square feet. When utilizing a 90 - 10 percent mix with Kentucky bluegrass, seeding should be at the rate of 8 - 10 pounds per 1,000 square feet.

Hurley estimates the cost of renovating a 5,000 square foot area with Rebel at \$150, versus \$75 for an overseeding operation.

While it might appear that overseeding is cheaper, Hurley cautions lawn care businessmen to look closer. "It actually costs \$300 to overseed because of the four years of constant reseeding necessary to see a change in population," he said. "In the long run that's a costly investment for the customer and the lawn care professional."

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Proper zoysiagrass care and establishment

There has been some decline in the quality of zoysia lawns in the past few years, according to John H. Dunn, professor of horticulture at the University of Missouri, and many turf managers, he says, are at a loss to explain why.

At the Missouri Turfgrass Conference, Dunn offered some background on this hardy creeper, gave some explanation for its unfortunate decline, and suggested tips for proper application in order for turf managers to benefit from some

of its best qualities.

The principle zoysiagrass used in the midwestern United States, he said, is Meyer's Zoysia, named after Frank Meyer, a nineteenth century plant explorer with the U.S. Department of Agriculture. Akin to zoysia imports from the tropical regions of Asia, Meyer's zoysia is known for its fine texture and pleasing green color. It develops into a tough, wear-resistant and cold-hardy turf.

Dunn said zoysia's Manchurian background makes it one of the best warm season turfgrasses for cold hardiness. Compared to Midway Bermuda during tests at the University of Missouri, Meyer's survived temperatures below 14 degrees celsius, while Midway survived to five degrees, making the zoysia quite a bit more cold tolerant than even the more cold-hardy bermudas.

Zoysia didn't have its professional heyday until the 1950's and 1960's, Dunn said, when professional turf managers found that the heat tolerant bermudas proved defenseless against the onset of colder winter seasons. When turf managers soured on bermuda, the door was opened for the zoysias.

Establishment. Dunn told the audience of turf managers that there are three basic methods of establishing common zoysia. The first is sodding, which because it costs about three dollars per square yard, is generally rejected in favor of cheaper methods.

A less expensive method is strip sodding, which, when the sod is spread apart adequately, enables the manager to cover a large area with less vegetative material. Dunn said a variation of this method calls for paraquat applications to reduce competition between the zoysia and already established turfgrasses. Although efforts are continuing to perfect methods of competition reduction, including growth regulators, research is not complete, Dunn said.

By far the preferred method of zoysia establishment is sprigging. Although there are homemade machines which will sprig automatically, Dunn says that simple hand sprigging on a six inch center is one of the surest methods.

The sprigs can be broadcast, but unless an excellent irrigation system is available, and the sprigs are constantly watered, this method is risky. Dunn suggests the sprigs be top-dressed lightly and then pressed into the soil with a roller or disc. A manure spreader, he said, also works well.

During establishment, liberal applications of nitrogen are recommended. About eight to ten pounds of nitrogen per thousand square feet is suggested during the first and perhaps second growing periods. According to your soil tests, nitrogen carriers may be altered a bit to supply more potassium or phosphorus, but Dunn says to keep carrier levels to a minimum.

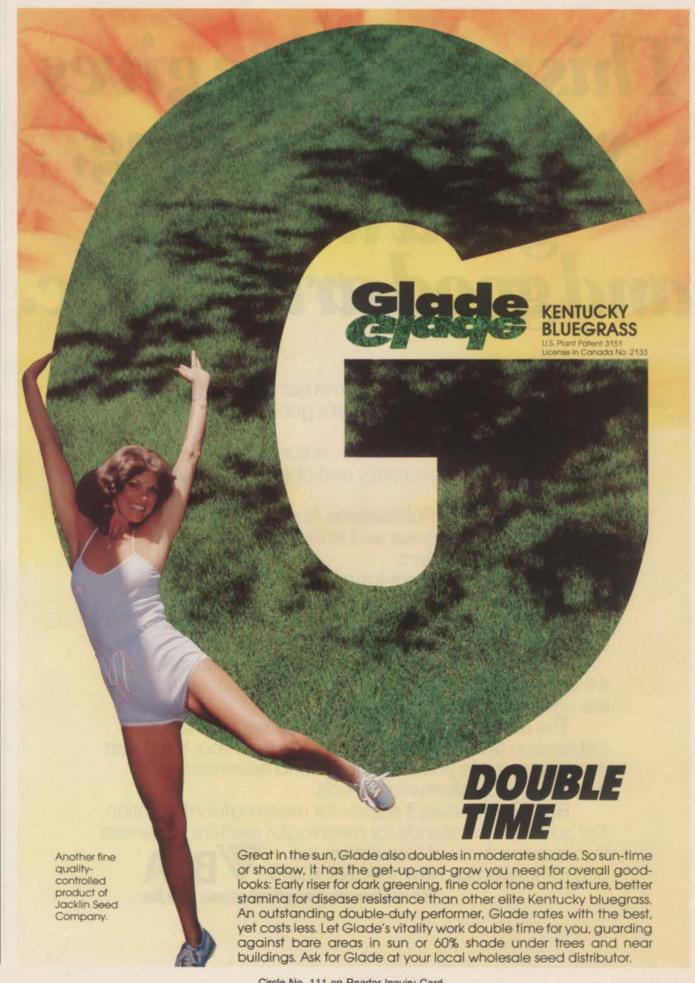
Weed control. Weed control is important when establishing zoysia because of its long growing period. Dunn advises that 2,4-D control of weeds be postponed until after hardy establishment. Slope areas should probably be seeded with ryegrasses to prevent erosion, but after a period of careful management, the cool season grass will thin out.

Zoysia seed. The seed of the zoysia plant has a very thick hull which may retard proper germination. Research has been done to perfect methods of softening the hull with chemicals and scarifying techniques. Dunn says it has been quite successful. A mechanical hull removal method has proved less successful because of the increased risk of injury to the young seeds. Dunn says that uniformity of appearance is best achieved when vegetatively established seed types are used.

Fertilization. Dunn says that once zoysia is established, nitrogen applications can be reduced to

one and-a-half to two pounds per 1,000 square feet. Timing is very important, he says, because some of the time people are late with their applications. In order to avoid winter injury risks, zoysia fertilization should be ended in late August or early September.

Thatch. Thatch is a big problem with zoysiagrass because of the thick-walled cells on its rhizomes which become very difficult to break down and add significantly to thatch build-up. Keep mowing levels to three-quarters to one inch. Because it doesn't properly mix the soil with active soil microbes, raking is an inadequate method of thatch removal. Use a heavy machine. Even a rental unit may not be sufficient.



ing sod. Your potential slitseeding customer must be informed that it will take the seed months to fill in and form a dense turf. Also the homeowners should know they may have to look at weeds during the recovery period when we can-

not apply herbicides.

Another challenge to slitseeding is irrigation systems. You have to make sure they are not damaged. Marking all the sprinkler heads and valves with marking paint or short stakes makes visibility simple. I had one client, a physician, who decided to mark the system since he knew where all the heads were.

When I arrived at the site I found

a sea of tongue depressors marking every sprinkler head. Fenced backyards are sometimes a challenge but most gates are wide enough.

Timing of the slitseeding process is critical for proper estabbeneath the sod, warms much more slowly than the bare soil which readily absorbs the sun's heat and light.

The competition from the established grasses reduces the chance

"At some point all turf professionals must deal with the challenge of declining turfgrass. By sharing ideas at seminars, conferences, and conventions, we can keep up with our growing and ever-changing field."

lishment. Slitseeding cool season grasses does not do as well in spring as in the fall. Cool soil temperatures in the spring prolong the germination time and the existing sod season. The soil,

for the new seeds to develop.

Pre-emergent herbicides to control spring and summer annuals cannot be applied because they will inhibit growth of the new seedlings. The physical opening for turf provides an opportunity for weed seeds to grow and develop.

Pre-emergent herbicides to control spring and summer annuals cannot be applied because they will inhibit the growth of the new seedlings.

Post-emergents

Post emergent herbicides should not be applied because of the damage to the young seedlings. If you are located in an area where summers are hot and dry, the young seedlings which germinate in late spring will not have a developed root system. Their survival through stress periods, therefore, depends on faithful watering to keep them alive. This could mean numerous waterings, perhaps even daily if drought and high temperatures persist.

Fall is best

Slitseeding in the fall is best. Pre-emergent and post-emergent herbicides can be applied in the spring. In late summer when cool season grasses are growing slower (which will reduce their competition with the new seedling) the high temperatures will promote rapid germination. The cool and moist fall period provides a favorable environment for the young seedlings to survive.

The following spring because the plant has reached a state of maturity which can tolerate chemicals, both pre-emergent and post-emergent herbicides can be applied. By the tine the summer stress period approaches the plant will have a developed root system, which requires less water and is prepared to face the heat and the drought. An old disease or insect riddled turf area now takes on new life as the improved varieties take over where the old failed.

Warm season grasses

Warm season grasses in the south are often overseeded during winter to provide a green turf full season. The strong lateral growth of bermudagrass, zoysia, and St. Augustine grass, to name a few, benefits greatly if they are vertically mowed yearly. Using a slit-seeder the vertical mowing and the overseeding can be done in one operation.

By using the slitseeder, different varieties can be used by simply adding the seed to the hopper. Shade areas can be seeded with shade tolerant grasses, heavy wear areas can be seeded with wear tolerant species, and the sun loving grasses can be used in the full sun areas. Selecting the right seed for the environmental conditions assures success in establishment.

At some point all turf professionals must deal with the challenge of declining turfgrass. By sharing ideas at seminars, conferences, and national conventions, we can keep up with our growing and everchanging field and upgrade the professionalism in turfgrass management.

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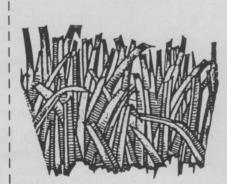
Keynoting the convention this year will be Earl L. Butz, former U.S. Secretary of Agriculture, and Dean Emeritus of Agriculture, Purdue University, West Lafayette, Indiana. Dr. Butz will address the subject of the value of the small business entrepreneur in the American economic system under the title, "Populism, Politics, and Progress."

Trade Show

View the latest developments of products and services and have your questions answered by exhibitors in the attractive Convention Exposition Center conveniently located to hotels and downtown. Exhibit hours have been extended into the afternoon of the final day to provide more visitation time by registrants. Many new exhibitors representing a wide diversity of product lines already are contracted for PLCAA '82.

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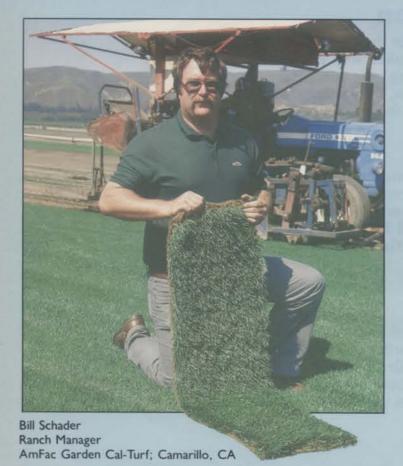


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Rankings from turf trials throughout the United States:

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Kentucky Bluegrasses (I - best)	Rutgers University 23 entries seeded—1976 data—1977-79 (3 yr. average)	Ohio State University 40 entries seeded—1978 data—1980	University of Illinois 20 entries seeded—1978 data—1980	Kansas State University 45 entries seeded—1979 data—1980	Camarillo California 25 entries seeded—1977 data—1978	University of Idaho 62 entries seeded—1979 data—1980
Columbia	2	3	1	13	2	6
Midnight	35	1	3	13	5	1
Baron	14	39	12	23	13	27
Adelphi	1	36	2	16	4	4
Victa	20	38	17	15		9
Touchdown	3	18	18	7	14	46
Merion	19	34	20		18	12

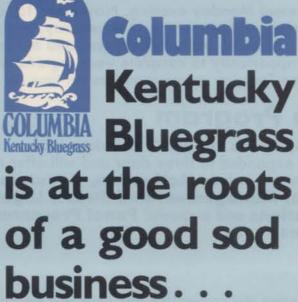
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These test plots at Camarillo, California, proved Columbia Kentucky Bluegrass was best suited to this area. Fusarium and rust damaged Baron, Victa, Glade, Park and Touchdown while Columbia rated second only to the experimental CHB-IIA. As a result, Columbia was chosen as a vital part of the mixtures used in southern California sod.



Improved tall fescues, however, have solved the heat tolerance problem, while retaining low maintenance advantages and adding a lower maintenance requirement.

As a result, spot shortages of tall and hard fescues are possible this fall and next spring, according to seed growers. They have not been able to increase production of these improved varieties enough to keep up with the demand. Consequently, the new tall fescues Mustang, Rebel, Houndog, and Falcon could be relatively scarce next spring.

Hard fescues such as Waldina, Reliant, Tournament, and Scaldis are useful for shade locations since lower maintenance is required. They too could fall short if their popularity continues to increase as predicted.

Ryegrasses

Once considered a less attractive turfgrass with poor mowing characteristics and light green color, perennial ryegrasses have overcome their shortcomings and are competing with Kentucky bluegrasses in the marketplace. Seed scientists have developed darker color, better mowing characteristics and finer leaf structure in perennial ryegrasses. Again, with the rapid germination period, the ryes could compete well against Kentucky bluegrasses.

Perennial ryegrass seed production is lagging slightly compared to the extremely high demand, with pricing either holding or increasing. Stanley, a marketer of ryegrass, predicts that "perennial ryegrass will overtake bluegrass if the economy improves even though it is almost twice as expensive in some cases." Loft's Rich Hurley believes that there will not be enough fine fescues to go around this season.

Bentgrasses

Bentgrasses are selling well in the Sunbelt, but poorly in the North, according to Northrup King's Vetter. As a result, demand is average for this specialty turfgrass. Penneagle supply may not meet demand this fall and next spring, but any shortage would be minor.



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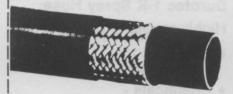
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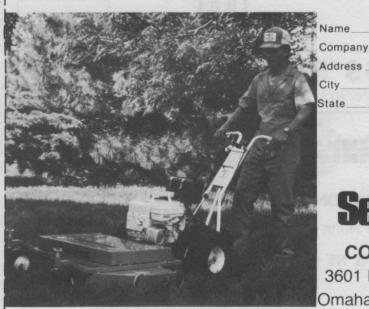
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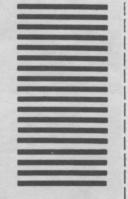


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Bans On Watering Will Not Forestall Drought

In many areas of the United States, drought conditions have led government to attempt to legislate a ban on landscape irrigation. The problem stems from the use of 82 billion gallons of ground water each day and the replacement of only 61 billion gallons through rain and runoff water.

This creates a daily deficit of 21 billion gallons. Why is there an imbalance and can government legislate a solution, asks Jerry Robertson of Ohio State University.

In a special report Newsweek magazine stated that the water problem was due to an imbalance in the distribution of rainfall in the U.S. during a decade when Americans are using water at an increasing rate. Rain is not the solution to the water shortage. Even in the driest areas, rainfall in the U.S. exceeds water use.

Not a solution

A ban on watering will not solve the problem. Of the 82 billion gallons of water used in the U.S., less than 7.3 billion gallons goes to domestic use and less than one percent of that is used in irrigating landscaped areas. Thus, a ban on watering landscape plants would have an insignificant impact on the 21 billion gallon imbalance of water supply and demand in the U.S., says Robertson. However, a ban on landscape irrigation could economically devastate the lawn care industry in drought affected areas.

The lawn care industry is important to the U.S. economy. They employ a half a million persons and sell almost \$16 billion annually in products and services. Over 90 percent of the industry's firms are located in drought affected areas, and thus a ban on watering plants would have a drastic effect on these firms.

Damaged material

Beyond the negative economic impact to the industry, consumers would also suffer substantial economic loss from damaged plant materials if a ban on landscape watering were implemented.

In 1980, there were 48.2 million owner occupied single family dwellings in the U.S. with land-scaping that averaged 13 years old. With an average landscape value of almost \$10,000, the economic value of U.S. residential land-scapes is about \$500 billion. Another several billion are invested in commercial landscapes.

The limiting of water use risks the economic vitality of not only lawn care firms, but all the service firms that are involved in lawn maintenance activities. Rather than risk an ecomonic loss of plant material in a planned landscape that cannot be watered, firms and individuals will forego a landscape investment. Thus, the entire lawn care industry is damaged.

Over 52 percent of this industry is concentrated in the five states of Pennsylvania, New York, California, Ohio and Florida. A ban on watering in New York risks the \$1.7 million dollar lawn care industry in that state and a significant landscape investment.

A state or regional ban on lawn care irrigation can have a significant economic impact on many home owners and a large number of firms that sell lawn care products and services. Each landscape is different and the homeowner must make an independent decision of irrigate based on the needs of the area and the landscape, the economic value of the landscape and the cost of water.

To uniformly ban irrigation may save water in the short run, but places a severe economic risk on a large number of homeowners, commercial firms and the lawn care industry as a whole. The loss of turf areas due to water stress may have an economic impact many times it's value.

Ariens Acquires Gravely

Ariens Company, the Brillion, Wisconsin-based manufacturer of outdoor power equipment, has acquired the Gravely Division of McGraw-Edison Company. The Gravely Division will become Gravely International, Inc., a wholly-owned subsidiary of the Ariens Company and will operate as an autonomous entity of Ariens.

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Fight snow mold at first sign of winter

Lawn care businessmen in the northern regions should be well aware of the hazards of snow mold this winter, as the season is expected to be a severe one. Snow mold, of course, describes a group of diseases that occur under snow cover or in the advancing margins of melting fronts.

For many years it was believed that two fungi species were primarily responsible for snow mold turfgrass injury: Typhula blight

(gray snow mold) caused by Typhula incarnata and Fusarium patch (pink snow mold) caused by Fusarium nivale. However, according to Dr. Joseph Vargas of Michigan State University, other fungi are involved in snow mold complexes in the more northern reaches of the western United States and Canada. These include Typhula ishikarienses (Typhula blight), Sclerotinia borealis (Sclerotinia patch) and an un-

identified fungus belonging to the basidiomycete class of fungi (low-temperature basidiomycete or LTB).

Good snowmold management begins early in the fall with the advent of cool weather. This is when the first fungicide application should be made, especially in areas where long periods of cool wet weather precede snowfall. In areas where snow covers the ground for two or three months, the best time to make final fungicide applications is when vertical growth ceases.

The other key to good snow mold control is to avoid late summer or early fall nitrogen application that leaves the turf in lush growing condition just prior to snowfall. Lush turfs are much more susceptible to snow mold than turfs that are in a hardenedoff condition.

If the snow mold kills large turf areas, some form of cultivation may be necessary. Reseeding will be necessary to reestablish creeping bentgrass and perennial ryegrass turfs. Annual bluegrass turfs should be spiked and aerified to

allow germination of seed from the

reservoir in the soil and thatch.

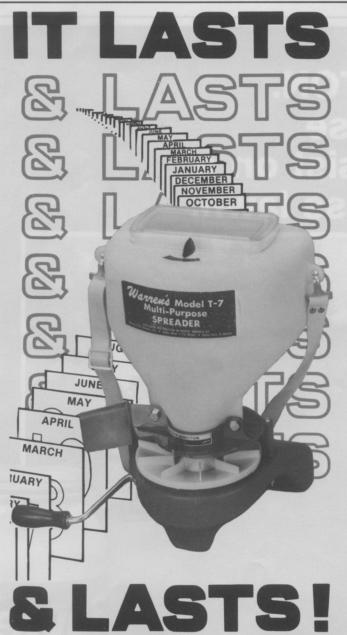
The New York State Turfgrass Association's Annual Conference and Trade Show will be conducted November 9 to 11, 1982, with the trade show and educational sessions located at the Rochester War Memorial. The Genesee Plaza Holiday Inn will be the host hotel.

NYSTA Show

In November

Rochester is the previous site of the largest and most successful NYSTA show conducted in 1980. The association says they are expanding the trade show in the Rochester facility, with much of the floor space devoted to the display of heavy equipment.

For complete information on the trade show, contact Janet Dudones, The Ed Worthington Corporation, 50 Oetrova Avenue, Saranac Lake, NY 12983. For all other information relating to the conference, contact NYSTA Executive Director Ann Reilly, 210 Cartwright Blvd., Massapequa Park, NY 11762. (516) 541-6902.



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New Study on Gypsy Moth Begun

For more than 100 years, forestry experts have been searching for ways to get rid of the gypsy noth, an Old World insect pest responsible for millions of dollars in damage to trees each year. Now, researchers at the University of Maryland's Agricultural Experiment station have begun studies they hope will shed light on new gypsy moth control.

The studies center on the adult "eclosion" process — that point in the adult's lifecycle when it emerges or hatches from its pupal case, according to Dr. Michael C. Ma, assistant professor of entomology at the university. It is during the eclosion process, says Dr. Ma, that insects like the gypsy moth are highly vulnerable and, he believes, his research may give scientists a clue as to how they might control or inhibit the "turning on" of adult behavior.

With research just under way, Dr. Ma and fellow researchers have found the gypsy moth's brain houses a hormone which triggers the onset of eclosion. The concept of a hormone triggering mechanism was first discovered by Dr. James Truman (The University of Washington) in the Chinese silkworm moth.

"The eclosion hormone acts as a key that unlocks virtually adult behavior in the gypsy moth," said Dr. Ma. "Morphologically, the gypsy noth is an adult while it is in its pupal case at least two or three days before eclosion. But without the release of the trigger mechanism, the moth will not take on adult behaviors such as flights and reproductive activities," he said.

By understanding the release mechanism and action of the hormone, he added, scientists may be able to develop methods to interfere with, or stop, the "turning on" of adult behavior. This, says Dr. Ma, could in turn provide a means of controlling the population spread of the destructive pest. The gypsy moth, although a relative newcomer to Maryland, was introduced to the northeast United States in the late 1860's.

It was chosen as an experimental subject, said Dr. Ma, because since the mid 19th century it has proven to be the most ravenous of defoliating insects in the U.S. Each year, scientists estimate the gypsy moth causes several million dollars in damage to oak, beech, and maple trees in the U.S. In addition to large dollar amounts lost through damaged trees, huge sums of money are spent each year to control or eliminate gypsy moth populations.

Normally found in the U.S. Northeast, gypsy moths have been sighted as far south in Maryland as metropolitan Washington, D.C. Dr. Ma says his research should contribute significantly to a total integrated pest management program for the gypsy moth.

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Report Shows Most **Assess Late Charge**

Lawn care businessmen endeavor to manage their business in such a way as to encourage prompt payment of accounts. A recent turfgrass management survey found that the practice of assessing late charges is used by 85 percent of the members responding.

Local attorneys were reported to have been used by 65 percent of the firms. Small claims courts have been used by 55 percent of the firms. Mechanic's liens and collection agencies were reported to have been used at one time or another by 37 percent of the firms.

Some respondents indicated mechanic's liens and collection agencies are a last resort.

As indicated in the accompanying table, there is considerable variation from region to region as to which practice is preferred. Assessing late charges ranked first

in the Northeast, Southeast, Great Lakes and Great Plains regions with over 93 percent using this practice in the Great Lakes and Great Plains regions.

Two-thirds of the firsm using assessment of late charges charge 1.5 percent per month or 18 percent on an annual basis. The other rates reported ranged from 0.5 percent to 2.5 percent monthly.

Small claims court

The use of a local attorney was the ranking practice in the Southwest and Western regions and ranked second in the other four regions.

The practice of using small claims courts, with a national average of 55 percent usage, ranked third nationally in four of the regions.

While mechanics liens ranked fourth nationally, with a 37 percent usage, it is quite popular in the Southeast with 55 percent of the firms saying they have used it. In contrast, this practice is not popular in the Northeast where only 10 percent of the respondents indicated they use it.

The use of collection agencies appears to be the least popular of these practices. While 50 percent of the firms in the Northeast indicate they have used collection agencies, the highest reported in any other region was 38 percent.

In response to the question of how many months accounts are allowed to remain uncollected before turning them over to a collection agency, the response ranged from two months to nine months, with the average being 4.7 months.

As to what percent of the amount collected is retained by the collection agency, the responses ranged from five percent to 50 percent with the average being 26.4 percent. It was interesting to note that a few responded that the collection agency they use was charging an apparently low flat



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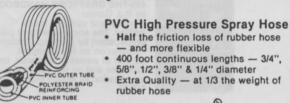
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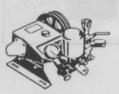
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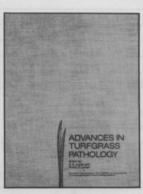
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Twenty-first Annual North Carolina Turfgrass Conference, January 4-6, 1983; Pinehurst Hotel, Southern Pines, N.C. Contact: L.T. Lucas, 3409 Gardner Hall. N.C. State Univ., Raleigh, N.C. 27650. (919)

Maryland Turfgrass '83, Baltimore Convention Center, January 10-12. Contact: Dr. Thomas Turner, 1112 H.J. Patterson Hall, University of Maryland, College Park, Md. 20742. (301) 454-3716.

Eleventh Annual Western Pennsylvania Turf & Grounds Maintenance School & Trade Show, Pittsburgh Marriott Hotel/ Expo Mart, December 7-9 Contact: Christine King, Executive Secretary-Treasurer, 412 Blanchard Street, Bellefonte, Pa., 16823. (814) 355-8010.

Pennsylvania Turfgrass Conference & Trade Show, February 28 - March 3, 1983, Hershe-Lodge & Convention Center, West Choclate Avenue & University Drive, Hershey, Pa. Contact: Christine King, Executive Secretary Treasurer, 412 Blanchard Street, Bellefont, Pa., 16823. (814) 355-

Virginia Turfgrass Research Field Days, September 14-16, 1982. Virginia Turfgrass Turfgrass Research Blacksburg, Va. Contact: J.R. Hall III, Agronomy Dept., Viriginia Tech, Blacksburg, Va., 24001.

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North Central Turfgrass Exposition, November 10-12, Arlington Park Hilton, Arlington Heights, Ill. Contact: Thomas W. Fermanian, 106d Horticulture Field Lab, 1707 S. Orchard Street, Urbana, Ill. 61801. (217) 333-7847.

Symposium on Turfgrass Fertilization, Columbus, Oh. Contact: Dr. B.G. Joyner, Plant Diagnostic Lab, ChemLawn, 6969 Worthington-Galena Road, Suite L, Worthington, Oh., 43085 (614) 885-8367.

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A sampling technique that forces adult bluegrass billbugs to come out of hiding can restrict the number of needless insecticides applied to turf and lawns.

This most destructive insect pest of Kentucky bluegrass in the Midwest spends its life below ground or hidden from all but careful search near the base of the plants, says U.S. Department of Agriculture entomologist Dean

He and University of Nebraska horticulturist Edward J. Kinbacher suggest use of a pyrethrins drench for estimating adult billbug populations - and the blender extraction method for estimating egg and larval numbers.

Use of these methods, they say, can justify situations when treatment may be justified and restrict excessive pesticide applications that might contribute to environmental pollution.

Pyrethrins drench

The pyrethrins drench stimulates emergence of the adult bluegrass billbugs above the thatch, so they can be collected and counted.

The Lincoln, Neb., researchers first clipped the bluegrass back to about one-half inch height in sampling areas. They prepared the drench by mixing a 1.2 percent pyrethrins and 9.6 percent piperonyl butoxide solution (0.075 ounce) with four quarts of water. Each 0.12 square yard plot received four quarts of the solution. Emerging adult billbugs were collected for 20 minutes after treatment.

87 percent

The technique recovered 87 percent of the adult bluegrass billbugs from one site and 82 percent from another, Kindler says. Recovery efficiency was calculated after treated sod removed from the plots was checked in the laboratory for adult billbugs that did not emerge.

A careful visual search of comparable plots detected averages of 1.0 and 1.9 adult billbugs from the two sites, in contrast with 5.5 and 7.3 recovered by the pyrethrins drench, the researcher of the department's Science and Education Administration-Agricultural Research says.

Blender faster

Kindler and Kinbacher found that two laboratory methods were about equally efficient for estimating numbers of bluegrass billbug eggs and larvae near the peak of the egg-laying and hatching season. But blender extraction required only about one-sixth as much time as shoot dissection. For both methods, grass plants brought from the field were trimmed back, leaving only the bottom one and one-half inches of the lower shoots.

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the Lawn institute, president of the Bluegrass Association and the Inter-Mountain Bluegrass Association. He is on the advisory board of Washington State University, a director of the Spokane and Dishman Kiwanis Clubs and a lay leader in the Spokane Valley Episcopal Church.

Jacklin was instrumental in bringing about in 1972 the merger of the Vaughan Company with his Company to form the Vaughan -Jacklin Corporation, world's largest supplier of horticultural supplies. The Company currently markets products in many foreign

Jacklin stepped aside as general manager of the Jacklin Division and now devotes more time in research and product development, one of his first loves. Arden Jacklin currently has his office in Company's recently-built

facilities on the Spokane River in Post Falls, Idaho.

At the present time, the Jacklin Division is the world's largest producer of Kentucky bluegrass and farms more than 5,000 acres in Washington and Idaho and combines with more than 12,000 grower acres in Washington, Idaho and Montana.

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Jacklin's three sons are active in the business with Duane as general manager, Doyle as marketing manager, and Don as production manager.

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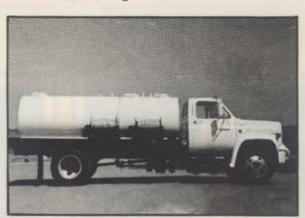
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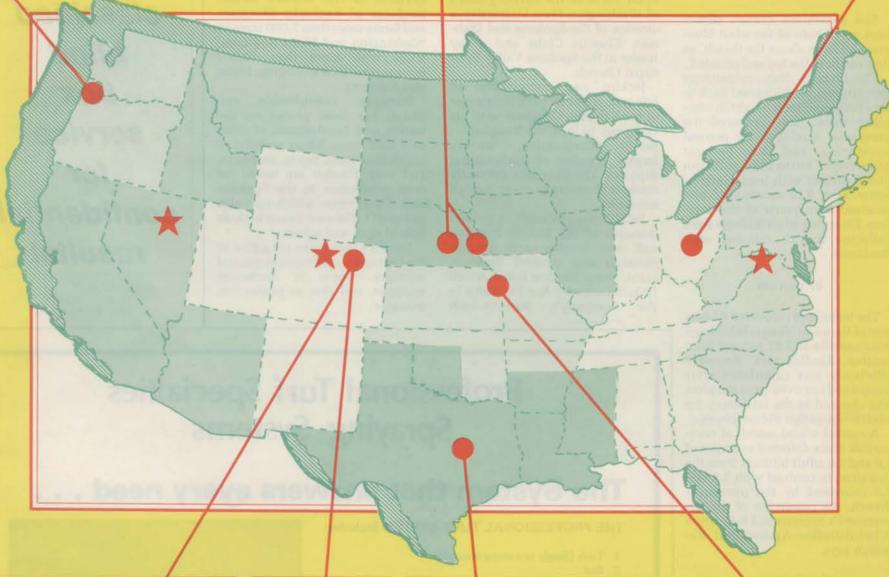
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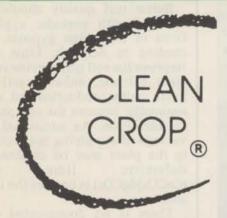
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Gypsum Additives: The Plain Truth

A lot has been said about the advantages of using gypsum to improve turf growth these days. In fact, according to R. E. Schmidt, associate professor of agronomy at Virginia Tech, it has been said that Benjamin Franklin wrote about the remarkable increase in the growth of turf after landplaster (gypsum) had been applied.

The one-time popular use of

gypsum was discontinued when consumption of coal in industry increased and the widespread use of superphosphates in agriculture reduced the effectiveness of gypsum applications.

Recently, some advocated the reintroduction of gypsum since most phosphate fertilizers do not use sulfur in their manufacture as they once did. Gypsum (CaSO₄) of course can supply the necessary amounts of sulfur as well as calicum to meet the needs of crops grown on sulfur and calcuium deficient soils.

However, says Schmidt, adequate sulfur may also be supplied with nitrogen or potassium sulfate fertilizers. Limestone (CaCO₃) will supply calicium.

The truth of the matter, according to Schmidt, is that we seldom obtain benefits from sulfur application in the eastern United States. Evidently, the atmosphere in the east contains sufficient sulfur from industrial pollution to supply adequate sulfur to plants via rainfall. There is some evidence that applications of sulfur benefit turf in the Pacific Northwest where the atmosphere is not so contaminated.

Northeast problem

Soil acidity is more of a problem in the northeast than calicum or sulfur deficiency. Because of the relatively high rainfall in the eastern United States, most soils are well leached and tend to become acid. At low pH, soil aluminum and manganese become toxic to plants. Also, according to Schmidt, at low pH, phosphorus becomes insoluble and is not available to plants. In addition, the availability of other plant nutrients are limited when soils are acid.

Liming material

To correct soil acidity, agricultural ground limestone (CaCO₃) is generally applied. The carbonate ion (CO₃) is the constituent that causes the pH to rise. Since gypsum (CaSO₄) does not produce a basic ion (OH4) in its soil reaction, it does not raise soil pH. Gypsum, a neutral salt, is, therefore, not considered to be a liming material.



R.E. Schmidt

There also are claims that gypsum will improve the physical conditions of soils, particularly those containing clays with shrink-swell properties. These claims probably stem from the fact that gypsum is often used to reclaim high pH, sodium saturated (alkali) soils that occur in arid regions of the country.

Actually, says Schmidt, gypsum as well as limestone, calcium chloride (CaCl), a sulfuric acid (H₂SO₄), and sulfur (S), are often used to help improve the soil physical conditions of sodium saturated soils. Gypsum is usually preferred since it is more soluble than limestone, less expensive than calicum chloride and will not lower the pH drastically as sulfuric acid or sulfur.

It is unlikely that gypsum will significantly contribute to the improvement of soil structure, as the primary causes of poor soil structure are inert clays, low organic matter content and human endeavors. The application of limestone will raise soil pH leading to enhanced plant growth and consequently increased soil organic matter content. With the increased organic matter production, improvement in soil structure can be realized.

It does appear reasonable that gypsum applications can be responsible for improved soil physical conditions. If such effects have occured, they would have been of short duration. Once gypsum has diffused into the soil, it will diffuse out again with the leaching water, which is considerable with the average rainfall received.

Better turf quality should be realized with periodic applications of lime than gypsum, according to Schmidt. Lime will improve the soil pH, provide sufficient calcium, enhance soil organic matter production and, subsequently, inprove the soil physical condition. An additional advantage of supplying magnesium to the plant may be obtained if dolomitic lime (CaCO₃MgCO₃) is used as the lime source.

There is no documented evidence that gypsun will benefit turf grown on acid soils better than lime, says Schmidt.

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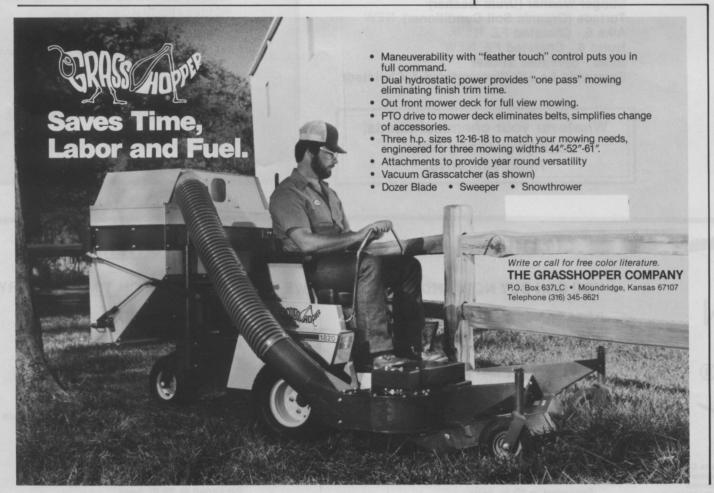
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Government Maintenance

million in maintenance contracts to the private sector an opportunity that may open up in other states as well. Herewith is Quimby's report:

The law passed in 1976 establishing the Office of Advocacy really had two primary goals: The first was to ease the burden of federal government actions placed upon small businesses and to maximize the ability of small firms to benefit from federal programs in other words, a kind of om-budsman's liaison of small business to the Congress.

The Office of Management and Budget has established that federal employees perform 11,000 commercial and industrial activities, many of which could have been performed by responsible and industrious small business firms. The cost of these activities was approximately \$19 billion. The Advocacy task force on government competition has very conservatively estimated that a potential savings to tax payers would be very close to three billion dollars.

The industry, as a matter of policy, should maintain lobbying efforts in Washington to have the federal government and all of its agencies contract out landscape maintenance services.

The Advocacy task force encourages small businessmen to become their own lobbyists through their own organizations. The office then can work with each association and will aid and encourage small business conferences in each state.

In California we have a law known as equal access to justice. We have another law which closely regulates the state agencies, in which the agency must prove that their regulations are not going to harm small business. A late payment bill is pending in this state which demands that the federal government pay private

contractors on time.

This is a subject about which the Office of Advocacy hears about constantly. Not only federal, but state and local governments are delinquent with their bills, and are operating on a float of small business money. In California, we hope to get a law passed that will penalize the agency for late payment. They will have to start paying interest under the terms of their contract.

This is the kind of thing the small businessman can do for himself in the field of legislation. In the history of this country, the small businessman is the one who has been independent-minded. but underorganized.

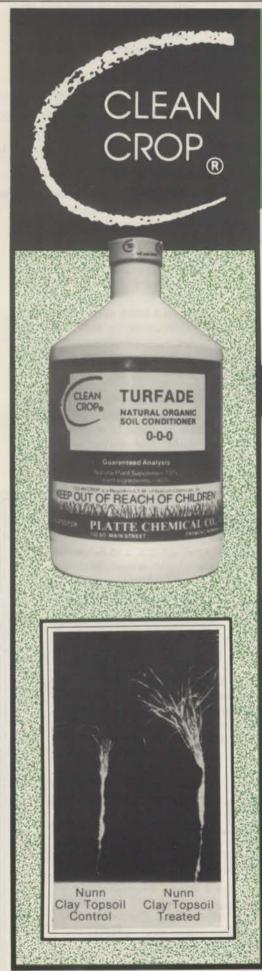
The White House Conference on Small Business produced two pieces of legislation of prime interest to all small businessmen. The first was the Regulatory Flexibility Act, and the other, the Equal Access to Government Act. The Flexibility Act provides for protection for the small businessman from untoward legislation: Any time an agency promulgates a rule or regulation affecting small business, it must be justified in a public

All federal agencies will have ten years to correct legislation that hinders small business and to prepare feasibility reports justifying why certain legislation will not be economically harmful to small businesses.

All small businessmen have a



The presentation of the royalty check from the Seed Production & Introduction Corp. to Penn State University for the Dr. Henry Fortmann scholarship fund. Pictured left to right: Russ Billings, Stanford Seeds, Willard Hovde, Agway, Inc., Harry Kinder, Northrup King Co., Dr. Robert Hutton, Penn State, Bill Mohn, Agway, Inc. and Dr. Joseph Duich, Penn State.



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Wiping Out Localized Dry Spots

Everyone has them — you know, those yellow or dried out areas in irregular shapes. Those areas where you can water like mad and watch the water run off leaving half the area dry as a bone while the other half is saturated.

They appear at irregular times on young lawns or old lawns with no real pattern; and they come back again and again, year after year. You generally refer to them as "localized dry spots" and, although they are a frustrating and

unsightly problem, you take some consolation in the fact that you're not the only one who has to deal with them.

What are these localized dry spots? Why do they appear? And what's a lawn care businessman to do about then?

To begin with, it is true that localized dry spots are a very prevalent problem. In fact, according to several recent surveys, localized dry spots are the most common general turf problem in the country. The reasons are twofold:

High visible problem

First, there are several causes of localized dry spots which increase the overall occurrence of them. Second, very few turf managers of any sort know what to do about localized dry spots on either a curative or preventive basis, so they remain a highly visible problen.

Unless your job is dedicated to the total care of an individual property, you certainly do not have the estimated 2.58 hours per day it takes to hand water localized dry spots. Even if your job is so limited you probably do not have the time.

Sandly soils

Taking a closer look at the why and wherefores of localized dry spots will give you a better understanding of then and some practical ways to combat then.

For starters, consider that while localized dry spots appear most often in sandy soils, they also develop throughout the world on different types of soil, on young and/or old turf areas, on flat areas as well as slopes, and in different climates.

It stands to reason that there are several causes of localized dry spots. Dr. Paul E. Rieke of Michigan State University, in his work on this problem, has listed various causes:

- ☐ Poor surface distribution of water,
- ☐ Run off on slopes,
- □ Compaction,
- ☐ Soil variation or poor soil mixing,
- ☐ Thatch accumulation and/or,
- ☐ Development of hydrophobic soils.

Dr. Everett O. Burt from Florida

sonable applications rates, water often runs off slopes, over-wetting the low areas and leaving localized dry spots on the upper sloped areas.

Here again it seens that all you as a lawn care operator can do is instruct your customers to apply water at slower or shorter intervals — not an easy task, and not desirable for good root development.

Then there is compaction. If there is slow infiltration and percolation of water accompanied by traffic, a soil can quite quickly become compacted. Once the compacted soil dries, it can be very difficult to re-wet, causing moisture stress and another form of localized dryness.

Where thatch is a problem, reducing fertilizer and pesticide use can help keep the situation from becoming worse, but it doesn't lessen the problem immediately.

mentions another situation that would add a seventh to the list, namely, the channeling of water through sandy soils. Each of these different situations causes different problems that are all manifested by localized dry spots.

You as a lawn care operator can do little more in this case than further educate your customers to the very real need for uniform and complete surface application of water

The second cause listed for localized dry spots was runoff on slopes. If water is applied too fast to soils, the water will runoff rather than penetrate, thus leaving dry areas. However, even at rea-

Your traditional options at this point are to rebuild, which is generally out of the question, aerify, which is a significant but costly operation, or again educate your customer to irrigate slowly and keep traffic to a minimum. In many hone lawn situations this is difficult at best.

Soil variation or poor soil mixing is the fourth cause of localized dry spots on Dr. Reike's list. What you have is different soil/water relations in different areas, and/or the poor movenent of water across different soil interfaces.

The result is the same, some areas wet and some areas dry. Rebuilding is really the only way to significantly change the soil aspect of this situation and, again, generally out of the question.

The other traditional option is to average your maintenance practices on the different soil types and hope for the best — a not very encouraging proposition.

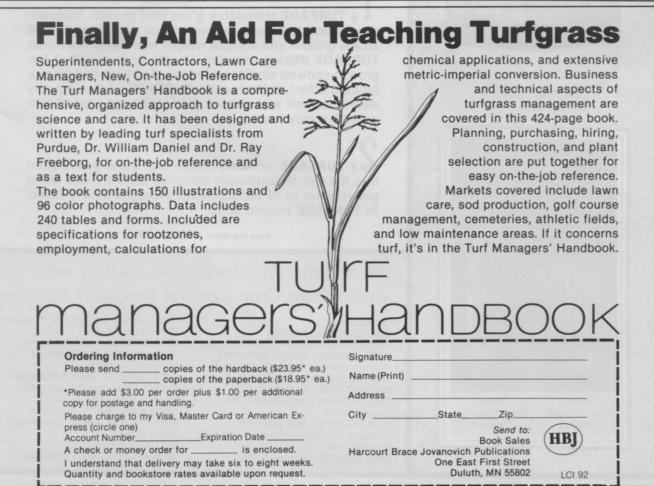
Thatch accumulation

Fifth, is the common problem of thatch accumulation. In the January issue of Lawn Care Industry, there is a thorough discussion of thatch and its problens to the lawn care industry by Dr. Hall of Virginia Tech. In this article, Dr. Hall discusses the hydrophobic nature of the organic thatch layer which prevents adequate water infiltration, causing reduced root growth and increased potential for wilt damage.

Where thatch is the problem, reducing fertilizer and pesticide use can help keep the situation from becoming worse, but it doesn't inmediately lessen the existing problem. Again, the traditional solutions are often less than practical.

Dethatching is very hard on





stressed turf and is an extreme measure that should only be used in very severe situations.

Aerification is more practical but still not a viable alternative to all lawn care operators. Besides these approaches to the problen, the lawn care businessman is again left to encourage the customer to water "intelligently," which is a shaky solution to a problem that so visibly affects your customer's opinion of your lawn care program.

Hydrophobic coating

Dr. Rieke's last cause for localized dry spots is the hydrophobic coating that develops, especially in sandy soils. Research done by Drs. Beard and Rieke, Dr. Bond, Dr. Madison and Dr. Wilkinson has contributed to further understanding of organic coating that forms on these soils and becomes very hydrophobic.

The coating is a mycelial growth of a nonpathogenic fungi in the soil. The result of the growth of this hydrophobic mycelius is irregular and severe localized dry spots. The turf manager with this situation is constrained to overwater certain areas simply to try to hold others. When faced with this hydrophobic condition the lawn care operator can try to remedy the soil by aerification, which has been discussed previously, but which is only partially effective, or rebuild.

Channeling

Finally, the channeling that Dr. Burt mentions. In this situation the water does infiltrate and appear to wet the soil. However, upon examination of the soil profile, it is evident that most of the water passes through vertical channels leaving much of the soil dry. This phenomenon occurs mostly in sandy loam soils and very sandy soil, but is also evident in clay soils that crack and fissure.

To change the soil requires the addition of other amendments which, in turn, requires much disruption of the turf area. Otherwise there is little to do to change the channeling tendency of the sand.

Water-related

So what are you as a lawn care operator to do about this most common water related problem? The options thus far have been inpractical or out of your control. Is that where it stands? Must localized dry spots remain a fact of life? The answer is NO, and the key to the solution is the fact that localized dry spots are a "water related" problen.

All of the above cause for localized dry spots, excepting the first, have one thing in common — water. Although they are different soil situations, they all involve the same water situation — poor, slow or nonuniform movement of water throughout the soil profile.

If you could change the way the

water moved in and through the soil, regardless of the soil situation, there night be a solution after all.

This can be done through the regular use of an effective soil wetting agent which lowers the surface and interfacial tensions of the soil/water relationship. Consider that the soil modification techniques previously mentioned are impractical. Consider also that trying to change the way your customer waters is a partial remedy at best. Then consider the use of an effective soil wetting agent that lowers tensions in water, irrespective of the soil or thatch, and allows the water to penetrate and spread out in any environment.

Quimby from page 33

right to defend themselves against incriminating legislation. Federal and state agencies will now have to think about promulgating rules and regulations that are going to affect small business, especially when they will have to pay out of their individual budgets for lawyers when they don't win their cases.

In addition to aiding small businesses through the networks of regulatory information, the Small Business Administration has a number of programs especially suited to enhancing financial opportunities for small businessmen.

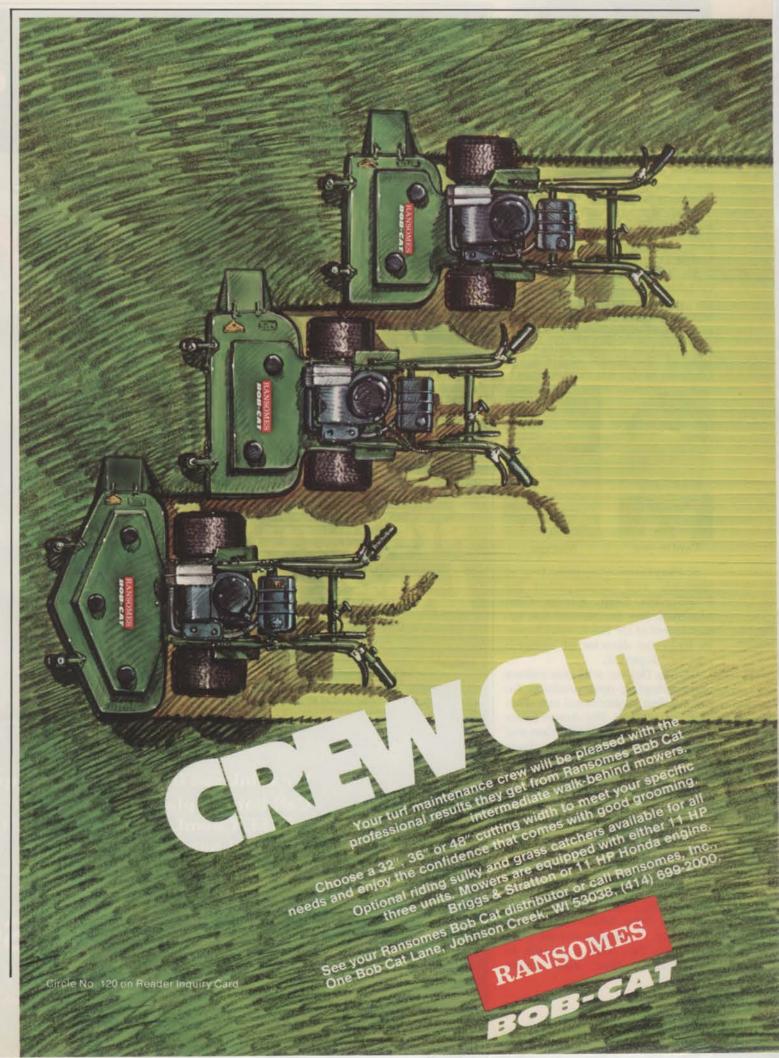
Our financial aid program

guarantees loans with banks up to 70 and 90 percent of the loan value. There are numerous landscape contractors and lawn care businessmen on this financial program.

Our Management Assistance program gives you ample opportunity to prepare yourself: A prebusiness workshop which points out all the pitfalls which exist in going into business. If you don't know to evaluate site location, your market, or organizational structure, this workshop will come in handy.

A valuable asset of the Small Business Administration that should not go overlooked is our Service Corps of Retired Executives, men and women who have

nave a page 42



NEWSMAKERS



Nocera

Vincent Nocera is president and chief executive officer of Leisure Landscaping, Boca Raton, Fla. Nocera founded the multi-million dollar landscape and maintenace company in 1956.

Gary A. Marcus has joined **Encap Products Company** as general manager of the new Green Garde Trigger Sprayer division.

Mr. Marcus will direct the new division, which will market trigger sprayers, spray bottles, and watering cans, both domestically and internationally. Mr. Marcus was formerly national sales manager of the Home and Garden Division of the Afa Corporation.



VanDiepen



Marcus

S. Skaptason, vice president of research and development for **PBI/Gordon Corp.** Kansas City, Missouri, has announced the appointment of Dr. Jan R. van Diepen as technical director of research and development.

Dr. van Deipen will concentrate on developing new products for the Gordon Professional turf division, as well as the Acme Lawn and Garden Products Division and the Acme Agricultural Products Division of PBI/Gordon Corporation.

Krigger & Company, distributor of turf and grounds care equipment manufactured by Jacobsen Division of Textron, Inc., has expanded its sales territory into central Ohio, including the Columbus marketing area.

The new branch, located at 852 Marion Rd., Columbus, is managed by Peter Miller. Krigger & Company, headquartered in Pittsburg, Pa., with a branch in Macedonia, Ohio, also serves

western Pennsylvania, northeastern Ohio and northern West Virginia.

Kenneth E. Wheeler, Jr. has joined **BFC Chemicals**, **Inc.** as a sales representative working out of the Atlanta regional office.

Prior to joining BFC Chemicals, Inc., Mr. Wheeler was a farm manager with R. Allen Sherrod Farms in Coolidge, Georgia.

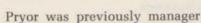
Bill Schroeder is manager of **DeHaven Gran U Lawn**, Lima, Oh. Bob Foley is assistant manager and Mark Ruhe and Bill Sontag are applicators. The company offers both liquid and granular chemical

lawn care services.

Jeffrey Miedema and Ted. W. Bill Pryor have joined Gandy Company as district sales manager. Miedema will represent the company in the northwestern states and Alberta and Saskatchewan.



Miedema



of dealer development for Eaton Corporation and was for 19 years a division marketing manager for North American Manufacturing Company, Sioux City, Iowa.

Peter L. Berghuis has been selected to appear in the 13th edition of Who's Who in California. Peter Berghuis of Berghuis Landscape, Inc. of Sun Valley, California, is among approximately 5,000 Californians listed in the volume.

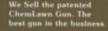
Donald DiBartolomeo is vice president of Family Lawn Service, Mentor, Oh. The company offers both liquid and granular chemical lawn care and mowing/maintenance services.

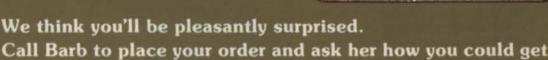
John L. Papp is owner of Lawn-Spray Co., Califon, N.J. The company offers both liquid and

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Division of Lakeshore Equipment & Supply Co. 300 South Abbe Road, Elyria, Ohio 44036 (216) 323-7544 granular chemical lawn care ser-

Arthur L. Hatcock is president of Metroscape, Inc., College Park, Md. Dr. Fred Grau is vice president and Charles Rogers is general manager. The company offers dethatching and renovation services.

Rick Knipper is owner/operator of Spring-Green Lawn Care, Iowa City, Iowa. The company offers chemical lawn care, and is part of a franchise lawn care company based in Naperville, Ill.

Nancy Jefferys has been named sales representative of Stay-Green, Inc., of North Hollywood, announced president Richard Angelo. Jefferys comes to Stay-Green, Inc. after several years specializing in sales, landscape

installation, estimating and supervision for commercial, industrial and residential properties.

Stay-Green, Inc. is a landscape maintenance company that provides complete professional services for private homes, apartment complexes, condominiums, commercial and industrial establishments, private or public institutions and building developments of all types.

Kohler Co. announced the election of James M. Roennitz to the position of vice president-generators, and George R. Tiedens to the position of vice president—engine and advanced technology group. The action followed the announcement by Arthur G. Kroos, Jr., general manager of the

company's engine division, that he plans to retire this year.







Tiedens

Russell H. Tiller has been honored by **The UpJohn Company** for outstanding achievement in sales. He is one of 15 individuals recently named to the company's agricultural division sales academy.

Tiller is an agricultural chemicals sales representative for TUCO sales representative fot TUCO, division of **The UpJohn Company**. He joined TUCO in 1969, and his sales territory encompasses the state of Indiana and the lower peninsula of Michigan. A native of Plainwell, Mich., Tiller holds a B.S. degree in Agribusiness from Western Michigan University.

His new duties include all sales, marketing and advertising programming, overseeing of sales efforts of the Yard-Man organization and direct liaison with Yard-Man distributors.

MTD Products, Inc., parent company of The Yard-Man Company, Cleveland, Oh., announced today the promotion of Paul T. Schmit to Director of Marketing, Yard-Man.

Schmit, Yard-Man's national sales manager since 1976, is well-known in the outdoor power equipment industry, having served for over twenty-five years in the capacities of advertising manager, general sales manager, and distributor/dealer liaison for several of the industry's leading manufacturers.

Bowden Hepler has recently been named to the staff of the Super Green Lawn Care Division of Senske Weed and Pest Control. Hepler brings with him many years experience with turf on golf courses and is a graduate of Washington State University in agronomy turf sciences.



Hepler



Flecker

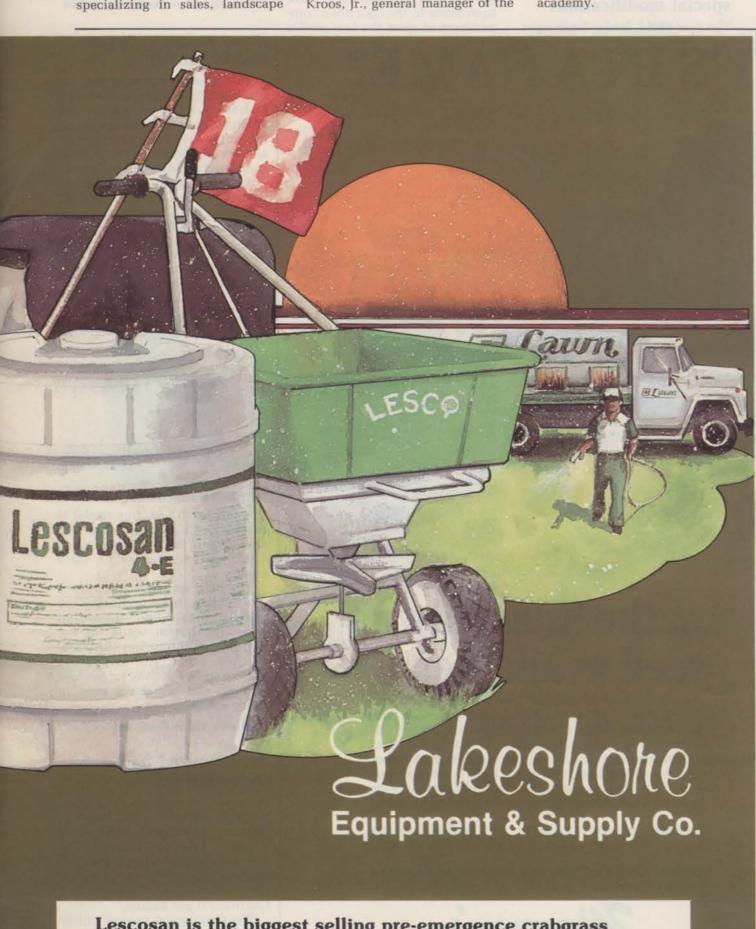
Vince Flecker is president and Tom Flecker is vice president of Shur Spray Lawn Care, Indianapolis, Inc. The company offers liquid chemical lawn care and tree spraying services.

The Agricultural Chemicals business of Diamond Shamrock Corporation has announced a series of marketing and personnel changes.

J. Neal Butler has been promoted to the position of northeast regional sales manager. Diamond Shamrock's northeastern region includes the states of: Connecticut Delaware, Kentucky, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Virginia, Washington, D.C., and West Virginia.

Anderson Rackley has now assumed the responsibility for managing Diamond Shamrock's fungicide business. This is in addition to his responsibilities as business manager of phenoxies.

Kurt Schwartau will serve as business manager for Dalapon along with his present duties as product manager for the Agricultural chemicals business.



Lescosan is the biggest selling pre-emergence crabgrass control on the market. Major universities rate it as the most effective crabgrass control available today. Dollar for dollar it can't be beat. Lescosan is available the way you need it:

Lescosan 12.5G, Lescosan 7G, Lescosan 3.6G with Fertilizer and Lescosan 4E.

Circle No. 114 on Reader Inquiry Card

PRODUCTS

New sprayer runs dry indefinitely

Master Sprayers, Ontario, Ca., has introduced a new Model HC/DP sprayer with a high capacity, high pressure diaphragm pump, for use in the lawn care industry.

A key feature of the new pump is its ability to run dry indefinitely without pump damage. In addition, the new diaphragm pump easily handles normal corrosive or abrasive materials, for uninterrupted service and longer pump

The Master Sprayer Model

HC/DP also features a 16 horsepower electric start engine; stainless steel mechanical agitator; one piece fiberglass tank; positive drain and large capacity noncorrosive line strainer.

The new Master Sprayer is recommended for use on weeds, trees, and turf and easily sprays tall trees and small weeds.

Circle No. 130 on Reader Inquiry Card

Loader-landscaper has special modifications

The new 480LL loader-landscaper

fron J I Case Company has special designs for use in the lawn care industry.

The 480LL offers the identical



heavy duty, high performance features of the tractor and loader used for the 480D loader-backhoe, but special modifications have been made to the operator's compartment to meet the low profile and high visibility needs of production loading and landscaping

applications.

Overall height to the top of the ROPS canopy is only eight feet for the 480LL, for excellent clearance of low overhead obstacles when landscaping. The canopy has also been restyled for improved loader visibility at full lift and dump

A new single-lever loader control is standard equipment. It featurs a "fast cycle" switch located on the lever that permits the operator to direct engine horsepower from the power train to the loader hydraulics for faster cycl-

Circle No. 131 on Reader Inquiry Card

Short range mini-paw resists run-off

A new short range rotor pop-up from the Turf Division of Rain Bird features a 7/64 inch orifice and efficient low gallonage operation, low angle and short radius stream and low application rates to resist runoff and puddling on turf areas.

A one-half inch side as well as bottom inlets allow labor savings because of shallower trench depth requirement. With a throw range



from 14 to 23 feet, this model is ideal for odd sized turf areas that are too wide for two rows of spray heads and too narrow for three rows.

The new sprinkler has a three inch pop-up height, clearing the turf for unobstructed throw and good distribution while the comolded, multi-function wiper seal flushes, seals, and wipes the pop-up stem, allowing for positive pop up and pop-down even in sandy soils.

Circle No. 132 on Reader Inquiry Card

Tractor used for industrial jobs

A new grounds maintenance machine, the Hustler 295, has been introduced by Excel Industries, for use in the lawn care industry. The new heavy-duty tractor has a high torque-to-horsepower ratio with a 25 horsepower liquid-cooled Continental gas engine.

The Continental engine, unlike the typical automotive-type mower engine, was specifically built for industrial application, longer engine life and lower maintenance.

The Hustler 295's dual-





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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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Corporate Offices: Warren's Turf Nursery, Inc. ● 7502 South Main Street ● Crystal Lake, Illinois 60014 ● (815) 455-5100

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hydrostatic drive system and twin-lever steering provide the operator with independent control of each drive wheel. The drive system allows one-hand control of



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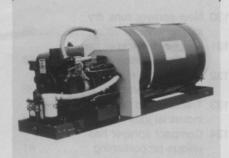
The capability of counterrotating the drive wheels permits the machine to perform zero radius turns and this feature, plus onehand steering control, cuts mowing time around obstacles or contours while reducing operator fatigue.

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Portable high-pressure sprayer eliminates pre-mixing and disposal problems by injecting precise amounts of pesticide or any free-flowing concentrate directly into the water flow.

The Silver Skunk from Power Spray Technology, Inc., has a wide



range of applications for the lawn care industry. The fully equipped unit operates on cold water supplied by an ordinary garden hose hookup or from a tank, and measures spray output in gallons. Because concentrates never touch the piston pump, this unit easily switches over from one concentrate to another with simple calibration.

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Unique floating hitch doubles cutting swath

Tow 'N Mow from Native Craftsman cuts mowing time in half by doubling the cutting swath



of your riding mower. The proven technical design provides perfect tracking, no scalping and smooth, controllable steering.

Made of galvanized steel and quality hardware with reinforced stress points and smooth edges. Single or double attachments available.

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Utility power vehicle for lawn care industry

This new utility power vehicle fron WU's Agricultural Machinery is built for rugged materials handling jobs. Simple design with low maintenance and powered by a seven horsepower Honda engine, carries 2,000 lbs. all day on two



gallons of gas (LP and diesel available).

Hydraulic dump-flatbed; fourwheel drive; 360 degree rotating steering column and multiple accessories are available.

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New chaps designed for lawn industry

New waterproof Filson chaps, designed for landscape and grounds maintenance personnel, feature urethane coated nylon pack cloth for tough, long-lasting protection.

The lightweight leggins offer quick on/off convenience for changeable weather conditions and handy pocket storage. Each chap has two reinforced, adjustable length side straps that loop around the belt to assure a no-twist snug fit.

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Drug & Cosmetic Industry	9,929	Professional Remodeling	36,627
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MEMOS



Support Local Coalitions

Many state organizations have now formed to uphold the use of what will hopefully become a less controversial material — 2,4-D. The National Coalition for a Reasonable 2,4-D Policy has been instrumental in promoting a network of local coalitions to defend the vital herbicide from unreasonable regulatory and legislative action.

These centers are important because they focus the work of the national policy makers in local dialogues where the issue will ultimately be settled. To date the following state coalitions are members of the National 2,4-D Coalition and recognized as the focal point for actions in the designated state:

Alliance for Food & Fiber, (California), Pamela Jones, 3330 La Selva Drive, Suite 207, San Mateo, Ca., 94403, (415) 574-4741.

Western Environmental Trade Association, (Montana), Peter V. Jackson, 2301 Colonial Drive, Helena, Mt., 59601, (406) 443-5541.

Oregonians for Food & Shelter, David H. Dietz, 253 13th Street, N.E., Salem, Or., 97301, (503) 370-8092.

Rational Approach to Pesticides, (Massachusetts), Kevin P. Moran, 91 Mount Vickery Road, Southborough, Ma., 01772, (617) 485-9340.

Washington State Pest Management Alliance, James R. Ely, P.O. Box 98929, Tacoma, Wa., 98499, (206) 584-7395.

Wisconsin Agri-Business Council, Russell R.

Wiesensel, 2117 Sherman Avenue, Madison, Wi., 53704, (608) 241-2197.

In addition to the above alliances which currently comprise the coalition network, other groups have been identified in New Jersey and Connecticut.

It is important to become involved in these organizations if you are a lawn care businessman and wish to protect your lively-hood. Because pesticide restrictions are fought at the local level day in and day out, these organizations can keep you up-to-date on the status of regulation in your area. An informed show of force at a local hearing is often the best defense against unreasonable usurpation of your right to use this protect.

And if there's not a group in your area — start

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1981 Used Spray Units For Sale — 1250 gallon tanks. John Bean F.M.C. 20-20 pumps. Steel beds. 16 HP Kohler engine. Ford F600's. Call 502-241-7341.

For Sale — Finn Hydroseeder — 800 Gallon, 200 feet, 1½ "hose — Like New. Electric reel — Platform for top discharge — Mounted on Finn Trailer. Contact: Garry Struyk, 402-592-2233 or 712-328-3909.

1979 800 gal. Finn Feeder on 1972 International Loadstar 1600. Tank can spray water in soluable granular material. Picture on request. Can deliver. 50 gal. of Betasan. More information? Call 701-280-0818 after 6:00 p.m.

For sale — Lawn and tree service in central N.Y. state. \$250,000 yearly gross. Established residential and commercial accounts. Stable market. Good equipment. Asking \$175,000, terms. Call 315-492-3217 evenings or Sundays.

For sale: Jacobsen F133, 11 ft. or 7 ft. cutting widths, reels sharpened. Haulette 10½ ft. tandem axel trailer used 2 seasons. These two make a good pair but will sell separately. Hahn MC5C self propelled aerator, good condition. Partnership split, must sell. Call 315-926-7796. Can deliver Rochester, Buffalo, Syracuse, N.Y.

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Wanted: Experienced chemical lawn care professional to manage the workings of a small, but growing California business. Duties will include: surveying, spraying, routing, etc. Thorough knowledge of lawns and lawn care required. Send resume and salary history to: Grass Roots, 2609 Cardinal Avenue, Bakersfield, California 93306.

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Midwest lawn spray and maintenance company, including equipment and accounts. Office and warehouse also available. Established business for turnkey operation. Must sell, \$70,000. Write LCI Box 73.

WANTED TO BUY

WANT: CHEMICAL LAWN CARE BUSINESS (MINIMUM 2000 ACCOUNTS) IN COLUMBUS, OHIO, CHICAGO, ATLANTA, FORT WAYNE, DETROIT, LOUISVILLE, LEXINGTON, KY., CONTACT: D.W. BAKER, P.O. BOX 73, WEST CARROLLTON, OHIO 45449 OR CALL: 513-866-2402.

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been in business all their lives and who are dedicated to offering their business expertise and experience to fledging organizations. We also have another group called the Active Corps of Executives who can be called upon to help small businesses. There is no charge for this kind of assistance.

We also hold a number of cosponsored programs with colleges and universities on financial management who counsel small businesses with the help of a college professor and with the SBA staff man who has had practical experience in the field of small business.

Our Procurement Assistance Program is a program that assists small business contractors to locate government contracts and to refer qualified small businesses to federal prime contracts. Procurement representatives are located generally on all military installations, for instance.

Another source of valuable information is the Government Purchase and Sales Directory, which is available in all of our offices. The General Services Administration also do a lot of contracting, and they have an office in ten federal regional offices throughout the nation.



Right to Know Ordinance Passes In Cincinnati

to access to information concerning the substance of chemicals not used at the work place. Additionally, employees have the right to request that the Cincinnati Fire Division inspect the work place periodically to ensure compliance with the city ordinance.

More coming

We anticipate that states and cities throughout the country will continue to consider and pass similar bills requiring the disclosure to enployees of hazardous substances at the work place. Lawn care employers, as part of their existing safety programs, should review with employees proper care and preventive maintenance concerning chemicals, as this disclosure and safety program may protect the lawn care employers from occupational safety and health matters or other litigation concerning safety and chemical hazards at the work place.

The House Labor Committee has approved a bill which has dangerous implications for all employers, but lawn care and small employers in particular.

The Fair Labor Standards Act currently provides that an employer who violates its minimun wage and overtime provisions is liable for two, possibly three years' back pay, plus interest.

If an employer "willfully" violates the act, he then may be responsible for double back pay. Willfullness does not mean intentional; for the purposes of the Fair Labor Standards Act, an employer who is knowledgeable or aware of his Fair Labor Standards Act obligations and violates the act may be deemed to have willfully done so.

Triple damages

The amendments to the Fair Labor Standards Act, contained in H.R. 6103, would impose triple damages on employers, plus interest. Additionally, under the current act employers keep the funds owed to former employees who cannot be reached after thirty days.

The new bill would require that those checks be held for the employee for a period of two years. If the employee could not be reached at the end of two years, the funds would then be placed in the general United States Treasury, instead of being returned to the employer.

The bill would exempt all first time violators of the act from triple damages, and instead require the payment of back wages plus interest. In the initial version of the bill, the exemption from triple damages was far more limited than in the present bill. Thus, any lawn care employer who has violated the Fair Labor Standards Act in the past would be responsible for three times the amount of back pay for future violations.

This bill could have a serious financial impact on all businessmen, but particularly small businessmen, such as lawn care employers. For example, assume that a lawn care employer deducts from an employee's pay check

fifteen minutes in the morning and fifteen minutes in the afternoon as "break time." That is illegal; the employer may not deduct from an employee's check any breaks shorter than twenty minutes.

Overtime compensation

Assume that the lawn care employer has ten employees, and he followed this policy with each employee. Assume that each employee earns \$4.00 per hour. Thus, under the present law, the lawn care employer would owe ten employees two and one-half hours', and perhaps more with overtime, compensation for each week during the past two or three

years, plus interest.

Under the proposed law, had this lawn care employer violated the Fair Labor Standards Act previously, he would owe three times the amount calculated. We estimate that a lawn care employer would be responsible for over \$40,000.00, plus interest, according to the new bill.

The existing law, with its provision for double compensation for willful violations, is sufficiently able to serve as a foundation for handling a recidivist violator. The new bill is punitive, and could seriously impair the financial security of the small employer. Lawn care employers should be sure they are compensating employees properly. Do not wait for an investigation by the Labor Department.



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