



WEEDS TREES and TURF

DECEMBER 1972

**1973 SUPPLIERS GUIDE &
EQUIPMENT DIRECTORY**

SCIENCE
ROOM USE ONLY



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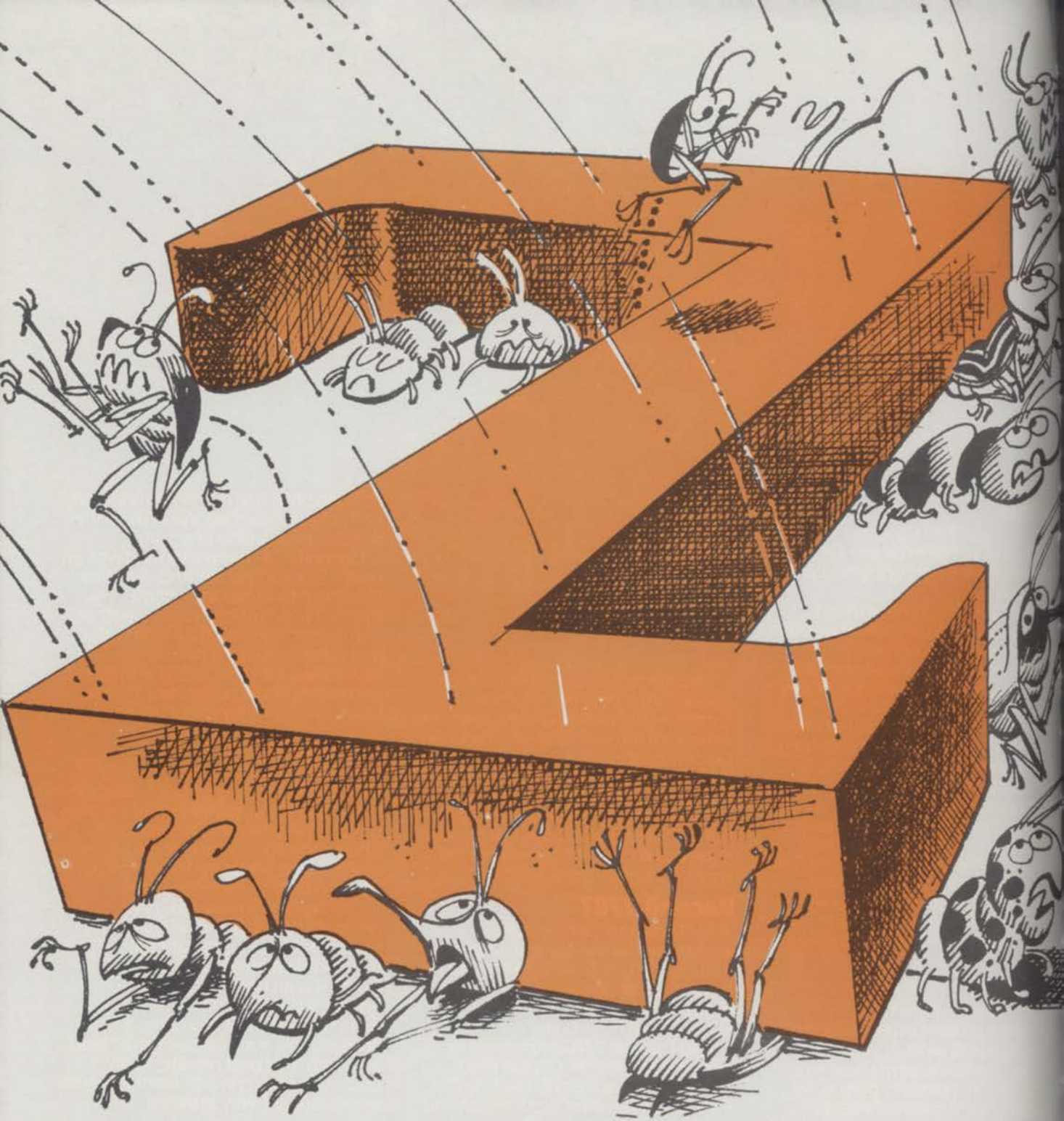
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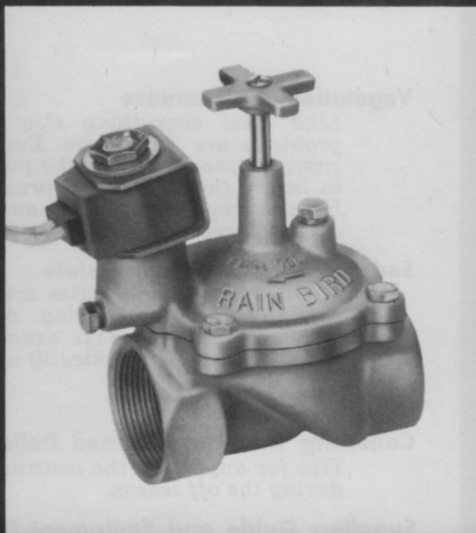


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♦ For More Details on Preceding Page Circle (110) on Reply Card

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WEEDS TREES and TURF®

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Vegetation Maintenance 12

Like most everything else in the Lone Star State, vegetation problems are Texas size. Environmental demands have added increased concern among the public and vegetation maintenance firms to insure that weed and brush control is accomplished effectively. Here's a report on the 7th annual Industrial Weed Control Conference at Texas A&M University.

Sod For A Mobile Home Estate 16

Mobile home communities are gaining in importance in an effort to ease the need for housing. A few permanent buildings, pads and mobile homes can make excellent housing in short order. Add sod and the result is practically an instant "green" community.

They Tip 'em To Test 'em 20

Collecting That Hard Earned Dollar 21

Tips for anyone in the contractual services business on what to do during the off season.

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The Cover

Several hundred "green industry" members were in attendance the day this photo was taken. Most were busy listening to the speaker who was demonstrating equipment. Others were thinking about a delicious fish dinner and an impending shower that had overcast the Florida sky. To those few who have guessed what kind of equipment is shown here, we offer our congratulations. It's the boom of the Directa-Spray nozzle suspended from an air boat. The photo was taken at the USDA Experiment Station at Fort Lauderdale, Fla. We believe it depicts a segment of the "green industry" and is appropriate for the cover of the Suppliers Guide and Equipment Directory which begins on page 23. It is followed by a comprehensive Article Index and Author Index on page 71.

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For More Details on the Following Page Circle (147) on Reply Card

Your third step to healthier turf

3

Fall is the time to take it



If you're following the DuPont TERSAN 1-2-3 Disease Control Program, you've already got spring and summer turf diseases licked.

Now's the time to prevent fall diseases—take your third step to healthier turf, the application of TERSAN SP on tees, fairways and greens.

TERSAN SP gives superior control of Gray Snow Mold and Pythium. These diseases will be the major problem, depending on your area, during the fall and early winter months.

TERSAN SP, like the other DuPont TERSAN fungicides, is non-mercurial, low in human toxicity and has a large safety factor on turf.

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NOTE: Applications of DuPont TERSAN 1991 turf fungicide should be used in the late fall and early spring in areas where Fusarium Patch (Pink Snow Mold) is a problem.

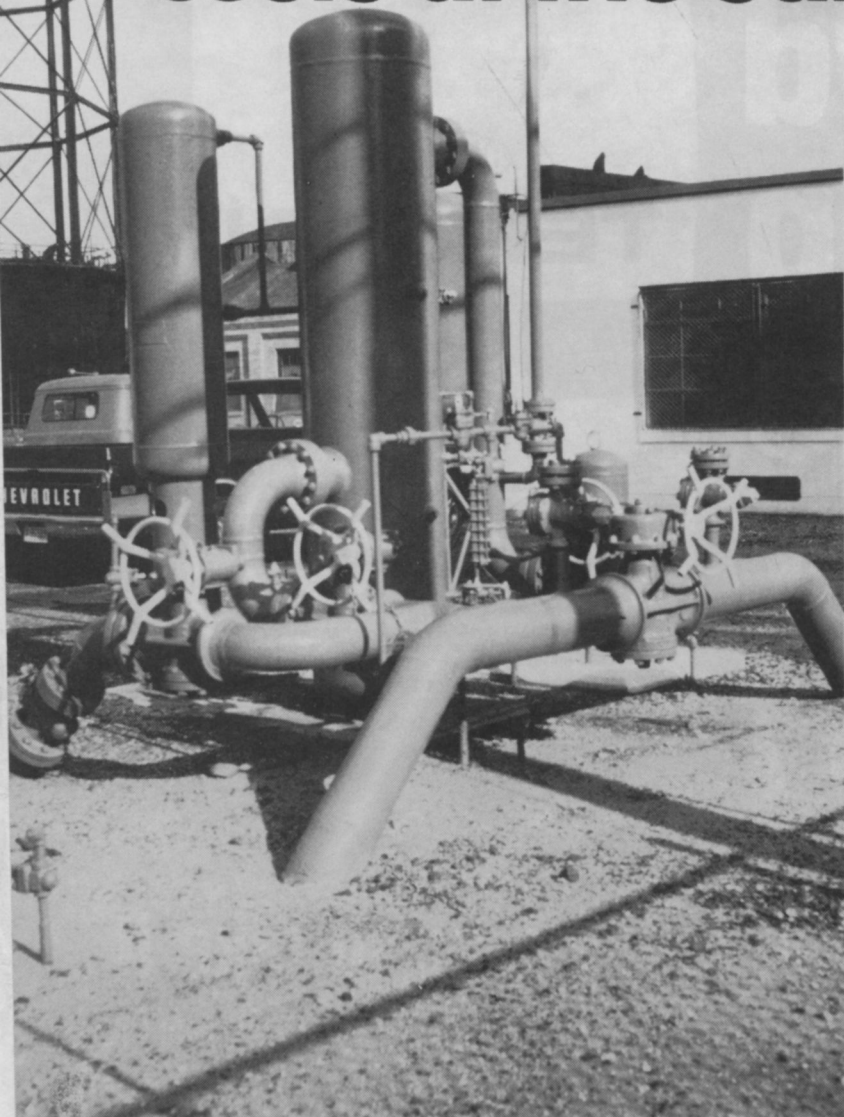
Your golf course supplier has complete details on the program and a supply of TERSAN fungicides. Give him a call today.

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How to control weeds and costs at the same time.



In industrial applications, as shown here, Tandex controls weeds along fence lines, parking areas, ditches, pipelines, sidings, storage areas, tank farms, and sign posts.



Weeds are expensive.

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Millions of man-hours and thousands of machines are fighting the war against weeds.

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Weeds hit some harder than others

The weed onslaught is particularly damaging to such operations as railroads, utilities, oil fields and highways, as well as general industry.

This message is especially addressed to operations like these—it is a message about Tandex®, the soil sterilant that can drastically cut the cost of weed control programs.

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Tandex is a urea-carbamate compound that's demonstrated exceptional control over weeds, grasses, vines, brush and the hard-to-kill woody species.

Tandex does its weed-killing job by being absorbed through plant roots.

Once applied, Tandex can last a whole season, or longer. Yet it's relatively non-hazardous to man, animals or fish.

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For more information, write to Industrial Chemicals Dept., Niagara Chemical Division, FMC Corporation, Middleport, New York 14105.

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Editorial

Noise, the non-melodious sounds in an action environment, is under something more than a silent attack by the Federal government. Recently released criteria, developed by the Office of Research and Standards Development, National Institute for Occupational Safety and Health, carries strong evidence that workers in the country are being exposed to excessive noise levels. If the criteria and standards are accepted by the Department of Labor, we can expect them to be implemented through the Occupational Safety and Health Act of 1970 (OSHA).

The study was conducted under the auspices of the Secretary of Health, Education and Welfare. Called "Occupational Exposure To Noise," it clearly states that the exposure limits are primarily designed to conserve hearing since this is recognized as the most serious physical problem that noise may cause in humans.

Currently, rules and regulations of OSHA as published in the Federal Register set 90 dBA occupational exposure level for an 8 hour day as the maximum. If the study is accepted and made part of OSHA, an 85 dBA, 8 hour exposure level to all newly designed occupational exposure environments would become effective within 6 months

A Quiet Happy New Year

from date of acceptance. Those occupational exposure environments (industries) currently in operation but for which no data has been collected would have additional time in which to comply. No one currently knows how much.

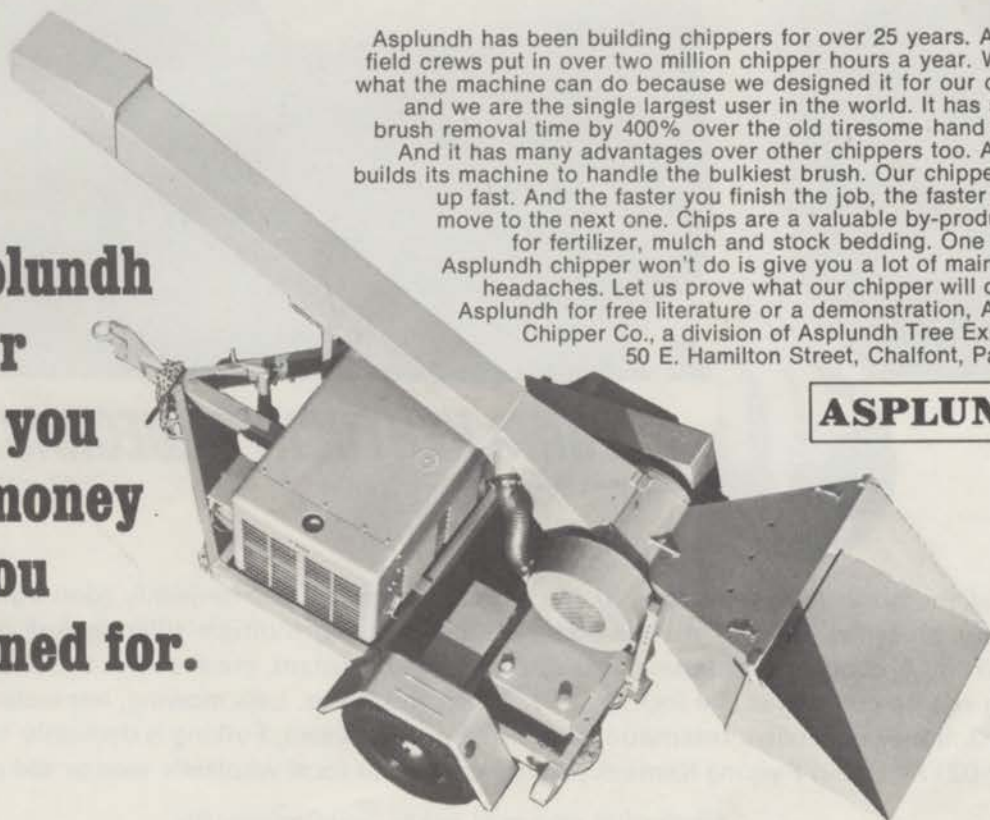
The crux of this report is that many parts of the "Green Industry" are in big trouble. Tractors, mowers, chain saws, chippers — nearly every mechanical piece of equipment — stand a good chance of creating noise levels in excess of the maximum limits. For example, audiograms on 53 tractor drivers of different horsepower tractors showed noise levels ranged from 92 dB to 106 dB, and occasionally as high as 114 dB. While data is not available, contrast this in your mind to a chipper chewing on a three-inch log or a chain saw winding through a seven-inch limb.

But many of these operations are only temporary; that is, lasting only a few minutes at a time. The study takes this into account. At least three different rules have been proposed in order to assess the hazard of exposure to intermittent noise.

What can "Green Industry" personnel do? The study is not without recommendations. It initially advises the consultation of an acoustical engineer

(continued on page 79)

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bargained for.**



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Government News / Business

The Environmental Protection Agency (EPA) granted nearly one billion dollars during fiscal 1972. Most programs covered water, air and solid waste management.

Don't be surprised if an OSHA inspector knocks on your door in 1973. The President's budget has just added \$27.9 million to the \$36.5 million of last year for the agency that operates OSHA. That \$64.4 million, total. This increase will permit the Labor Department to make 110,000 inspections during the next fiscal year, officials say.

Del Kennedy has been named vice president of the newly formed Mauget Tree Injection Process, Inc. His duties will include appointing area distributors and coordinating the training sessions for professional arborists in the approved uses of Mauget Tree Injectors. The announcement was made by Dale Dodds, president and general manager for the California based firm.

Looking for tax credit? The Revenue Act of 1971 allows employers to claim a "Job Development Tax Credit" amount to 20 percent of the cash wages paid an eligible welfare employee during his first 12 months on a company payroll. Eligibility depends on employers hiring workers from the Work Incentive Program, operated through state employment security and welfare agencies. For a brochure and additional information, contact the U.S. Department of Labor.

Members of privately-owned businesses may obtain four reports released by the Manufacturers' Institute on founder/family owned business. Family owned business creates 40 percent of the Gross National Product. The reports describe specific companies as examples of solutions to personal-relationship problems, and show the outcome of these solutions. Observations and comments tie the examples to principles of business management in situations where management of the the family members is a vital ingredient to successful management of the firm. For copies of the reports, write Manufacturers' Institute, Box 228, Oxford, Mich. 48051. •

American Garden Products, Inc. has announced intentions to file, in late December, a Registration Statement for an underwritten public offering of approximately 100,000 shares of Common Stock.

Railroad-highway grade crossings. A hazard at best. Now the Federal Highway Administration is doing something about it. John A. Volpe, Secretary of Transportation, has said that a greater share of Federal funds will be available to State highway departments for financing crossing improvements.

IT'S no secret to managers of weed control services that heightened environmental demands from the public are complicating the job of keeping up with a barrage of new chemicals, equipment and techniques. Weed control services now have to provide effective control programs and at the same time use methods which satisfy the public.

Recently, nearly 125 representatives from the commercial weed control industry sharpened the focus on environmental training and effective vegetation management at Texas A&M University's Seventh Annual Industrial Weed Control Conference.

"The conference was directed toward nonagricultural interests in vegetation management, including the ecological aspects," according to Dr. Wayne McCully, general chairman for the conference. McCully is a professor of grassland management in the Texas A&M Range Science Department.

The conference, held Oct. 16-18, was jointly sponsored by the Texas Agricultural Extension Service and the Texas Transportation Institute as part of the continuing education program of Texas A&M.

"People are becoming afraid and consequently more concerned," said R. L. Robinson, Texas, Electric Service Co. and chairman of the conference steering committee. "These people need to be educated in the ecological aspects involved in industrial weed control."

Robinson added that while ex-

Vegetation Management

It Makes Dollars And Sense In Texas

By **BILL SULLIVAN**
Texas A&M University
College Station, Texas

tension has done an excellent job in orientating some of its programs to needs of industrial weed controllers, more work is needed in this area.

Dr. William Upholt of the Environmental Protection Agency (EPA) boosted the conference's emphasis on ecological impact of weed control by describing the recently passed Federal Environmental Pesticide Control Act of 1972.

He pointed out that one of the biggest advantages of the new law is that it allows regulatory agencies and users of chemicals "to legally talk" about insect and weed control materials. Under previous regulations these materials were called "ecological poisons" and many users, both commercial and private, were confused about when, where and how to apply the chemicals.

The new act requires EPA to classify all pesticides as to use. Up-

holt described this as *the most significant portion of the new act. Certain chemicals will be used for specific purposes, and some materials will be restricted to trained applicators.*

Upholt, senior science advisor to the assistant administrator for EPA's Categorical Programs, listed other main provisions of the act:

—It brings all pesticides under EPA control regardless of whether or not they are an item of interstate commerce.

—It makes use of a pesticide without regard to label instructions a federal offense.

—It makes possible inspections of plants manufacturing pesticides. Data from inspections will remain confidential.

Under the act, states are authorized to train and certify commercial applicators within standards developed by the federal government.

"We aren't intending to handle this certification federally," the EPA official emphasized. "It would be highly unrealistic for us to set uniform standards because problems vary so much from state to state."

All provisions of the act become effective four years after its enactment.

Talk about the environment was only one phase of the conference. The industrial weed controllers heard authorities speak on vegetation management for rights-of-ways, control techniques for roadsides and ditches, and methods of eliminating aquatic vegetation problems.

"A soil sterilant can be the backbone of an industrial weed control program," contended Dr. A. L. Wiese of the Texas Agricultural Experiment Station. He divided bare-ground chemicals into two groups—those with little soil residual and those with long soil residuals.

"The shorter residuals remain persistent from one to three weeks and are toxic to all living matter in-



Caldwell Equipment Co.'s version of a flail mower also catches the attention of industrial weed controllers as it is demonstrated and explained. Note the hydraulically controlled wings which can be lifted independently of each other.

cluding seeds, plants and even insects," he added.

"The longer residual chemicals used for broadleaf control are sometimes subject to leaching up to depths of six feet, but they have to move downward far enough to be absorbed by the plant roots. Examples of these chemicals are 236 TBA, Picloram and Tordon.

"Long residual grass killers such as TCA leach readily and remain persistent for three to six months."

Wiese reviewed research done at Texas A&M in which an application of 200 pounds of TCA per acre along roadsides provided effective control of annuals and Johnsongrass. It also gave excellent control of broadleaf perennials.

Wiese suggested that applicators consider pretreatment with bare-ground chemicals on an area before surfaces such as blacktop are put down.

He reminded applicators that one of the biggest dangers in using soil active herbicides is lack of control and that it is especially easy to get herbicide drift on steep slopes.

"Along fences, roads and around industrial sites combinations of a soil sterilant and a contact herbicide should be considered for quick knockdown or rank growth and residual action to prevent regrowth," suggested Dr. E. F. Eastin of the Soil and Crop Sciences Department at Texas A&M.

He recommended that applicators using non-selective contact herbicides on perennials make their treatments during dormant stages of plant growth.

Eastin pointed out that a new foliar applied, systemic chemical called Roundup (Monsanto) was showing good results in control of rhizome Johnsongrass. However, the chemical is still in developmental stages.

In another part of the conference authorities on aquatic weed control told participants to be sure of the ultimate use of the water before devising a control program.

"There is no one-shot program in aquatic weed control," commented Dr. A. J. Foret of the University of Southwestern Louisiana. "A program has to be thoroughly planned and repeated. The biggest asset in aquatic weed control is our ability to manipulate the level of the water itself."

He mentioned cases in Louisiana where manipulation of water levels aided in control of water lillies, duckweed and even some woody species such as willow.

Foret presented some general cost



Several industry representatives inspect the cutting job done by this Mott flail mower. Complete hydraulic control makes the mower and tractor easy to operate. This unit has a wing on each side and one in the rear.

figures on different methods of aquatic vegetation control. Vegetation control costs with mechanical equipment can run as high as \$300-\$900 per acre. The Army Corps of Engineers has a one man saw-boat that shreds vegetation at a cost of \$20-\$30 per acre. Chemical control costs about \$20 per acre for duckweed and about \$30-\$40 per acre for water hyacinth.

Two of the newer ideas being used

in aquatic weed control are spray application from V-shaped booms that reduce chances of snagging vegetation and application by heavy hoses that drag the bottom.

"Unfortunately we can't control the water level and hope to get rid of algae," said Jim Davis, a Texas extension fisheries specialist.

He also revealed that there has been little success in attempting to
(continued on page 85)

Part of the 125 industrial weed controllers at the conference's field demonstration observe a movable 250 gallon fiberglass spray tank which has its own engine mounted on the frame. Either a fixed nozzle or a hand-held wand can be used with the tank.



Assoc. Landscape Contractor Faults Highway Construction

"Survival in the roadside landscape business has become a real chore. The guidelines under which we operate, in many cases, hinder more than help our survival," said Norman Gay, president of the Associated Landscape Contractors of America, who recently addressed the Ohio Short-Course on Roadside Development in Columbus Ohio.

According to the chief elected officer of the 400 member trade association, a major point of criticism is simply red tape.

"A waiting period of final payments in some places can be one year or longer. Many times this money is the landscape contractor's working capital. Without a friendly banker he can be in trouble and this is on contracts with protective payment and performance bonds," Gray asserted.

"There should be no release on final payments to a general contractor until he has proper payment releases for all material payments and final payments to all concerned."

Gray pointed out that the current conditions in landscape contracting are contributing to the 32% annual attrition rate in the landscape industry, the highest in the construction field.

"On sodding," according to the Mansfield, Massachusetts landscape contractor, "we are told how to do it, when to do it, the kind and quantities of seed and fertilizer to use. Many times we are directed to seed inert material without organic content. In many contracts, instructions on seedling are written without the benefit of a soil test." After such imposed restrictions, the landscape contractor is told he must guarantee grass growth.

Gray endorsed the American Sod Producers Association for their "excellent job in updating specifications for sodding operations" particularly as it relates to thickness of cuts; and suggested they be considered whenever possible.

He recommended the following payment schedule: 5% limitation on retainage; 10% retained until 50% of the job is complete, after which no more than 5% is retained; 2% on jobs over \$250,000 once the entire job has been substantially complete. Owners should be obligated to put retentions in escrow with the interest accrued to the benefit of the contractor. When a project is complete, final payments should be made within 30 days.

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- Steel blade driver, may be used as positive or slip-type.
- Hinged chute guard-leaf mulcher plate.



BUNTON MODEL 36HDW-10TCI

With one hand you can mow across any grade that you can walk across. Independent power to each traction wheel prevents side-slipping.

- Heavy-gauge steel frame for low maintenance
- Ride the open areas or medium grades.
- Five forward ground speeds, independent of engine or blade speed.
- 10 H. P. cast iron engine, 6 quart fuel tank and snorkel-type air cleaner mounted on handle.



BUNTON MODEL 52-10TCI WITH OPTIONAL 3252 RIDER

Power steering levers for quick turning and self-propelling. Rider attachment changed without tools from riding to walking.

- Bunton heavy-duty self-propelleds — 24, 28, 32, 36 and 52 inch cuts.
- Close trimming with both sides.
- Puncture proof dual-chamber tires, roller bearings and grease fittings.
- Twin blades (not synchronized) suction lift type.
- Adjustable leaf-mulcher guard.

Sod For A Mobile Home

In 1971, there were approximately one million American families living in mobile homes. That figure has already increased immeasurably in 1972 and will continue to go up as more mobile home parks are established and coaches themselves continue to incorporate the spaciousness, convenience and luxury features found in the most affluent of homes.

Mobile home park is really a misnomer, for most people who purchase coaches today see them as permanent homes in a permanent locale. In fact, the "move" factor with mobile homes is less than with conventional housing.

One reason for this: the extensive facilities that are being offered by mobile home park developers. A prime example is Pacific Western Mobile Estates, Inc., a newly opened mobile home community in San Jose.

It is an extensive 72 acre complex, located off Highway 17 at Trimble and Oakland Roads in North San Jose. Really, it is two mobile home parks in one. There are a total of 618 lots, 370 in one are for adults and 248 in another area for families.

Facilities, centered in two clubhouses, include an indoor hydrotherapy pool, saunas, launderettes, hobby, exercise and billiard rooms, lounges, and large community rooms with adjoining kitchens for the use of all residents.

Outdoor recreation is enhanced by two swimming pools at each recreation center; shuffleboard, tennis,

badminton and volleyball courts, and a 9-hole putting green.

A natural environment is of paramount importance in the planning of a Pacific Western Mobile Home Estates community. It is most obvious in the changes taking place at the San Jose park, as a once bare area is being turned into lush green expanses of lawn, creating a park-like setting throughout the mobile community.

The landscaping itself is being done by Town and Country Landscaping and Supply Company in Los Gatos and it can be called "instant" landscaping in every sense of the word.

Since the mobile home community is already open, Pacific Western specified that the landscaping be completed as soon as possible. To those who are witness to what is taking place, it is almost a miracle to see what "instant" landscaping is all about.

Much of the miracle is being created by Nunes Turfgrass. Town and Country estimates that 50,000 square feet of sod, or nearly two acres, all from Nunes Turfgrass Nurseries in Patterson, will ultimately be used in its landscaping program for Pacific Western, much of it in the area surrounding the man-made lake at the entrance to the mobile home community and the recreation/clubhouse areas that form the nucleus for both the adult and family section.

The entry to a Pacific Western mobile home community has become a trademark for the rapidly-expanding company, a division of the Hallmark Group Companies, Inc. A landscaped avenue marked by an expanse of green lawn on both sides, leads toward the recreation center accented by a graceful fountain illuminated at night with multicolored lights.

During the past few weeks, residents at Pacific Western have seen the expanse of lawn actually become a reality in a matter of hours.

The sod, or instant grass, comes to Pacific Western from Nunes turf growing grounds in Patterson, headquarters for the largest turf-producing company in California.

Town and Country actually places the order for the sod that will be needed for each installation the day before actual delivery. The sod itself is cut the morning of the delivery day.

A Nunes Sod Harvester cuts the sod in precise strips 6 feet long and 18" wide. It lifts the sod from the ground, rolls each strip compactly for delivery to pallets that are then placed on the delivery trucks. Once it arrives in San Jose, the forklift truck unloads each pallet as it is needed by the workmen.

Installing sod is much like installing tiles. Each strip fits end to end, and like tile or carpeting, the sod can be cut to curve around concrete



Completed recreation center lawn increases the appeal of the mobile home complex instantly. It takes a crew of three men, working seven hours, to put down approximately 7500 square feet of sod a day.

Estate

patios or circle statuary.

In addition to the installation of Nunes Turfgrass throughout the park, Town and Country is incorporating over 1300 trees into the overall plan for Pacific Western, including the planting of several dozen mature olive and palm trees around the two clubhouses and recreation centers.

John Anderson of Town and Country no longer uses seed in his landscaping programs, especially like the one at Pacific Western," he says. A three-man crew, working seven hours, can turn bare dirt into a lush green lawn covering approximately 7500 square feet in just one day. Sod gives a completed look to a new area, a factor of prime importance in an area that is seen by the public daily.

To seed the extensive areas at Pacific Western now being covered with sod would not only take much longer, it would require crews on constant duty to water, fertilize, weed until the lawn is established months later. Nunes Turfgrass is giving to Pacific Western in two weeks what it would take nine months to achieve with seed.

More importantly, it is giving a permanent and established look to a brand new community and also will give immediate use of greenbelt areas to residents. This points up the most dramatic use of turfgrass, and why more and more private individuals as well as commercial firms are turning to sod.



Workmen from Town and Country Landscaping and Supply Company of Los Gatos unroll strips of sod. The bare dirt yard in front of the recreation center at Pacific Western Mobile Estates complex is quickly transformed into lush green grass.



Strips of sod are rolled down end to end to create an "instant" lawn. In a few short hours a bare area can become a site of beauty.



This Nunes sod harvester can cut, lift, roll or slab and palletize more than 1000 square yards of sod per hour.

Big Tree Moving Operation Completed At Opryland U.S.A.

One of the South's biggest tree-moving operations has been completed at the new 369-acre Opryland U.S.A. entertainment complex. It opened May 27, 1972 and will be the home of radio station WSM's new Grand Ole Opry House in 1974.

The complex will house other musical and general entertainment attractions, such as puppet shows, five musical areas depicting various periods and styles of music, wild and domestic animals, and amusement rides. It is near the Cumberland River, four miles north of I-40 at the intersection of U.S. 265 and 65 on Briley Parkway, near Nashville, Tennessee.

One-fourth of the Opryland complex is woods and the trees were transplanted fast enough to keep up with contractors who are building roads, constructing lakes and laying underground utilities. With the help of the two "tree spades"—one truck-mounted and one pulled by farm tractors—nearly all of the trees that were originally on the site have been saved.

An Allis-Chalmers Corp. One-Sixty tractor pulled the Model TS44 tree spade, made by the Vermeer Co. The Model TS66 can automatically dig and transplant a 40 ft. tree in minutes.

"This was the first time in the middle Tennessee area, and possibly in the Southeast, that such a large tree mover has been used," said Mike Downs, general manager of Opryland U.S.A. "We moved nearly 5000 trees."

Because construction began before many of the trees could be transplanted, Ben Moore, Opryland's landscape manager, developed a temporary tree nursery. At one time, the nursery contained more than 400 trees waiting to be transplanted, complete with existing birds' nests.

"We took every precaution to preserve our beautiful trees," Mr. Moore said.

When it is done, unlike other major theme parks, Opryland U.S.A. will present the authenticity and uniqueness of America, rather than fantasy. The central themed areas of the 110 acre entertainment park are composed of five "towns" which highlight America's bread and butter music—jazz and blues, country, folk, western and contemporary music—all set in the natural surroundings of 369 acres of Tennessee woods and hills.

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- Steel wheels with ball-bearings and grease fittings.



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- Goodall push mowers — 18, 19, 20 and 22 inch cuts with engines up to 5 H. P.



GOODALL MODEL 28G-8BSB WITH GCG GRASS CATCHER AND 3252G RIDER.

The mower that steers with the touch of a finger. Optional extra's: 2.5 bu. all metal grass catcher, dump or lift-off without tools, rider attachment may be changed instantly and without tools, from riding to walking. 8 H.P. Synchro-balanced engine.

- Goodall Heavy-duty self-propelleds — 24, 28, 32, 36 and 52 inch cuts.



GOODALL MODEL 36G-8BSB WITH 3252G RIDER

Puncture proof tires set in and behind cutting unit, enables you to trim close with both sides. 10 H.P. cast iron engine.

- Power steering with finger-tip turning levers
- Five forward ground speeds, independent of engine or blade speed.
- Mows across any grade you can walk across.
- Heavy-gauge steel frame, for low maintenance.
- Adjustable leaf-mulcher-guard.



They Tip'em To Test'em

Built-in safety features in modern equipment are taking on new mean-

ing with passage of new safety laws. Stresses and strain of metals must be

accurately computed before machinery is placed on the market.

In this unusual series of photos, engineers at New Holland Division of Sperry Rand deliberately put this loader through a roll test. The loader's low center of gravity and general stability posed a problem initially in starting the roll. But manpower converted into horsepower started the sequence (above). Upper left photo starts the action. Top above, the loader bites the dust. Inertia keeps the brute on the roll. Next comes the bounce (bottom left). Loader at end of test, below is no worse for the wear.

Tip'em, Twist'em, Toss'em and Turn'em; today's loader will take the toughest beating.





Collecting That Hard Earned Dollar

By **HANK HARVEY, JR.**
Arborist
Rutledge, Pennsylvania

AS UNFAIR as it seems, the hardest part of some jobs is not doing the work, it's getting paid for it. Certainly nothing can put a businessman on the defensive like having money overdue to him. This is especially true for the service contractor who has nothing tangible to repossess and thus very little recourse for non-payment.

It should be pointed out that delinquent accounts usually make up only a small number in most service operations. Most people are anxious to pay for services rendered. It is the exceptions about which this article is concerned.

The best advice in these few cases might be to take positive steps which would preclude, or at least reduce, the possibility of your getting into such a situation in the first place.

How?

Well, for starters, you should be careful with whom you deal, especially on a verbal contract. (I've found that many people fear or resent a written contract as such. One way to get past this psychological barrier is to have yours called an

agreement or a work order or some other less offensive name.)

If you must use a verbal contract, at least write up the specifications for the job and make sure your customer has a copy—before you start the job, to refer to later if there is any misunderstanding. Your printed estimate or job order form should have printed on it **Payment Due Upon Completion, Terms: Cash**, or something similar which will protect you from the "slow-pays."

There is no sure way to spot a "No-Pay" or "Slow-Pay in advance, but there are a few good indicators:

Does the party you are bidding for actually **own** the property? I have experienced cases where a tenant, fed up with unsatisfactory conditions, decided to contract out work expecting the landlord to pay for it. In such a case, the tenant assumes no risk... it's not his place. The landlord won't pay, he didn't contract for the work. Who then is the poor contractor supposed to collect from?

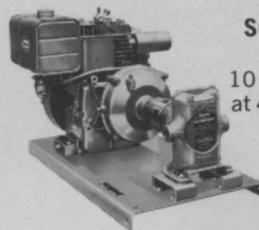
Another area where extreme care is in order is that of doing subcontract work for larger contractors. Often the prime contractor on a large job will intentionally use subcontractors to avoid taking risks

(continued on page 88)

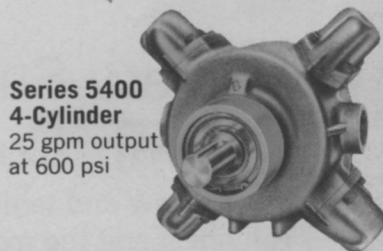
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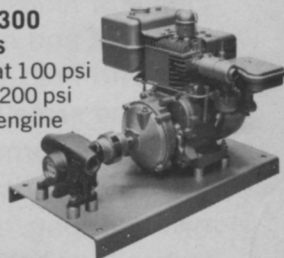
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1973 SUPPLIERS GUIDE AND EQUIPMENT DIRECTORY

1972 ARTICLE INDEX

As a special service to readers, WEEDS TREES AND TURF presents the 1973 Suppliers Guide and Equipment Directory. This annual directory and guide has been thoroughly updated. Chemical and equipment manufacturers are now listed two ways, name of company and products manufactured, and product groupings and companies manufacturing those products.

The "Green Industry" is dynamic.

New products and new additions to product lines are constantly changing. Consequently, omissions of manufacturers and/or products are unavoidable. Your comments and suggestions are invited to help improve future editions.

Following the directory is an index to the articles that appeared in the 12 issues of WEEDS TREES AND TURF in 1972. An author index is listed at the end.

**CHEMICAL KEY: Manufacturer (M);
Formulator (F); Distributor (D).**

ALGAECIDES

Applied Biochemists, Inc. (M)
Great Lakes Biochemical Co. (M)
3M Company (M)
Ralston Purina Company (M)

FUNGICIDES

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Chevron Chemical Co. (M)
W. A. Cleary Corporation (M)
Diamond Shamrock Chemical Co. (M)
J. J. Dill Co. (F)
E. I. Du Pont de Nemours
& Co., Inc. (M)
Elanco Products Company (M)
Fasey & Besthoff, Inc. (F)
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Kerr-McGee Chemical Corp. (F)
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Merck & Co., Inc. (M)
Miller Chemical & Fertilizer Corp. (F)
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Rhodia Inc., Chipman Div. (F)
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Dow Chemical USA (M)

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Monsanto Company (M)
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FMC Corporation (M)
Pennwalt Corporation (M)
Rhodia Inc., Chipman Div. (M)
U.S. Borax & Chemical Corp. (M)
Velsicol Chemical Corp. (M)

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Monsanto Company (M)
Nalco Chemical Co. (F)
Niagara Chemical Div.,
FMC Corporation (M)
Randustrial Corporation (F)
Southern Mill Creek Products
Co., Inc. (F)
U.S. Borax & Chemical Corp. (M)
West Chemical Products, Inc. (M)

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& Co., Inc. (M)
Niagara Chemical Div.,
FMC Corp. (M)
Velsicol Chemical Corp. (M)

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& Co., Inc. (M)
Gulf Oil Company (M)
Niagara Chemical Div.,
FMC Corporation (M-F)
Rhodia Inc., Chipman Div. (M-F)

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Dow Chemicals USA (M)
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Elanco Products Company (M)
Gulf Oil Company (M)
Mallinckrodt Chemical Works, Inc. (M)
Niagara Chemical Div.,
FMC Corporation (M)
Pennwalt Corporation (M)
Rhodia Inc., Chipman Div. (M)
O. M. Scott & Sons Co. (F)
Stauffer Chemical Co. (M)
Thompson-Hayward Chemical Co. (F)
Tucos Div., Upjohn Company (M)

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Dow Chemical USA (M)
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& Co., Inc. (M)
Elanco Products Company (M)
Fasey & Besthoff, Inc. (F)
Gulf Oil Company (M)
Hercules, Inc. (M)
Mallinckrodt Chemical Works (M)
Masonite Corporation (F)
Miller Chemical & Fertilizer Corp. (F)
Nalco Chemical Co. (F)
Pennwalt Corp., Agchem-Decco (M)
Ralston Purina Company (F)
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Velsicol Chemical Corp. (M)

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C. B. Dolge Company (F)
Dow Chemical USA (M)
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Elanco Products Company (M)
PBI-Gordon Corporation (F)
Humble Oil & Refining Co. (F)
Mallinckrodt Chemical Works (M)
Meinhardt Products Div. (F)
Miller Chemical & Fertilizer Corp. (F)
Mobil Chemical Co. (M)
Nalco Chemical Co. (F)
Pennwalt Corp., Agchem-Decco (M)
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Co., Inc. (D)
Thompson-Hayward Chemical Co. (F)
Velsicol Chemical Corp. (M)

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Diamond Shamrock Chemical Co. (M)
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Hydroponic Chemical Co. (F)
Hydro Turf (F-D)
International Minerals
& Chemical Corp. (F)
Lakeshore Equip. & Supply Co. (F-D)
J. J. Mauget Co. (F)
Miller Chemical & Fertilizer Corp. (F)
Plant Marvel laboratories (F)
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The O. M. Scott & Sons Co. (F)
Sierra Chemical Company (F)
Sudbury Laboratory, Inc. (F)
Vistron Corporation (F)

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Ferti-Feeder (F)
Hercules, Inc. (M)
Lakeshore Equip. & Supply Co. (D)
Lawn Medic, Inc. (F)
Ra-Pid-Gro Corp. (F)
Rockland Chemical Co., Inc. (F)
S & D Products, Inc. (F)
The O. M. Scott & Sons Co. (F)
Sierra Chemical Company (F)

ORGANIC NITROGEN

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Milwaukee Sewerage Commission (M)

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J. J. Dill Co. (F, D)
J. J. Mauget Co. (F)
U.S. Borax & Chemical Corp. (M)

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KDM Company (M)
Loveland Industries, Inc. (M)
LTVAC Service Technology Corp. (M)
Stull Chemical Co. (M)

INVERT EMULSION ADJUVANTS

Amchem Products, Inc.
Stull Chemical Company

ANTI-TRANSPIRANTS

Aquatrols Corp. of America (M)
Nursery Specialty Products Co. (M)

EMULSIFIERS

Aquatrols Corp. of America (M)
Atlas Chemical Industries,
Div. ICI America (M)
KDM Company (M)
Retzlöff Chemical Co. (M)
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TREE SYSTEMS

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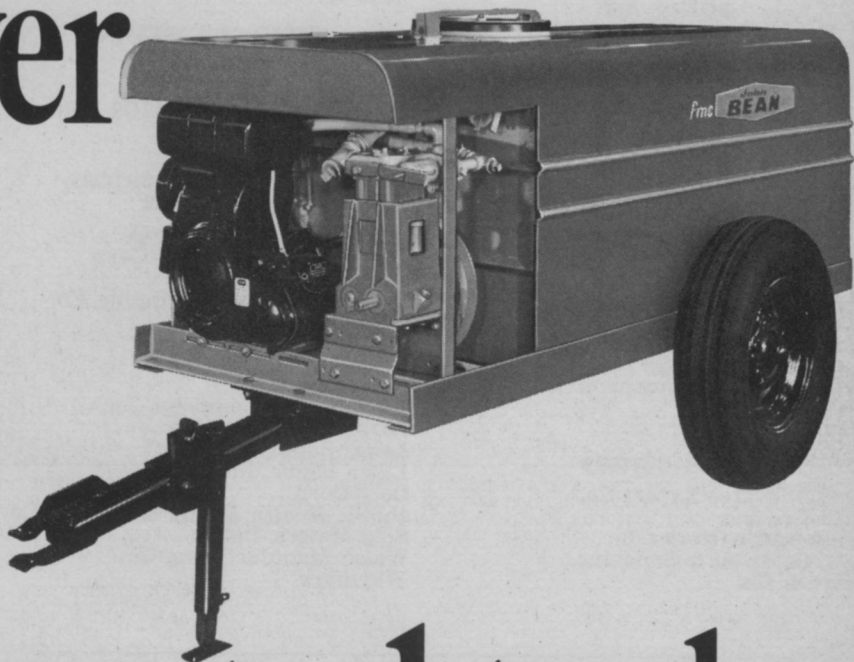
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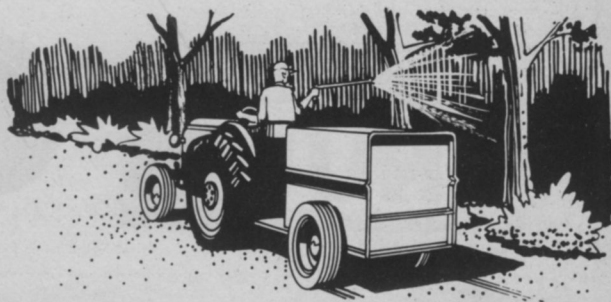
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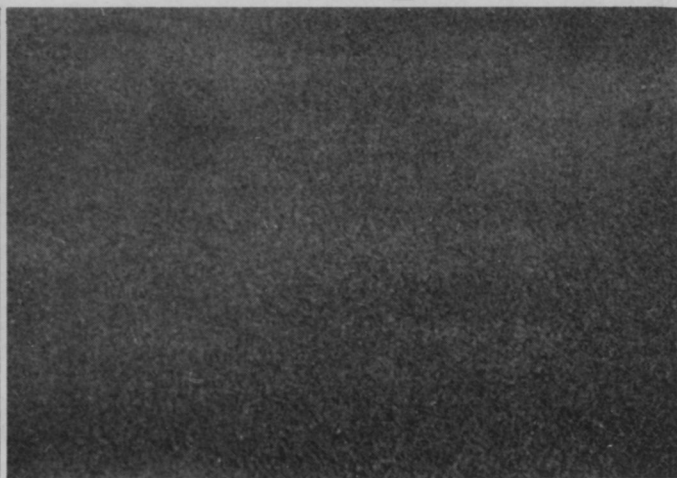
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gives it
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THAN ANY OTHER BLUEGRASS
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Glendale Optical Company
Mine Safety Appliances Co.
Safeline Products

Welsh Mfg. Co.
Willson Products Div.,
Ray-O-Vac Co.

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Brillion Iron Works, Inc.
The Broyhill Co.
Deere & Co.
Engineering Products Co.
Ford Motor Co., Tractor Div.
Fuerst Brothers
Gravely Corp.
International Harvester Co.
Massey-Ferguson, Inc.
Melroe Mfg. Co.
Oliver Corp.
Simplicity Mfg. Co., Inc.

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The Broyhill Co.
J. I. Case Co.
Clark Mfg. Co.
Deere & Co.
Finn Equipment Co.
Ford Motor Co., Tractor Div.
John H. Graham & Co., Inc.
Gravely Corp.
Hahn Inc., — West Points Products
International Harvester Co.
Oliver Corp.
Wheel-Horse Products, Inc.

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American Optical Company
Safeline Products

HOISTS

Adventure Line Mfg.

HOSE

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The Broyhill Co.
Century Engineering Corp.
Contree Sales, Inc.
The J. J. Dill Co.
Friend Manufacturing Corp.
Great Lakes Chemical Div.
Larson Machine, Inc.
F. E. Myers & Bro. Co.

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Public Health Equip. & Supply Co.

HYDRAULIC & AIR POWERED TOOLS

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Fairmont Hydraulics

HYDRAULIC LIFTS

Howard Rotavator Co., Inc.
Pitman Mfg. Co.
Trailevator Div., Magline, Inc.

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Reinco, Inc.
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Village Blacksmith

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Hays Mfg. Div., Zurn Industries
Irrigation Accessories Co.
Lumenite Electronic Co.
Melnor, Turf Irrigation Div.
Moody Sprinkler Co., Inc.
L. R. Nelson Mfg. Co., Inc.
Rainbird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.
The Toro Co., Moist O'Matic Div.
Weather-matic Div.,
Telsco Industries

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Buckner Sprinkler Co.
Brighton By-Products Co., Inc.
Irrigation Accessories Co.
King Bros. Industries
Melnor, Turf Irrigation Div.
Rainbird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.
Ridge Plastics Co.
Sprinkler Irrigation Supply Co.
The Toro Co., Moist O'Matic Div.
Weather-matic Div., Telsco Ind.
Williamstown Irrigation, Inc.

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Melnor, Turf Irrigation Div.
Moody Sprinkler Co., Inc.
L. R. Nelson Mfg. Co., Inc.
Rainbird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.
Sprinkler Irrigation Supply Co.
The Toro Co., Moist O'Matic Div.
Weather-matic Div., Telsco Ind.
H. N. Webster Mfg.

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F. D. Kees Mfg. Co.
Melnor, Turf Irrigation Div.
Weather-matic Div., Telsco Ind.

IRRIGATION, SPRINKLER GUN

Buckner Sprinkler Co.
Rainbird Sprinkler Mfg. Corp.
Weather-matic Div., Telsco Ind.

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Moody Sprinkler Co., Inc.
Rainbird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.
Sprinkler Irrigation Supply Co.
The Toro Co., Moist O'Matic Div.
Weather-matic Div., Telsco Ind.

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Melnor, Turf Irrigation Div.
Moody Sprinkler Co., Inc.
L. R. Nelson Mfg. Co., Inc.
Rainbird Sprinkler Mfg. Corp.
Sprinkler Irrigation Supply Co.
The Toro Co., Moist O'Matic Div.
Weather-matic Div., Telsco Ind.
Williamstown Irrigation, Inc.

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Melnor, Turf Irrigation Div.
Moody Sprinkler Co., Inc.
L. R. Nelson Mfg. Co., Inc.
Rainbird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.

Sprinkler Irrigation Supply Co.
The Toro Co., Moist O'Matic Div.
Weather-matic Div., Telsco Ind.

IRRIGATION SPRINKLERS, SPRAY, POP-UP, HEADS

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Melnor, Turf Irrigation Div.
Moody Sprinkler Co., Inc.
L. R. Nelson Mfg. Co., Inc.
Rainbird Sprinkler Mfg. Corp.
Sprinkler Irrigation Supply Co.
The Toro Co., Moist O'Matic Div.
Weather-matic Div., Telsco Ind.
Williamstown Irrigation, Inc.

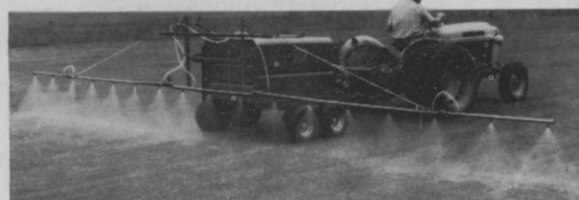
IRRIGATION SPRINKLERS, ROTARY, POP-UP, HEADS

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Melnor, Turf Irrigation Div.
Moody Sprinkler Co., Inc.
L. R. Nelson Mfg. Co., Inc.
Rainbird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.
Sprinkler Irrigation Supply Co.
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Weather-matic Div., Telsco Ind.
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Weather-matic Div., Telsco Ind.
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Hays Mfg. Div., Zurn Industries
Melnor, Turf Irrigation Div.
Moody Sprinkler Co., Inc.
L. R. Nelson Mfg. Co., Inc.
Rainbird Sprinkler Mfg. Corp.
Rain-O-Mat Sprinklers, Inc.
The Toro Co., Moist O'Matic Div.
Weather-matic Div., Telsco Ind.

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Rain-O-Mat Sprinklers, Inc.

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King Bros. Industries
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Rainbird Sprinkler Mfg. Corp.
Rain Jet Corporation
Rain-O-Mat Sprinklers, Inc.
The Toro Co., Moist O'Matic Div.
Weather-matic Div., Telsco Ind.
Williamstown Irrigation, Inc.

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Waldon, Inc.

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Erickson Corp.

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Gravely Corp.
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Welsh Mfg. Co.
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Delevan Mfg. Co.
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Terrain King Corp.

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Ransomes, Sims, Jeffries, Ltd.
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Roseman Mower Corp.
Roxy-Bonner, Inc.
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Deere & Co.
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Flymo Division, Keltec, Inc.
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Goodall Div.
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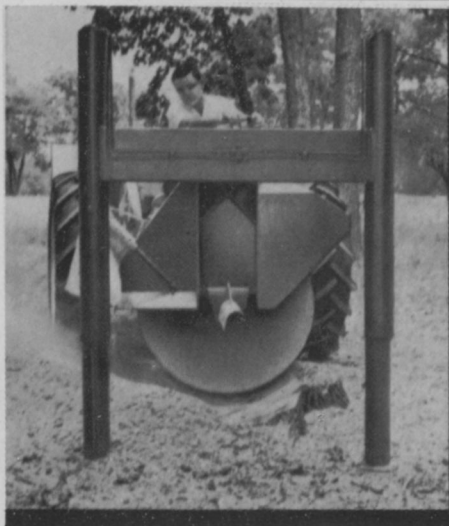
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SAWS, CHAIN, ELECTRIC

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Partner Industries of America, Inc.
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Stihl American, Inc.
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Fairmont Hydraulics
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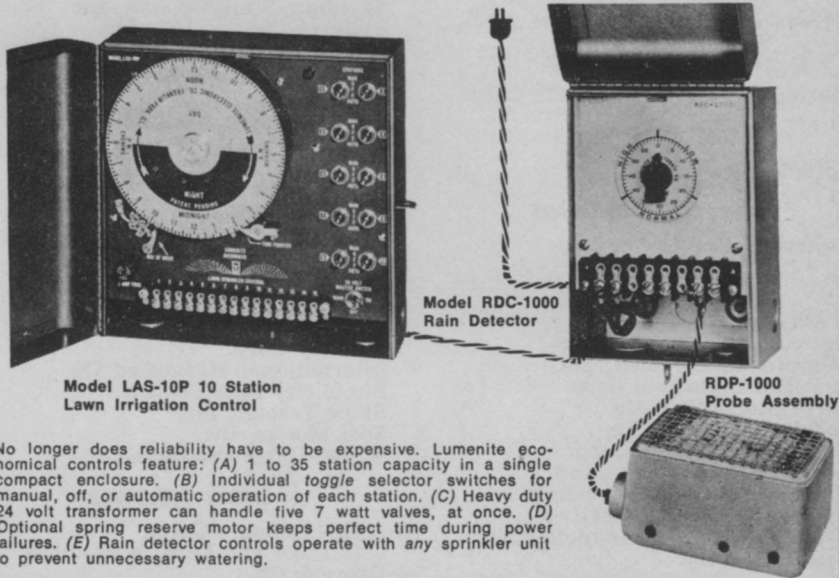
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Deere & Co.
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Engineering Products Co.
Gandy Co.
Garber Seeders, Inc.
Gravely Corp.
Herd Seeder Co. Inc.
International Harvester Co.
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Lawn Medic, Inc.
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SEEDERS, HYDRAULIC

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Finn Equipment Company
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SEEDERS, SOD

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SEEDING MULCHES

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Grandberg Industries

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Melnor Industries, Inc.
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Seymour Smith & Son, Inc.
Tallman Equip. Co. Inc.

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Gravely Corp.
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MTD Products, Inc.
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International Harvester Co.
Simplicity Mfg. Co., Inc.
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Solo Motors, Inc.
Wheel-Horse Products, Inc.

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organic nitrogen

The greenskeeper

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organic nitrogen

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Cushman Motors
Deere & Co.

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Fimco, Inc.
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Gravely Corp.
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The Guildsman Company
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Hydro Turf
Hydroponic Chemical Co.
Larson Machine, Inc.
Lawn Medic, Inc.
Lockwood Corp.
Mallinckrodt Chemical Works
Marlow Pumps Div.
Master Sprayers, Inc.
F. E. Myers & Bro. Co.
Public Health Equip. & Supply Co.
Robco, Inc.
Root-Lowell Corp.
Smithco, Inc.
Solo Motors, Inc.
Southern Mill Creek Prod. Co., Inc.
Stull Chemical Co.
Universal Div. of Leigh Prod., Inc.
The Vandermolen Co.
Walsh Mfg. Co.
Waymark
Wayne Engineering Corp.
West Chemical Products, Inc.
Winru Chemical & Sales Co.

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R. E. Chapin Mfg. Works, Inc.
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The J. J. Dill Co.
The C. B. Dolge Co.
Red Ewald, Inc.
Great Lakes Chemical Div.
H. D. Hudson Mfg. Co.
Larson Machine, Inc.
Parco Div., National Foam
Public Health Equip. & Supply Co.
Root-Lowell Corp.
West Chemical Products, Inc.
Winru Chemical & Sales Co.

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Broyhill Co.
Buffalo Turbine Ag. Equip. Co.
Century Engineering
Champion Sprayer Co.
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Contree Sales, Inc.
The J. J. Dill Co.
Deere & Co.
The C. B. Dolge Co.
Friend Mfg. Co.
Great Lakes Chemical Div.
H. D. Hudson Mfg. Co.
Hydroponic Chemical Co., Inc.
Larson Machine, Inc.
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Parco Div., National Foam
Root-Lowell Corp.
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The Vandermolen Co.
Walsh Manufacturing Co.
West Chemical Products, Inc.

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Friend Mfg. Co.
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Hayes Spray Gun Co.

H. D. Hudson Mfg. Co.
Hydroponic Chemical Co., Inc.
Larson Machine, Inc.
Master Sprayers, Inc.
Melnor Industries, Inc.
Universal Div. of Leigh Prod., Inc.
Walsh Mfg. Co.
Wayne Engineering Corp.

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Champion Sprayer Co.
R. E. Chapin Mfg. Works, Inc.
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Stihl American, Inc.
Tradewinds, Inc.
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Larson Machine, Inc.
The Vandermolen Co.
Waymark

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John Blue Co.
Champion Sprayer Co.
Cushman, Outboard Marine Corp.
Deere & Co.
The J. J. Dill Co.
Ford Tractor Operations,
North America
Gandy Co.
Gravely Corp.
Great Lakes Chemical Div.
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Highway Equipment Co.
International Harvester Co.
F. D. Kees Mfg. Co.
Larson Machine, Inc.
Lely Corp.
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Simplex Mfg. Co.
TCL, Inc.
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Willmar Mfg. Co.

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North America
Gravely
International Harvester Co.
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International Harvester Co.
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Tradewinds, Inc.
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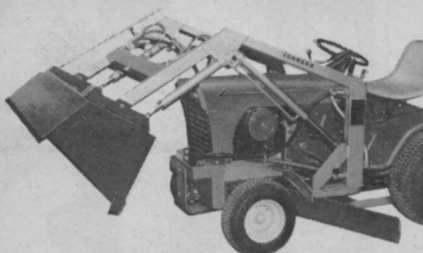
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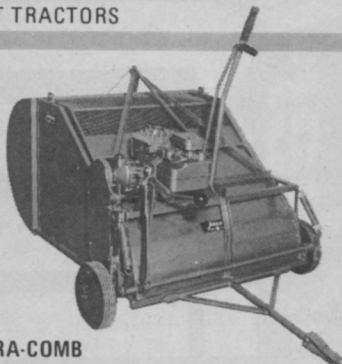
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Highworker, folding platform for tree trimming 9-18 ft.
Hoist, 750 lb. and 2,000 lb. capacity

Agrico Chemical Company, P.O. Box 3166, Tulsa, Oklahoma
74101

Country Club fertilizers and weed or insect control
products for turfgrass and gardens

Agricultural Alumni Seed Improvement Association, Inc., P.O.
Box 158, Romney, Ind. 47981

Sodco, Kentucky bluegrass seed

Agtronics Mfg. Co., P.O. Box 1248, Barstow, Calif. 92311
Soil moisture meter

Agway Inc., P.O. Box 1333, Syracuse, N.Y. 13201
Port A Bin, bulk handling of fertilizer at location
Fertilizer
Environmental protection chemicals, herbicides, insecticides, fungicides

Air-Lec Industries, Inc., Outdoor Products Div., 3306 Commercial Ave., Madison, Wis. 53714

Weed Cutter, aquatic, swath cut 3 1/2 ft. wide, 3 1/2 ft. deep, attaches to any boat, 15 ft. or longer

Air Rake Manufacturing Corporation, 5-7 Springfield St., Chicopee, Massachusetts 01014

"Yard Tiger," blowers, everything machines, vacuums
Compactorette, trash compactor

Alcoa Aluminum Company of America, Alcoa Building, Pittsburgh, Pa. 15219

Irrigation pipe

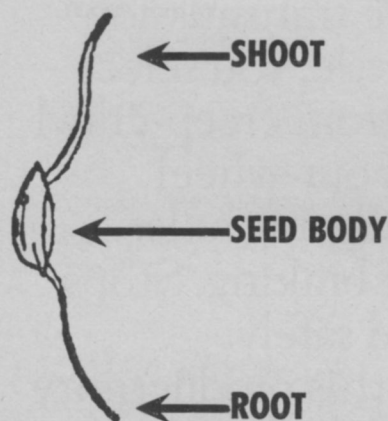
Allis-Chalmers Corp., Outdoor and Leisure Products, Box 512, Milwaukee, Wis. 53201

620 Tractor, 19 1/2 hp
400 Series lawn and garden tractors, 10 and 16 hp
Homestreader lawn and garden tractors, 7 and 8 hp
Scamp riding mower, 5 and 8 hp
Walk-behind mowers, one 19 in. and three 21 in.
Rotary tiller, 3 1/2, 5 and 8 hp worm gear drive; 5 hp chain drive
Tracker snow thrower, 4 and 8 hp
Chain and blade saws, Models 75 and 75A have a 14 in.

SOD GROWERS, CONTRACTORS, SUPPLIERS PLANT MANAGERS, ADMINISTRATORS

What We've Been Waiting For Is Here! — An Innovation That
Strikes a Giant Breakthrough in Seed Technology.

PRE-GERMINATED GRASS SEEDING



sample of millions
of Germinated Plantlets

LAWN ● ★ MEDIC

Lawn Medic's process economically
produces plantlets, makes for easy
handling, storage and application.

Your gain by using Germinated Seed.

- 1,500 - 2,000% less water when germinating grass seed.
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- Quick cover on slopes, hard to establish areas.
- Greater use of superior varieties, (normally taking longer to establish and gain full coverage.)
- No excess seeding rates, all grasses come up as specified by GERM TESTS.

Plantlets come in bags to cover a given area. Specialized mixes or straight varieties are pre-germinated.

SELECTED VARIETIES, TIME FOR EMERGENCE* through soil surface after planting.

Bermudagrass — 3 days

Prato, Baron — 5 days

Merion Blue — 8 days

Bentgrasses — 3 days

Newport Ken. — 5 days

Ken. 31, Rye — 4 days

* Certain variety mixes will emerge in 1 - 2 days.

PRE-GERMINATED GRASS PLANTLETS U.S. Patent Pending.

For more details, prices, write **Donald W. Burton, Pres., Lawn Medic Inc.**

1024 Sibley Tower, Rochester, New York 14604 (716-494-1462)

LAWN MEDIC PRODUCTS & SERVICES: SOIL NUTRIENT FORTIFIER Fertilizers, Commercial Seed & Pesticides, YARD-CREW mowing and pickup service, PUTTER'S GREEN Homeowner lawn service, PRE-GERM SEEDING.

Interma

You can't do this with any other compact backhoe-loader.

Go from loading to digging in the time it takes to change seats.

Because this backhoe mounts on the back.

Sure, other compact loaders have backhoe attachments. But you have to disconnect the backhoe if you want to use the loader again.

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Load... 1500 lbs. of material, and dump it with

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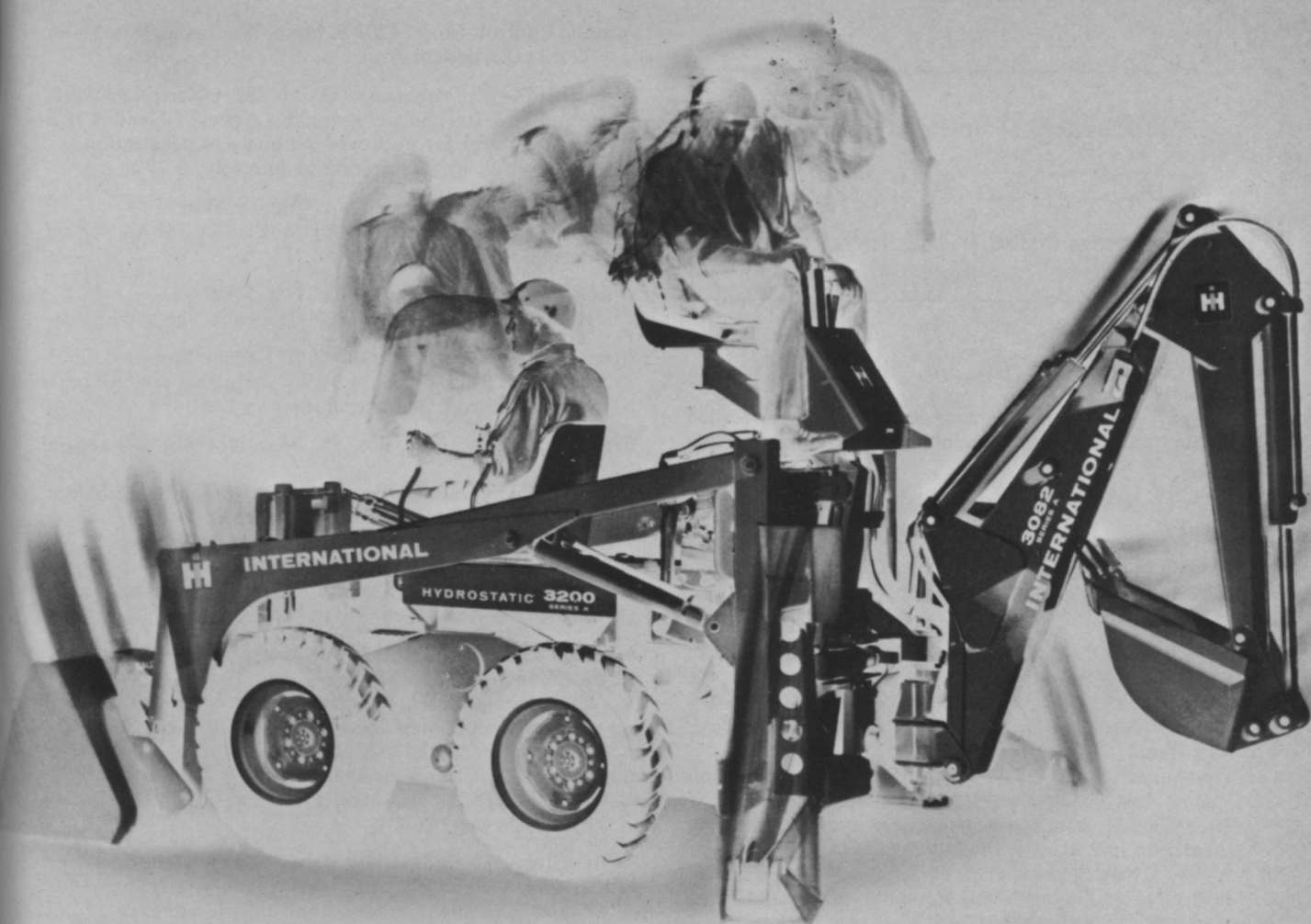
And all this productivity comes in a backhoe-loader package that's only 6'6" high by 4'10" wide.

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And keep it.



International[®]



The 3200A compact backhoe-loader.

Industrial Equipment
International Harvester, Chicago, Ill. 60611

bar; Models 85, 95, 195 and 295 have a 17 in. bar

Amchem Products, Inc., Ambler, Pa.

Tre-Hold®, spray paint

Amitrol® amitrole, herbicide, postemergent

Aqua-Kleen®, herbicide, granular and spray

Brominal® bromoxynil, herbicide, bareground

Butyrac® 175, herbicide, postemergence

Emulsamine®, herbicide, brush

Envert® DT, invert emulsion of 2,4-D and 2,4,5-T

Directa-Spray®, sprayer, low-drift

American Arborist Supplies, Concord Industrial Park, Concordville, Pa. 19331

Arborist supplies

American Bioculture Inc., Bio-Turf Division, P.O. Box 424, Glen Head, L.I., New York 11545

Bio-Turf, soil conditioner, bio-chemical 100% organic flocculating agent

American Cyanamid Co., Agricultural Div., P.O. Box 400, Princeton, N.J.

Abate® 4E, insecticide, mosquito larvae

Amino Triazole Weed killer, herbicide, abatement

Cyanogas®, fumigant, rodenticide

Cygon®, insecticide

Malathion ULV concentrate, insecticide

Thimet® phorate, insecticide, liquid

Alphabetical Listing of Suppliers

WEEDS TREES AND TURF

Advertisers Listed In Boldface Type

American Excelsior Company, P.O. Box 5067, Arlington, Texas, 76011

Curlex™ Blanket, permanent vegetative cover, seeded areas, retains moisture, maintain temperature, provide shade

American-Lincoln Corp., 518 S. St. Clair, Toledo, Ohio Welders

American Oil Co., 910 S. Michigan Ave., Chicago, Ill. 60680
2,4-D, herbicide, postemergence
Dormant oil

American Optical Corporation, Safety Products Division, 14 Mechanic St., Southbridge, Mass. 01550

Sure-Guard®, Red Devil®, Agri-Spray™, Agri-Dust™, Paint-N-Dust™, respirators for protection against dust, mist, fumes, vapors, gases, chemical

Duraguard®, Safety glasses and goggles, eye protection against dust, flying objects, chemical splash

Hear-Guard®, hearing protectors, all types for hearing protection incl. muff type and ear plugs

A-Line™, hard hats and caps, plastic hats and caps

Protective clothing, rubberized, aluminum, cloth, etc., materials for foul weather, etc.

American Sod Producers Assn., Box 231, College of Agriculture and Environmental Sciences, Rutgers University, New Brunswick, N.J. 08903
Sod

The Ansul Company, 1 Stanton St., Marinette, Wis. 54143
Ansar, herbicide, contact

Broadside, herbicide, contact

Phytar 560, herbicide, contact

Retard maleic hydrazide, growth retardant

Hypo-hatchet injector

Applied Biochemists, Inc., 5300 W. County Line Rd., Mequon, Wis. 53092

Cutrine®, algaecide for potable water reservoirs; farm, fish and fire ponds; lakes; fish hatcheries

Cutrine® Granular, algaecide for specific control of chara in potable water reservoirs; farm, fish and fire ponds; lakes; fish hatcheries

Swimtrine®, algaecide for swimming pools

Aqua-Dial, P.O. Box 1325, Newport Beach, Calif. 92663

Turf sprinklers

Automatic controllers

Automatic valves

Aquamarine Corporation, Box 616, Waukesha, Wisc. 53186

Aqua Trio, weed harvesting system

Sawfish, weed cutter and aquatic front loader

Hy Baller, hyacinth thrower

Hyacinth control station, hyacinth harvester

Aquanautics, Inc., 1246 Birchwood Dr., Sunnyvale, Calif. 94086

Weed rake, underwater

Air boat

Aquatic Controls Corp., 1203 E. Main, Waukesha, Wis. 53186

Weed rake, underwater

Aquatrols Corp. of America, P.O. Box 385, Delair, N.J. 08110

Aqua-Gro (technical), granular, Aqua-T, blended soil wetting agent for improved wetting and penetration

Stoma-Seal, anti-transpirant, reduce wilt

Arctic Mizer Manufacturers, Inc., Cudahy, Wis.

Vacuum-thatcher, pull-type, propelled by 3 1/2 hp, 4 cycle engine, adjustable height

Ariens Co., 655 W. Ryan, Brillion, Wis. 54901

Rotary mower, riding type, 26-38 inches, 5 hp to 8 hp

Armor Metal Products, P.O. Box 822, Helena, Montana 59601

Anderson Rock Picker, specialty equipment used for rock removal in seed bed preparation

Arps Corporation, P.O. Box 95, New Holstein, Wisconsin 53061

Mini-blades, mini-rakes, rear-mounted, landscape blades and rakes for lawn and garden tractors

Stump-master, tractor mounted stump cutter

Arps backhoe, 3-point hitch industrial backhoe

Arps blades and rakes, tractor landscape blades and rakes

Trench devil, self-propelled trenchers, 6-24 hp

Asplundh Chipper Co., Division of Asplundh Tree Expert Co., 50 East Hamilton St., Chalfont, Pa.

Chipper, high speed, tapered blade

Forestry truck, Models L-40, 42, 45, 50; dump body, 12-inch chipper, aerial bucket

Sprout Gard, tree dressing inhibitor

Weed and grass killer, herbicide, bareground

Brush hooks

Atlas Chemical Industries, Division of ICI America, Wilmington, Delaware

Atlox®, emulsifier, non-ionic and anionic-nonionic

Atmus, surfactant, non-ionic

Atmul, surfactant, non-ionic

Avco Ezee Flow, 1st and Sycamore, Coldwater, Ohio 45828

Spreaders, gravity drop, broadcast, fertilizer

Seeders, broadcast

Mower, rotary

Applicators, granular insecticide-herbicide

2460A Stump Cutter...Big Machine with Big Reach

Removes large stumps in minutes... without repositioning

Vermeer's big 65 hp 2460A Stump Cutter means fast, easy, safe stump removal... it means you save thousands of dollars annually. Its high-speed cutting wheel moves in, out, across to chew out big stumps in minutes... without repositioning the tow vehicle. And "The Diggin' Dutchman's" new swing tongue hydraulically telescopes and swings, left and right, to finish off largest stumps in hard to reach spots. Let us sink our teeth into your stump problems. Write "The Diggin' Dutchman" for information and complete literature.



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VERMEER TREE EQUIPMENT DIVISION
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... and it's easy to maneuver! Digs 24" below the ground, up to 72" wide. Straight across cutting movement gives strict control next to streets, curbs, sidewalks, etc. Low silhouette design lets you operate easily in tight spots, under low objects.

For More Details Circle (121) on Reply Card

B

B.A.G. Corporation, 9443 Sherwood Glen, Dallas, Texas 75228

Bags, bucket shaped, PVC coated polyester fabric

Baker Equipment Leasing Corp., Box 25609, Richmond, Va., 23260

Aerial towers, mobile equipment

Derricks, mobile equipment

Bartlett Mfg. Co., 3024 East Grand Blvd., Detroit, Michigan 48202

Saws, tree, combination pruner and saw

Saw, pruning, hand

Saw sheaths

Tree Bracing materials

Bartlett tree paint

Bar-Way Mfg. Co., P.O. Box 640, Stamford, Conn. 06904

Spray guns, long range, worm-gear control on end of barrel end

BASF Wyandotte Corporation, 1609 Biddle Ave., Wyandotte, Michigan 48192

Turf, soil amendment

John Bean, Division of FMC Corporation, 1305 S. Cedar St., Lansing, Michigan

Sprayers, hydraulic, all purpose, pull type, stainless steel tanks

Mistblowers, truck mounted

Mistblowers, nozzle parts

Flamethrowers, (sprayers)

Beck Manufacturing Co., P.O. Box 752, Auburn, Alabama 36830

Lawn-O-Matic, turf grass planter

Sod-O-Matic, sod harvester and laying system

Sod Cutter, cuts 3 strips at the same time

Beeco Products Co., Fort Washington, Pa.

Beeco-Mist, spray sleeve, model 275 spray head

Bell Helicopter Co., P.O. Box 482, Fort Worth, Texas Helicopters

Bemis Company, Inc., 800 North Star Center, Box 215, Minneapolis, Minnesota 55402

Bags, tree balling

Bags and liners, plastic construction

Erosion control materials

Bags, litter

Bags, grass catcher

Twine, tying and wrapping

Bermuda King Co., Rt. 1, Box 33, Okarche, Okla. 73762

Bermuda grasses, sprig planters

Bermuda grasses, sprig harvesters

Beseler Equipment Co., 5417 Oaklawn Ave. S., Minneapolis, Minnesota 55424

Tree slings

Mistblowers, truck mounted

Tree movers

Bete Fog Nozzle, Inc., Greenfield, Mass.

Stubbies, nozzles, mini-sized, three cone angles, flow rates from 3 to 300 gpm

Big "J" Products, Route 1, Hanna, Indiana 46340

Sod harvester, dual palleted

Billy Goat Industries, Inc., P.O. Box 229, Grandview, Mo. 64030

Vacuums, indoor or outdoor, 3 1/2 hp to 8 hp; self-propelled and push models; gasoline, propane, electric or battery driven

The Black & Decker Mfg. Co., 701 E. Joppa Rd., Towson, Md. 21204

Drills

Saws, circular, table, radial arm, handheld

Trimmers, hedge, grass

John Blue Co., P.O. Box 1607, Huntsville, Alabama 35807

Spreaders, fertilizers (liquid, dry, bulk)

Tanks, spray and fertilizer

Sprayers, mounted and pull type, rights-of-way

BMB Co., Inc., North Vermont at 9th, Holton, Kansas 66436

BMB Suburban 48, mower, rotary, 48" trail type with 8 hp engine, offset left or right 24", wheels side or rear mounted

The R. H. Bogle Company, Oronoco & Lee Streets, Alexandria, Virginia 22313

Bo-Rid, herbicide (bareground)

Aceto Diuron, herbicide (bareground)

Aceto Dalapon, herbicide (bareground)

Bromacil herbicides, herbicide (bareground)

Karmex® (Diuron), herbicide (bareground)
 Krovar®, herbicide (bareground)
 Hyvar® X (Bromacil), herbicide (bareground)
 Princep® (Simazine), herbicide (bareground)
 Pramitol® (Prometone), herbicide (bareground)
 Atritol® 8P, 80W, herbicide (bareground)
 2,4-D, 2,4,5-T, herbicide (bareground)
 Ammate®, herbicide (bareground)

Bolens, Division of FMC Corporation, 215 S. Park St., Port Washington, Wisconsin 53074

Bolens Husky, tractor, 18 hp, hitches for 35 separate attachments, hydro static transmission, collar-locking PTO system, two cylinder engine

Bowie Industries, Inc., P.O. Box 931, Bowie, Texas 76230

Hydro-Mulcher, used in sprigging, seeding, mulching, fertilizing, insect control and weed control

Bridgeport Implement Works, Inc., 60 Rachel Drive, Stratford, Conn. 06497

Pixtone, mechanical stonepicker, trailer unit for use with tractor to remove surface stone before seeding

Briggs & Stratton Corp., P. O. Box 702, Milwaukee, Wisconsin 53502

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Brighton By-Products Co., Inc., P.O. Box 23, New Brighton, Pa. 15066

Experimental Irrigation tubing, ooze system, porous plastic

Brillion Iron Works, Inc., 200 Park Ave., Brillion, Wis. 54110

Turf-Maker, grass seeder, crushes, seeds and rolls in one pass

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Terra-Scaper, landscape rake; rakes, windrows, backfills, spreads, grades, levels, finishes seedbed; 5 angle position, 6 ft. and 8 ft. width

Brouwer Turf Equipment Ltd., RR 1, Keswick, Ontario, Canada

Sod Harvester, cut, roll and load up to 1300 sq. yds. of sod per hour in one operation

The Broyhill Company, North Market Square, Dakota City, Nebr. 68731

Sprayer, piston pump with mechanical agitation and centrifugal or roller pump with bypass agitation, 8-1000 gallons

Buckner Sprinkler Co., P.O. Box 232, Fresno, California 93708

Buckner sprinklers, irrigation equipment
 Febco valves, backflow prevention
 Binar controllers, auto., manual controllers

Buffalo Turbine Agricultural Equipment Co., Inc., Industrial Place, Gowanda, N.Y. 14070

Mity Mite, sprayer-duster, backpack
 Sonic ULV sprayer, for mosquito and fly control
 Turbine D, duster
 Buffalo Turbine, sprayer-duster, multipurpose unit, Models BS, C, FS, J3BS, FST-3, K, KULV

Bunton Co., 4303 Poplar Level Rd., Louisville, Ky. 40213

Lawn-Turf Equipment, mowers, rotary

E. F Burlingham & Sons, P.O. Box 217, Forest Grove, Oregon 97116

Bonnieblue™, bluegrass seed

C

C. & I. Manufacturing, Inc., Warsaw, Indiana

De-Ender, tool to remove heads of barrels and drums

Samuel Cabot, Inc., One Union St., Boston, Mass. 02108

Tree healing paint, heals tree wounds, stops rot, prevents sap evaporation

E. L. Caldwell & Sons, Inc., 3204 Agnes St., P.O. Box 9316, Corpus Christi, Texas 78408

15' Interstate, rotary mower
 Challenger, rotary mower, 5 ft. and 6 ft.
 Contour Flail, flail mower
 Shark 90', flail mower
 Barracuda, flail mower
 Brush Beaver, rotary mower, 5 ft. and 6 ft.

Cal-Turf, Inc., 5417 Santa Clara Ave., Camarillo, Calif. 93010

Cal-Turf, sod and stolons

CareTree Systems, Box 347, 7030 Huntley Rd., Worthington, Ohio 43085

Transplanter, tree transplanter mounted on tractor or 4 wheel loader

Century Engineering Corp., 221 4th Ave. S.E., Cedar Rapids, Iowa 52401

Sprayers, mist blower, boom, handgun, lawn and garden, tanks

High pressure washer, portable

The Champion Company, 400 Harrison St., Springfield, Ohio 45501

Doo-All, trailers (roll-dump, flat bed and wagon bed)

R. E. Chapin Mfg. Works, Inc., 29 Liberty St., Batavia, N.Y. 14020

Sprayer, compressed air, slide, or wheel mounted
 Duster, plunger or rotary

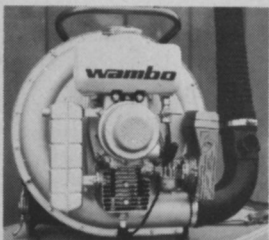
Charles Machine Works, Inc., P.O. Box 66, Perry, Oklahoma 73077

Ditch Witch, trencher
 Ditch Witch, vibratory plows
 Ditch Witch, backhoe (trencher mounted)
 Roto Witch, boring unit (hydraulic)
 Ditch Witch, earth saw

Chemagro Division of Baychem Corp., P.O. Box 4913, Hawthorn Rd., Kansas City, Missouri 64120

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 Baygon® 70% WP, insecticide
 Dasanit® 15G and SC, nematicide
 Dylox® 80% WP and LS, insecticide
 Guthion® WP and SC, insecticide
 Dexon®, fungicide
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- Multi-Worker brush cutter, weed breaker & hedge trimmer

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UNIONDALE, NEW YORK 11553

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Entex®, insecticide

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Dibrom 8 EC naled, insecticide
Diquat diquat dibromide, herbicide, aquatic
Paraquat CL paraquat dichloride, herbicide, contact
Difolatan 4 flowable (difolatan), fungicide, broad spectrum
Isotox, insecticide
Orthocide (captan products), fungicide, broad spectrum
Volik Supreme (oil), insecticide, miticide

Ciba-Geigy Corporation, Agricultural Division, Saw Mill River Road, Ardsley, N.Y. 10502

AAtrex® 80W, atrazine, herbicide, turf for sod and noncropland, pre- and postemergence
Atratul® 80W, atrazine, herbicide, nonselective, bareground
Atratul® 8P, atrazine and sodium chlorate and sodium metaborate, herbicide, nonselective, bareground
Princep® 80W, simazine, herbicide, selective and non-selective depending on rates
Princep® 4G, simazine, herbicide, granular
Pramitol® 25E, prometon, herbicide, bareground, liquid emulsion
Pramitol® 5PS, prometon and simazine, herbicide, bareground, pelleted
Sarolex®, Diazinon, nematicide, insecticide
Diazinon® 80W, diazinon, insecticide, also available in dust, emulsifiable concentrate, granular, oil solution, emulsifiable solution formulations

Clark Equipment Co., Buchanan Plant, Buchanan, Michigan 49107

Forklifts

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Cleary's 3336™ Systemic Turf Fungicide
Bromosan™ Systemic Turf Fungicide
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Cad-Trete, fungicide
MCP and 2,4-D, herbicide
Super methar, herbicide
Tru-Green, liquid chelating agent
Greenzit (turf and tree), natural colorant

Colloidal Products Corporation, P.O. Box 621, Petaluma, Calif. 94952

Bio-Film®, spreader, sticker
Buffer-X®, spreader, activator, buffer
Compex®, compatibility agent for liquid fertilizers
Fomex®, foaming spray adjuvant and spreaderactivator for herbicide sprays
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Multi-Film X-77, non-ionic spreader-activator
Nu-Trex, spreader-nutrient-buffer
Regulaid, spreader-activator for growth regulator sprays
Solvaid, spreader-stabilizer for oil sprays
Tronic, spreader-activator

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Boom Dye-Marker, marks areas treated
Wat Sol Oil, lubrication, preservation, storage oil
Auger, Model S.S., 4 inch, 12 volt for materials handling

Cuts twice as fast as most lawn tractors, hugs the ground for hillside safety



NATIONAL 68-inch Triplex

Mows a 68-inch swath at speeds up to 4 miles per hour, a half acre in 15 minutes.

It's a turf-professional type mower, with three powered, free-floating reels that follow ground contour. It shears grass cleanly; doesn't leave unsightly "tip burn" as rotaries often do.

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Other models from 25 to 84-inch cut.

Write for information.



NATIONAL MOWER COMPANY

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Phone: 612/646-4079

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Multi-knife, soil injection for application

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Hydro Mulch Fibers, turf establishment
Turf Establishment Blanket, turf establishment
Erosion Control Netting, erosion control
Turf Protection Blanket, turf protection

Creative Sales, Inc., 200 South Main, Fremont, Nebraska 68025

Medicaps® tree systems, systemic trunk implants (trees)

Curtis Dyna-Products, P.O. Box 297, Westfield, Indiana 46074

Back Pack BP-145, dispensing equipment
Dyna-Fog, dispensing equipment

Cushman Outboard Marine Corporation, P.O. Box 82409, Lincoln, Nebraska 68501

Turf-Truckster, turf vehicles, top dresser, spiker, sprayer, cyclone spreader, personnel and light burden hauling

D

Ross Daniels, Inc., 1720 Fuller Road, West Des Moines, Iowa 50265

Root Feeders, 3 per kit; ganged together with two 6 ft. lengths of hose and fittings. Kit includes 240 high nitrogen cartridges

Davey Tree Expert Co., Kent, Ohio 44240

Tree nursery, 150 varieties of shade and ornamentals
Tree service, nationwide and Canada representation

Dedoes Industries, Berkley, Michigan

Aerator

Deere & Co., John Deere Equipment, John Deere Administrative Center, John Deere Rd., Moline, Ill. 61265

Tractors, a model and horsepower rating in every class from smallest yard to industrial uses
Mowers, push, riding, self-propelled, tractor
Skid-Steer loader, two models, 70 and 170, 25 and 37 hp
Grounds maintenance tractor, Model 820, 31 hp, belly mounted mower, cuts 6 ft. swath
Tools, 237 different tools for shop, work and home
Roto tillers
Lawn sweepers
Blades
Trailers
Snow throwers
Chain saws

Delavan Manufacturing Co., 88 4th St., West Des Moines, Iowa 50265

Nozzles, fan, flood, disk, whirl

DESA Industries, Inc., 25000 S. Western Ave., Park Forest, Illinois 60466

Remington Chain Saws, gasoline, electric and pneumatic driven

Diamond Shamrock Chemical Co., 300 Union Commerce Bldg., Cleveland, Ohio 44115

Dacamine® herbicide
Dacthal® herbicide
DSMA herbicide
Daconate® herbicide
2,4-D herbicide
2,4,5-T herbicide
Silvex® 2,4-D, herbicide
2,4-D granules, herbicide
Aqua 2,4-D granules, herbicide
Daconil 2787®, fungicide
Dacagin® spray additive, drift retardant

Dico Co., Inc., Material Handling Division, P.O. Box 429, York, Pa. 17405

Unloaders, hydraulic boom type

J. J. Dill Co., P.O. Box 788, Kalamazoo, Mich. 49005

D-Lete, herbicide, bareground, liquid and granular
Kleen Turf, herbicide, selective, broad-leaved plants

The C. B. Dolge Company, 11 Ferry Lane, West, Westport, Connecticut 06880

Tote-Weed Killer, herbicide, bareground
Penetrate, soil conditioner
Lake Dye, non toxic dye for water
Selextol, insecticide, turf
EWT Plus, herbicide, elective MCPP plus 240
Boost, solvent detergent cleaner
Lapping Soap, soap for use in lapping compound

Dow Chemical USA, P.O. Box 1706, Midland, Michigan 48640

Formula 40, herbicide
DMA-40, herbicide
Dowpon®, herbicide, non-selective
Dowfume® MC-2, fumigant
Dursban® 2E, insecticide
Fumazone® 86, fumigant
Zectran® 2E, insecticide
Dow General Weed Killer, herbicide
Esteron®, herbicide
Kuron®, herbicide
Premerge®, herbicide

DriAll, Inc., Box 309, Attica, Indiana 47918

Levler, soil leveler
Scarifer, landscape leveler
Air Curtain Destructor, brush and tree burner

E. I. Du Pont de Nemours & Co., Inc., 1007 Market St., Wilmington, Del. 19898

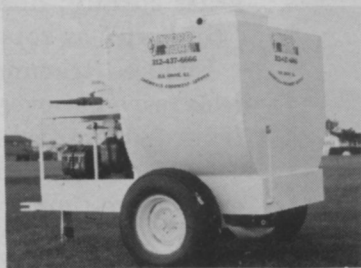
Hyvar® X bromacil weed killer, Hyvar® X-L, (liquid) bareground
Krovar® I, weed killer, bareground
Karmex® diuron weed killer, bareground, preemergence
Ammate® X weed and brush killer, contact
Tersan® LSR, turf fungicide
Tersan® 1991, turf fungicide
Tersan® SP, turf fungicide

E

Economy Tractor, 1005 Anoka Ave., Waukesha, Wis. 53186

Tractor, all gear drive
Mower, rotary, mounted under tractor, 60 inches

Why Own A HYDRO-TURF SPRAYER



VERSATILITY

- Grows Grass 5 Days. Full Turf 25 Days
- Seed, Fertilize Up To 5 Acres in 30 Minutes
- Hydro-Mulch & Sprigs
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Tri-Cide®, insecticide, systemic

Balan® benefin, herbicide, preemergent

Treflan® trifluralin, herbicide, preemergent

Dymid® diphenamid, herbicide, preemergent, liquid and granular

Parnon®, fungicide

Pipron®, fungicide, liquid concentrate

Erickson Corporation, 211 St. Anthony Blvd., N.E., Minneapolis, Minn. 55418

Erickson, hydrostatic drive compact front end loader

Eversman Mfg. Company, Curtis at Fifth St., Denver, Colorado 80204

Eversman, land leveler

Excel Industries, Inc., Box 385, Hesston, Kansas 67602

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E-Z Rake, Inc., 1001 S. Ransdell Rd., P.O. Box 506, Lebanon, Indiana 46052

Thatcher, spring tine dethatching machine, walk behind and tractor mounted

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F

Faesy & Besthoff, Inc., 143 River Road, Edgewater, N. J. 07020

F & B Lawn & Turf Fungicide, granular, combo of Dyrene and maneb

F & B Aspon Chlordane, insecticide, broad spectrum granular and sprayable

F & B Eptam 2.3, herbicide, granular, preemergent

F & B Sevin carbaryl, insecticide, granular, flowable, dust and wettable powder for mulations

Fairmont Hydraulics, 415 North Main Street, Fairmont, Minnesota 56031

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Pruning saws, saws, manual

Farris Chemical Company, 7213 Kingston Pike, P.O. Box 10126, Knoxville, Tennessee 37919

Chemical Feed Pumps

Ferguson Fumigants, Inc., 93 Ford Lane, Hazelwood, Missouri 63042

Zytox Gelled Soil Fumigant, gelled methylbromide

Ferry-Morse Seed Co., P.O. Box 100, 111 Ferry-Morse Way, Mountain View, California 94040

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Ferti-Feeder, 3973 East Lay, Des Moines, Iowa 50306

Ferti-Feeder, tree fertilizer injector through augers

Ferti-Feed, fertilizer

Ferti-Sulfur, fertilizer

Ferti-Iron, fertilizer

Ferti-Feeder Auger

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Finn Equipment Company, 2525 Duck Creek Rd., Cincinnati, Ohio 45028

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Super Hydroseeder, seeding equipment

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Bantam Mulch Spreader, equipment for mechanical spreading of vegetative mulch

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Diluex attapulgit, powdered clay carrier

Min-U-Gel 200 attapulgit, suspending clay for fluid fertilizer

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Ford Tractor Operations, North America, 2500 E. Maple, Troy, Michigan 48084

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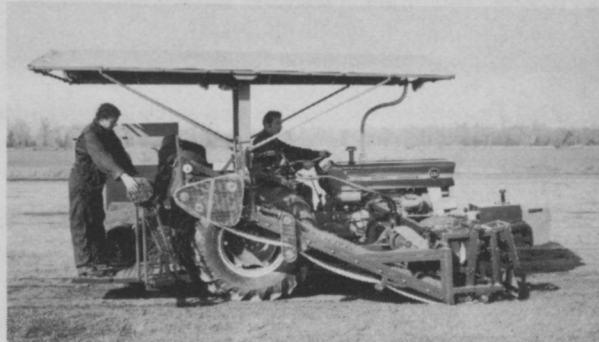
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- Champion and Chapin, chemical applicators, dusters
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- Friend Parkkraft, litter receptacles
- Willson, dust masks
- Friend, mistblowers, nozzle parts
- Uniroyal, protective clothing
- Friend Orchardkraft, pruners
- Friend, pumps
- Hannay, reels, hose
- Willson, respirators, safety equipment
- New Draulics, saws, chain
- Seymour Smith, saws, manual
- Friend Orchardkraft, power saws, shears
- Friend, spray booms, spray guns, spray nozzles, complete, disk whirles
- Friend, spray pumps, sprayer, bifluid, boom
- Friend Orchardkraft, sprayers, cart or wheelbarrow type, hand, knapsack
- Friend, spray tanks, sprayers, hose end, complete power unit sprayers

Fuerst Brothers, Inc., P.O. Box 271, Rhinebeck, N.Y. 12572
Flexible tine harrows

G

Gabriel Chemicals Ltd., 60 E. 42nd St., New York, N.Y. 10017

- Gabriel Malathion, insecticide, liquid and WP
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- 10 Series Spreader, 6-8-10-11-foot spreader and seeder
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- Hort applicator, chemical applicator for tillage equipment
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Garber Seeders, Inc., St. Paris, Ohio
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G & H Products, Inc., St. Paris, Ohio 43072

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Trimec Bentgrass herbicide, herbicide, postemergence
Perma-Kill Plus, herbicide

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Grass seed

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- Brom-O-Gas, soil fumigant
- Soilbrom 40, fumigant
- Soilbrom 85, fumigant
- Chlor-O-Pic, insecticide fumigant
- Terr-O-Cide 15, fumigant
- Terr-O-Cide 30, fumigant
- Terr-O-Cide 30-D, fumigant
- Terr-O-Gel 67, fumigant

Greenlife Products Company, Inc., P.O. Box 72, West Point, Virginia 23181

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- Pine bark Deco nuggets, decorative bark
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- Top soil, soil improvement
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H

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Sprayers, complete power unit
Sprayers, compressed air
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Tanks, spray

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Howard Rotavator, seedbed preparation

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Market-Time, Inc., P.O. Box 294, Northbrook, Illinois 60062
Online Challenger Mark II, chain saw
Online Yard-arm, circular saw on a 6 ft. shaft

Marlow Pumps Div., ITT Bell & Gossett, Inc., P.O. Box 200,
Midland Park, N.J. 07432
Pumps

Mars Industries, Inc., 5209 West Broadway, Minneapolis,
Minn. 55429
Mars Chem-Spray, turf sprayer, 5 gal. capacity
Suburban Angle Broom, tractor attachable rotary
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Suburban Pick-up sweepers, tow-type turf pick-up
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Martindale Electric Co., 1375 Hird Ave., Cleveland, Ohio
44107
Protective Mask, mask for personal protection from non-
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Protective Eyeshield, over-spectacle type eyeshield, one-
piece plastic

Masonite Corporation, 29 N. Wacker Dr., Chicago, Illinois
60606
Fibrex Root Insulator/Weeder, ¼ to ¾ pine bark im-
pregnated with a bio-degradable, selective, pre-emergent
herbicide.

Massey-Ferguson, Inc., 1901 Bell Ave., Des Moines, Iowa 50315

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MF 12G, garden tractor 12 hp
MF 10, garden tractor 10 hp
MF 8H, garden tractor 8 hp
MF 7, garden tractor 7 hp
MF 6, riding lawn mower 6 hp
MF 5, riding lawn mower 5 hp
MF 310, self-propelled rotary mower 3.5 hp
MF 210, push rotary mower 3.5 hp
MF 228, snow blower 8 hp
MF 255, rotary tiller 5 hp
MF 254, rotary tiller 4 hp

Master Sprayers, Inc., 1511 W. 2nd St., Pomona, Calif. 91766
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Washing unit, high pressure

Mathews Company, Crystal Lake, Illinois 60014
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J. J. Mauget Co., P.O. Box 3422, Burbank, Calif. 91504
Mauget, tree injectors
Inject-A-Min, nutrients
Inject-A-Cide, insecticides
Mauget Capsules, fungicide, benomyl

M-B Company, 1615 Wisconsin Ave., New Holstein, Wis. 53061

M-B Fitchburg brush chipper, brush and limb chipper
Rotary sweepers, tractor and loader mounted
Refuse compactor, mobil compactor, tow type

McCulloch Corp., 6101 W. Century Blvd., Los Angeles, California

Chain saws, Power Mac 6A, Mac 10-10A, Pro Mac 60, 7-10A, SP-80, Super 250, SP-125, 6-70, 660; Mini-Mac electric (Models 1, 6, 6A)
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McDonough Power Equipment, Inc., McDonough, Georgia 30253

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Mower, reel, self-propelled

McLaughlin Gormley King Co., 1715 S.E. Fifth St., Minneapolis, Minnesota 55414

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Melroe Division of Clark Equipment, Gwinner, North Dakota 58040

Melroe M-371 Bobcat Loader, 4 wheel drive, front end loader with landscape attachments
Melroe M-610 Bobcat Loader, 4 wheel drive, front end loader with landscape attachments
Melroe M-970 Bobcat Loader, 4 wheel drive, front end loader with landscape attachments

Meinhardt Products Div., 2401 Gardner Rd., Broadview, Illinois 60153

Weed Out, herbicide, selective

Melnor, Turf Irrigation Division, 1 Carol Place, Moonachie, New Jersey 07074

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Mertect® 160, fungicide, wettable powder
Mertect® 360, fungicide, wettable powder
Hormodin®, indole-3-butyric acid, root inducing substance
Gibrel® gibberellic acid, plant growth substance
8-Hydroxyquinoline Citrate Oxine Citrate, flower preservative

Merion Bluegrass Association, 101 Park Ave., New York, N.Y. 10017

Merion Kentucky Bluegrass

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N

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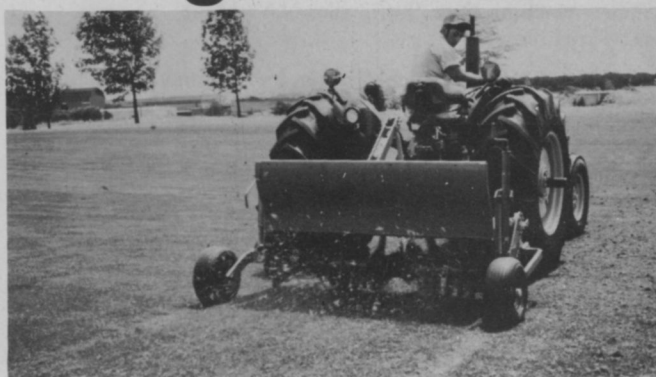
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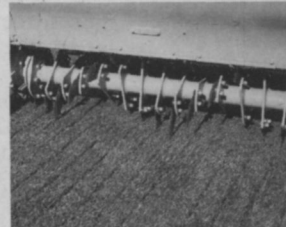
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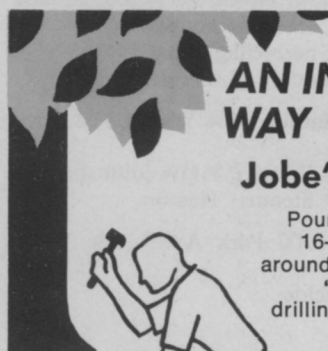
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 Royer Powerscreen, vibrating screen
- Ryan Equipment, Outboard Maine Corporation, P.O. Box 82409, Lincoln, Nebraska 68501
 Ryan Turf Equipment, mowers, rotary and flail; aerators, spikers, ground grooming equipment
- Joseph T. Ryerson & Son, Inc., P.O. Box 8000-A, Chicago, Ill. 60680
 Landscape Edging, steel
- S**
- S & D Products, Inc., P.O. Box 66, Prairie du Chien, Wisconsin 53821
 Eezy Grow-Root contact Paket, fertilizer, slow release
- S & H Industries, Inc., Cleveland, Ohio
 Tailgate, for pickups, electric-hydraulic, handle loads up to 1000 lbs.
- Sabre Saw Chain, Inc., Third Ave. & Sabre Drive, Niagara Falls, New York 14304
 Sabre Saw Chain
 Sabre Guide Bars
 Sabre Sprockets
 Sabre Wedges
 Sabre Files
 Sabre Accessories
- Safeline Products, P.O. Box 550, Putnam, Conn. 06260
 Respirators (all types), lung protection
 Safety Glasses and goggles, eye and face protection
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 Hard hats and caps, plastic safety hats and caps
- Safety Test & Equipment Co., Inc., P.O. Box 898, Shelby, N.C.
 Wood Chuck®, chipper, blades are V-grooved, shallow blade angle to slice chips away, mounted on 2-wheel trailer
- Schutt's Equipment Co., Birmingham, Michigan
 Backhoe Digger
- M. J. Scott Co., P.O. Box 1097, Hutchinson, Kan. 67501
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- The O. M. Scott & Sons Co., 160 Main St., Marysville, Ohio
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 Pro-Turf™ field fertilizer
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 Pro-Turf™ insecticide
 Pro-Turf™ fungicide
 Spot Weeder, herbicide
 Super Halts Plus, herbicide
 Super Turf Builder Plus M, fertilizer

Sea Guard, Inc., 1501 Reybold Drive, New Castle, Del. 19720
 N-Bar™, floating barrier to hold back aquatic vegetation

Seed Production Introduction Corp., P.O. Box 923,
 Minneapolis, Minnesota 55417

Pennstar Kentucky Bluegrass, turfgrass seed
 Pennfine Perennial Ryegrass, turfgrass seed

Selma Trailer and Mfg. Co., P.O. Box 120, Selma, Calif. 93662
 Trailers, hydraulic; 4x8, 6x8, 6x12 ft., drive or push load
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 Lifts, scissors type, triple-tier, Model SM-41

Servis Equipment Co., Box 1590, Dallas, Texas 75221
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 Seco Jr. models; curved blades cut and roll soil
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 dependent gear boxes, wings raise hydraulically
 Saturn V and VI, mower, rotary, PTO driven 5-6 ft. cut
 Little Rino, landscape rake, 2 models
 Gold Star, digger and utility crane

Sewerage Commission of the City of Milwaukee, P.O. Box
 2079, Milwaukee, Wisconsin 53201
 Milorganite fertilizer, fertilizer slow release

Seymour Smith & Son, Inc., 900 Main St., Oakville, Conn.
 06779

Garden Tools, pruning shears, grass shears, hedge shears,
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Shell Chemical, 2401 Crow Canyon Rd., San Ramon, Calif.
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 Nemagon®, insecticide fumigant

The Sherwin-Williams Co., 101 Prospect, Cleveland, Ohio
 Karbam® Black ferban, fungicide
 Mulsoid Sulfur Micronized Wettable Sulfur, fungicide
 Sherwin-Williams Arsenate of Lead, insecticide

Side-Winder Plant, Div. of FMC Corporation, P.O. Box 818,
 Minden, La. 71055
 Leveler, land
 Tillers

Sierra Chemical Company, 37650 Sycamore St., Newark,
 Calif. 94560

Agriform Fertilizers, slow release 16-7-12 (+ iron)
 Agriform Planting Tablets, landscape fertilizer
 Agriform Container Tablets, fertilizer for feeding woody
 and herbaceous plants in containers

Sikorsky Aviation Div., United Aircraft Corp., Stratford,
 Conn.
 Aircraft, helicopter

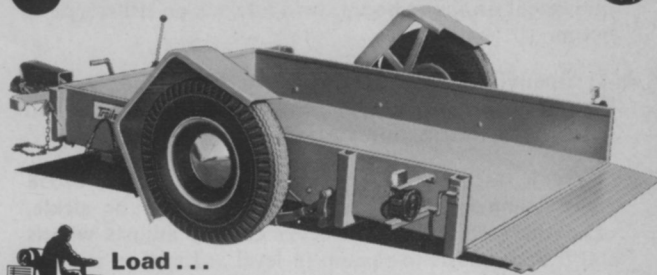
Simplex Manufacturing Co., 5224 N.E. 42nd Ave., Portland,
 Oregon 97218
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Simplicity Mfg. Co., Inc., Spring St., Port Washington,
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Skaggs Turf Equipment Co., Canfield, Ohio
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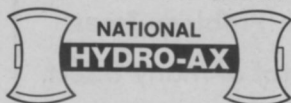
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Hawk Sprayers, sprayers

Solo Motors, Inc., P.O. Box 5030, 5100 Chestnut Ave., Newport News, Virginia 23605

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Newport, blower Model 430 5 hp, mini Model 410 3 hp

Chain Saw, Model 610 3 SAE hp, Model 620 4 SAE hp, Model 650 6 SAE hp, Model 635 8 SAE hp, Model 660 7 SAE hp

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Water Pump, 6.5 SAE hp, Model 801
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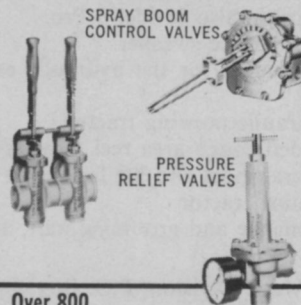
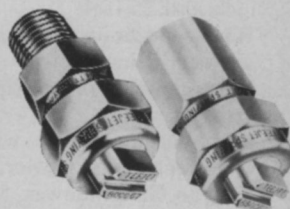
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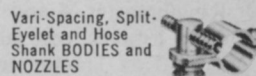


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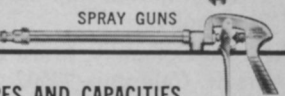


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Twin City Seed, 500 30th Ave. N.E., Minneapolis, Minnesota 55418

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Uniroyal Chemical, Div. of Uniroyal, Inc., Bethany, Conn. 06770

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MH-30® maleic hydrazide, growth regulant

Royal MH-30®, growth regulant

Omite®, insecticide; wettable powder, dust, liquid

Slo-Gro®, growth regulant

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Hibor® C, nonselective herbicide

Polybor-Chlorate®, nonselective herbicide

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Velsicol Chemical Corporation, 341 East Ohio Street, Chicago, Illinois 60611

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Blitz Fog®, propane foggers
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Vistron Corporation, 1650 Midland Bldg., Cleveland, Ohio 44115

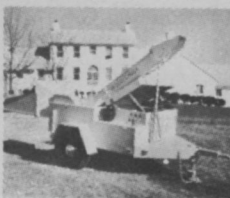
Urea, fertilizer
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irrigation canals and water holes on
farms, golf courses, nurseries and parks.

MILWAUKEE, WIS. Scientists at Great Lakes Biochemical Co., Inc. have recently received registration from the EPA for ALGIMYCIN PLL-C.

A new formulation, ALGIMYCIN PLL-C remains soluble over a wide pH range and is most effective when applied directly to the algae mats, either by spray on the surface or injected on the bottom of the body of water.

ALGIMYCIN PLL-C is not toxic to most common fresh water and tropical fish, desirable aquatic plants, animals, birds or pets, when used as directed. However, it is such

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Spray Nozzles
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Sod, Warren's A-34 Bluegrass
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Sprayer/refuse truck, complete unit, high-pressure pump, 40 ft. hose, 100 gallon storage tank, equipment storage compartment
- Wayne Manufacturing Co., 1201 E. Lexington St., Pomona, California 91766
Stump King, stump remover, dual cutting wheels
Wayne Brush Chipper, brush chipper, 6-sided disposable bed knife, hydraulic safety brake
Broom, disc type, polypropylene construction
- Weather-matic Division, Telsco Industries, P.O. Box 18205, Dallas, Texas 75218
Control, electric, irrigation
Valve, solenoid
Rotary head
Spray head
Nozzles
Accessories
- H. N. Webster, Mfg., P.O. Box 623, Sebring, Florida 33870
Webstermatic, irrigation, quick coupling riser valves
- WD-40 Company, 5390 Napa Street, San Diego, California 93128
WD-40, lubricant, stops squeaks, loosens rusted parts, protects metal, displaces moisture
Weldex Corporation, Grafton, Mass.
Crane, for pickup trucks, lifts up to 2500 lbs., full circle swing, 25 ft. cable
- Welsh Mfg. Co., 9 Magnolia St., Providence, R.I. 02909
Pesticide Respirators, safety equipment
Ammonia respirators
Dust Respirators
Goggles
Safety Caps
- West Chemical Products, Inc., 42-16 West St., New York, N.Y. 11101
Assault, herbicide, non-selective, bareground
- Western Products, Div. Douglas Dynamics Corp., 1234 North 62nd St., Milwaukee, Wisc. 53213
Roll-Action™ Blade, snow plowing
- Weyerhaeuser Company, Tacoma, Wash. 98401
Silva Fiber, mulch for hydro-seeding
PFM, mulch for hydro-seeding
- Wheel Horse Products, Inc., 515 W. Ireland Rd., South Bend, Indiana 46614
Tractor, lawn and garden; 10, 12, 14, 16, 18 hp automatic; GT14 automatic; 8, 10, 12, 14 hp eight speed; 8 hp four speed; Ranger 700 and 800; Rider R-26
Rotary Mower, 26, 36, 42, 48 inch side discharge, 60 inch rear mount (PTO)
Grader Blade, 40 inch
Tiller, 36 inch and 38 inch
Sickle, 42 inch and 50 inch
Disc, 32 inch
Harrow
Cultivator
Utility Wagon
Dump Trailer
Lawn Roller, 32 inch
Aerator, 36 inch
Lawn Sweeper, 31 inch and 38 inch
Dozer Blade, 39, 42, 54 inch
- Williamstown Irrigation, Inc., Williamstown, N.Y. 13493
Irrigation riser valves
Irrigation sprinkler heads
Irrigation systems, complete
- Willmar Manufacturing Co., Wilmar, Minn.
Spreader, pull-type, floatation tires, spreads up to 1½ tons per load
- Willson Products Div., Ray-O-Vac Co., 2nd and Washington Aves., Reading, Pa.
Masks, gas
Masks, dust
Respirators
Safety equipment
Helmets
- Witco Chemical Corporation, Organics Division, 277 Park Ave., New York, N.Y. 10017
Emcol 14, spreader sticker
Emcol H-53, H-54, H-55, spray oil emulsifiers
Emcol H-A, H-2A, H-B, H-C, HJP-1, emulsifiers for liquid fertilization
- Winru Chemical & Sales Co., 923 State Line, Kansas City, Missouri 64101
Baygon, insecticide
Synergized Pyrethrins, insecticides
Chlordane, insecticide
Malathion, insecticide
Diazinon, insecticide
Zectran, insecticide
Infuco Compression Sprayers, environmental protection chemical sprayer
Gas Masks, Mine safety, safety equipment
Phostoxin, fumigant
Infuco Motorized pumps, electric or gas pump units
- Winterlawn Chemical Corp., a subsidiary of Virginia Chemicals, Inc., 3340 West Norfolk Rd., Portsmouth, Virginia 23703
Winterlawn® Grass Color Concentrate, permanent pigmented, water-soluble emulsion color system for dormant vegetation; also in aerosol containers
- Wood Brothers, Inc. Oregon, Illinois
Mower, 3-point hitch, rotary, PTO driven, adjustable
- Wright Saw Div., Thomas Industries, 207 E. Broadway, Louisville, Ky.
Saws, chain
Saws, manual
Saws, power
- Yardman, The Leisure Group, Inc., Jackson, Mich.
Mowers

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Yazoo Power Mowers, rotary, lawn; push, self-propelled, rider

Yazoo Edger

York Rakes, Mill and Watson Sts., Unadilla, N.Y. 13849
Rakes (York), landscape equipment

Zonolite, W. R. Grace & Co., P.O. Box 517, Travelers Rest, S.C. 29690

Vermiculite, soil conditioner

Horticultural Perlite

Terra-Lite

Redi-Earth, synthetic soil

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Tidewater And Metropolitan Shade Tree Conferences Discuss Benlate Fungicide

Mid-Atlantic commercial and municipal arborists, plus other interested shade tree people, participated in two conferences during November. The Tidewater Conference met at the Norfolk, Virginia, Botanical Gardens, while the Metropolitan Meeting was held in Arlington, Virginia.

At both meetings, Dr. R. J. Stipes, plant pathologist, Virginia Polytechnic Institute, and Dr. T. C. Ryker, product development manager, E. I. DuPont de Nemours & Co. Inc., discussed the use of Benlate benomyl fungicide as an aid in the prevention and control of Dutch Elm Disease.

Dr. Stipes related his studies on soil injection of Benlate, which conclude that more field studies might point to an additional promising approach to systemic disease control.

Dr. Ryker discussed current labeling of Benlate for elms, together with the several trunk pressure injection procedures now under study. He emphasized that the only trunk injection method presently approved by the Environmental Protection Agency is the Mauguet-type cup injection system. This system was demonstrated by Walter E. Money, President, Guardian Tree Experts, Inc., Rockville, Maryland.

Since data on Dutch Elm Disease control can only be evaluated each Spring from the previous season's

work, Dr. Ryker reasons that it is unlikely that any other system will be available soon.

A question regarding small bark wounds resulting from trunk injections was posed to Dr. Alex Shigo, Chief Plant Pathologist, Forestry Experiment Station, Durham, New Hampshire. Dr. Shigo was speaking at the Metropolitan Conference on his extensive work in effects of wounding on trees.

"While I have not worked on that question specifically," he said, "it appears that they would be somewhat like the wounds on sugar maples for syrup production. Sugar maples continue to do well and overcome these wounds. I feel that since the Mauguet wounds are minute in comparison, there should be no problem."

Plant pathologists from the University of Wisconsin had previously reported in their "Benlate Seminar Booklet" that their extensive work with injection tubes on elms has resulted in no serious injury to date.

Persons interested in becoming dealers of Mauguet products in the Washington, D. C. area are asked to attend a dealer's meeting to be held at the Marriott Twin Bridges Motor Hotel on Jan. 17 (adjacent to Washington National Airport at U.S. Route 1 and I-95).



Program speakers included Walter E. Money, president, Guardian Tree Experts, (l) Dr. T. C. Ryker, product development manager, Du Pont Company, (center); and Dr. R. J. Stipes, plant pathologist, Virginia Polytechnic Institute, (r).



Walt Money shows how easy it is to insert the Mauguet cup into a tree trunk.



Injection equipment needed to combat Dutch Elm Disease.

Green Industry Associations

New Officers New Programs New Action Reports

AMERICAN ASSOCIATION OF NURSERYMEN, INC.

230 Southern Building, 15th & H Streets, N.W.
Washington, D.C. 20005
Tel. (202) 737-4060

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Annual Meeting: July 14-18, 1973, Radisson Hotel, Minneapolis, Minnesota.

Highlights of '72: Membership reached 1980 with the number of new member applications received reaching a new high.

In the area of legislation, AAN has presented testimony to both sides of the Hill on agricultural appropriations, Forest Service appropriations, wage-hour legislation, pesticide legislation, Washington Youth Gardens appropriations, highway legislation, and others. Among the outstanding victories for ANN were: obtained exemption from OSHA for growers; helped block efforts to amend wage-hour law to raise minimum wage and remove seasonal overtime exemptions for nursery employees; was instrumental in regaining exemption for nursery stock from wage-price controls under Phase II at retail and wholesale levels after the government reversed their initial de-

cision and declared nursery stock, along with many other agricultural products, covered under wage-price controls after the first sale. New face on the staff — Leo Donahue, retired Marine officer, who replaced Richard Turney as legislative liaison.

Other activities: AAN conducted highly successful and well attended Management Seminar at Syracuse University — first in 8 years. Among a long list of publications generated from the AAN offices in 1972 were: a comprehensive "Direct Mail Advertising Summary"; a new monthly news bulletin to supplement the AAN Newsletter; a consumer-oriented poster-pamphlet, "More Pleasure From Your Plantings;" a Washington Youth Gardens brochure; 1972 edition of annual "Guide to Effective Advertising;" and "The Case for the Guilty Garden," an industry statement counteracting the misconceptions and misrepresentations about the supposed danger from "poisonous plants" — an authoritative document sent to members and key opinion makers all over the country.

1972 Washington Convention highlights include the introduction of 1972 Yearbook of Agriculture, "Landscape for Living," by Secretary of Agriculture Earl L. Butz, and a reorganization of AAN Board of Governors, the governing body of the Association.

1972 saw phenomenal growth for all umbrella groups — National Landscape Association, Wholesale Nursery Growers of America, National Association of Plant Patent Owners, Horticultural Research Institute. HRI published the valuable "Uniform Chart of Accounts" and 1971 Operating Cost Study, and research has begun on, among other things, a project which will attempt to show that man is "genetically programmed" to require an environment of green, growing things. A new association was formed designed to meet the needs of the retail segment of the industry. Called Garden Centers of America, member services are scheduled to begin January 1, 1973.

Green Survival continues to grow with Canada, England, Germany, and Holland adopting similar programs. A Green Survival Theme Song has been created and plans are being made for a Green Survival film.

Perhaps the most exciting program developed this year is the Nursery Industry Cooperative Advertising Program, a national marketing program designed to provide growers and retailers with an opportunity to accomplish effective consumer advertising on a national scale at a realistic cost. An incisive NICAP advertising manual, "Partners in Profit," is being sent to all AAN members for their use.

Program Plans For '73 and Forecast: In brief, AAN will continue its major programming; NICAP will be perfected and new information distributed for the Manual; Landscape Awards Program will be stepped up; more Management Seminars planned; expansion of member services to AAN as well as to all umbrella groups; and aggressive activity by the Garden Centers of America. The AAN will intensify its legislative efforts because it must . . . in the face of increasing Federal intervention in business and the growing consumer movement. Also, a closer coordination is planned with the Forest Service and Agricultural Research Service in the area of agricultural research. All in all, the future and its potential look quite

good for the industry, the AAN and its related association groups.

AMERICAN SOCIETY OF CONSULTING ARBORISTS

12 Lakeview Avenue, Milltown, New Jersey 08850
Tel. (201) 821-8948

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Annual Meeting: Feb. 15-17, Mountain Shadows Resort, Scottsdale, Arizona.

Highlights of '72: The program emphasized a study of tree evaluations as related to home, building and land appraisals and to land evaluations and eminent domain as presented by members of the American Institute of Real Estate Appraisers at the annual meeting. The Case History Committee completed the Field Report Form which is now available to members, and also enlarged its case history report filings. Members received current technical information on the effect of natural gas on trees and vegetation — it does kill trees! Advertising in national journals and trade papers was increased.

Program for '73: (1) Annual meeting will entertain papers and discussions by members of the American Institute of Landscape Architects, the Associated Landscape Contractors of America, the Society of American Foresters, and the Association of Consulting Foresters. Discussions will attempt to correlate activities of the ASCA with these other associations. (2) Information via speakers at the annual meetings and mailings to members will attempt to enhance their abilities as court witnesses involving cases dealing with trees.

AMERICAN SOD PRODUCERS ASSOCIATION

College of Agriculture & Environmental Science
Box 231
New Brunswick, New Jersey 08903
Tel. (201) 247-1766 Extension 1453

Dr. Henry W. Indyk, Executive Secretary

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Blue Grass Sod Farms, Inc., Hudsonville, Mich.; and Gerry Brouwer, Brouwer Sod Farms Ltd., Keswick, Ontario, Canada.

Annual Meeting: July 16-19, Holiday Inn, Denver, Colorado. Equipment Field Day at Richlawn Turf Farms — Host organization will be Rocky Mountain Sod Growers Association.

Highlights of '72: An outstanding summer meeting in Toronto, Canada hosted by the Nursery Sod Growers of Ontario. Exceptionally well organized and interesting tours of the sod industry in Ontario were conducted. Activities were concluded with a half-day field demonstration of sod harvesting equipment. National Guideline Specifications For Sodding were printed and received wide-scale distribution in response to requests from a wide range of turfgrass interests. An accounting system for sod producers was developed and will be made available.

Program for '73: Winter Meeting — February 18-24, incl. in Hawaii. Program will consist of a seminar on the topic of financial management to be presented by a recognized authority of finances. In addition, several organized tours are scheduled.

Forecast for '73: A strong demand for sod should continue throughout '73 if the encouraging economic forecasts come true. Increasing supplies of sod will adequately satisfy the strong demand. Price should remain about the same and possibly tend to be depressed with the development of surpluses. This will be a definite unhealthy development in the industry. With rising costs of production which are not being reflected in the sale price, the net return margin becomes dangerously low. It will become increasingly important to become more efficient in production. Furthermore, it is imperative for an individual sod operation to survive to adopt a record keeping and accounting system that will provide a financial analysis of the operation. Better business management presently is a major need in the sod industry. The development of an accounting system for sod producers by the ASPA should prove to be an invaluable contribution of the Association to the future of the sod industry.

GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA

3158 Des Plaines Ave., Des Plaines, Ill. 60018
Tel. (312) 824-6147

Conrad L. Scheetz, Executive Director

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Annual Meeting: Jan. 7-12, 1973, John B. Hynes

Civic Auditorium and Sheraton-Boston Hotel, Boston, Mass.

Highlights of '72: Four seminars were conducted. In addition, attendance at the annual International Turfgrass Conference and Show broke previous records. A new executive director was named to fill the vacancy left by Ben J. Chlevin. A decision was made to move the executive headquarters of the association to Lawrence, Kansas in the summer of 1973.

Program for '73: The second series of seminars will be instituted in the spring. This series will be on pesticides. The third series of seminars will involve the Operational Safety and Health Act of 1970.

Forecast for '73: The immediate goal is to integrate the forces at hand and organize the association under the management of the new executive director. Once a solid foundation is formed, the association will initiate new programs which include a membership drive, insurance program and a continuing educational program.

HYACINTH CONTROL SOCIETY, INC.

P. O. Box 508, Floral City, Fla. 32636

T. Wayne Miller, Jr., Secretary

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Annual Meeting: July 15-18, Monteleon, Hotel, New Orleans, La.

Highlights of '72: The name of the society did not change. The membership voted for a possible name change by mail ballot, but it was defeated at the annual business meeting. Release of a water hyacinth weevil in August was the first attempt to control this noxious aquatic plant with insects. The weevil is native to South America and is host specific. The White Amur has also been released in six isolated and tightly guarded ponds in various parts of Florida. Work is continuing in physiological and microbiological investigations to bring the aquatic weeds under control. Dr. Robert D. Blackburn, USDA, Ft. Lauderdale, Fla. has identified hydrilla in a pond in Iowa, near the Mississippi River. The growth of this weed

will be monitored throughout the coming year.

Program for '73: To license all persons, firms or corporations conducting aquatic plant control in public waters in the State of Florida under the new law that became effective Oct. 20, 1972.

Forecast for '73: The annual meeting will be held outside the State of Florida. This should be an excellent opportunity to witness the aquatic vegetation problems in another state. Program committee chairman, Dr. Alva Burkhalter, is planning a program for the meeting that includes progress reports in research projects and applied weed control work.

INTERNATIONAL PESTICIDE APPLICATORS ASSOCIATION, INC.

5600 SW Rosewood St., Lake Oswego, Oregon 97034

L. F. (Lew) Sefton, Executive Secretary

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Annual Meeting: August 15-18, 1973, Marriott Inn, Berkeley Marina, Berkeley, California 94710, Tel. (415) 548-7920

Highlights of '72: The transition from the only Regional Pesticide Applicator Association to the only representative National Organization is the prime accomplishment. As of this writing there are three chapters, located in Washington, Oregon and California. Organization is in progress for chapters in southern California and New York. Besides Chapter Members, there are currently Members at Large in Colorado, Florida, Idaho, Iowa, Kentucky, New Jersey, New York and Utah. Inquiries from other states, Canada and India are in the mill. This is a going concern.

In April 1972, IPAA started publishing a monthly paper, **The Professional Applicator**. This has been well received and seems a worthy vehicle for

gluing together the scattered applicators interested in themselves and their industry. A part time arrangement was made for an executive secretary. This, with the certain growth nationally, will lead to the hiring of a full time person soon. Because of the original application by IPAA for a review of the DDT issue by an advisory committee and a request for a public hearing, the end of 1972 may see the only live DDT label in the U.S. in the possession of an IPAA Associate Member, Crop King Chemical of Yakima, Wash. The original association request was filed through Crop King. Crop King this past year assumed all remaining financial responsibility, a burden off our organization. This is a separate action from that of the infamous Ruckelshaus decision. The Washington Chapter has still not lost the DDT fight in its State and is seeking registration for root weevil use.

IPAA adopted an emergency action resolution in 1972. As a condition of membership, each chapter pledges mutual aid to and by its members in cases of distress due to sickness or injury. Other benefits are in the mill.

Program for '73: (1) The Convention is moved up to August to allow for a family vacation while attending. (2) It will be hosted by the new California Chapter. This shows how rapidly applicators, hungry for association, can effectively organize. (3) Continued education, and the improvement of our industry through organized effort. (4) Education of the public that the truly safe and efficient way is with the licensed professional applicator.

Goal: Our enlargement into an international association capable of promoting our programs on an ever increasing front. We must make it our business that the public is never so mistakenly brainwashed again.

Forecast for '73: The pendulum has started its return stroke. Little by little the public will learn that it is the pesticide applicator who preserves the environment for them and makes a better habitat for wildlife. International Pesticide Applicators Association, Inc. will lead the way.

INTERNATIONAL SHADE TREE CONFERENCE, INC.

3 Lincoln Square
P. O. Box 71, Urbana, Illinois 61801
Tel. (217) 328-2032

E. C. (Cal) Bundy, Executive Secretary

Officers and Directors for '73: Dr. John A. Weidhaas, Jr., pres., Va. Poly Tech. Institute, Blacksburg, Va.; F. Lewis Dinsmore, pres. elect, Dinsmore Tree Service, St. Louis, Mo.; John Z. Duling, vice-pres., Duling Tree Expert Co., Muncie, Ind.; Dr. E. B. Himelick, exec. director, Ill. Natural History Survey, Urbana, Ill.; Dr. Dan Neely, editor, Ill. Natural History Survey, Urbana, Ill.

Annual Meeting: August 12-16, 1973, Sheraton Boston Hotel, Boston, Mass. Regional Chapter annual meetings: Ohio Chapter, January 21-25, Sheraton-Columbus Hotel, Columbus, Ohio; Penn-Del Chapter, January 25-26, Marriott Motel, Philadelphia, Pa.; Midwestern Chapter, February

6-8, Holiday Inn, 1926 W. Wisconsin Ave., Milwaukee, Wisc.; Southern Chapter, February 25-28, Sheraton Motor Inn, Fredericksburg, Va.; Western Chapter, June 17-20, Hotel Utah, Salt Lake City, Utah; Canada, April 5-6, Place Bonaventure, Montreal,

Highlights of 1972: Membership increase is continuing. I.S.T.C. processed more new individual members during 1972 than any previous year. Sustaining memberships of commercial firms and related associations is on the upswing. Southern California members staged a highly successful 1972 annual convention last August at Newport Beach, Calif. The attendance of 764 delegates consisted of members from all parts of the United States and Canada. The unique outdoor exhibitor area contained a record number of fifty commercial exhibits. Submitted the fourth and final research grant payment of \$4000 to the University of Wisconsin in support of the project titled "Effects of Transplanting on Physiological Responses and Growth of Shade Trees," under the direction of Dr. T. T. Kozlowski. The revised publication "A Standard Municipal Tree Ordinance" was printed and released. Requests have almost depleted the initial printing.

Program for '73: Will continue to encourage the establishment of an annual observance of National Arbor Day by the Federal government. Will select a future research project at an educational institution. Recipient will receive the I.S.T.C. Research Assistantship Grant. Will complete the revised edition of our publication entitled "Transplanting of Trees and Shrubs." Will begin making plans to observe the 50th anniversary of the I.S.T.C. at the 1974 annual convention in Atlanta, Ga. Will continue the dissemination of knowledge in the science and art of growing and maintaining shade and ornamental trees via our monthly and annual publications, and our regional and international meetings.

Forecast for '73: Few laws have produced as many aftershocks as the Occupational Safety and Health Act of 1970. Some think that it places too much responsibility on the employer and does not take into consideration the employee attitude. This Act will continue to have a great effect on the industry during 1973. The Urban Forestry Program of the U.S. Forest Service, when fully implemented and directed towards shade and ornamental tree problems of the cities, towns, villages and countries, will initiate more work for the qualified arborists. The professional arborist will benefit from increased research work and educational activity at the Federal and state levels.

NATIONAL ARBORIST ASSOCIATION

1750 Old Meadow Road
McLean, Virginia 22101
Tel. (703) 893-7347
Robert C. LaGasse, Executive Secretary

Officers and Directors for 1972: Robert Felix, President, Harder Services, Inc., Hempstead, New York; John A. Shullenbarger, 1st Vice-President, Gustin Gardens Tree Service, Inc., Gaithersburg, Maryland; W. Roland Shannon, 2nd Vice-President, Shannon Tree Company, Milford, Pennsylvania; Paul Ramsey, Secretary, N. G. Gilbert
(continued on page 86)

EDITORIAL (from page 9)

in developing noise abatement programs. This may be fine for big industry, but for a fewer than 15 man operation the services of this type of person is not economic.

The study also suggests operating only one piece of noise making equipment at a time, substituting belt drives for gears, dampening vibration, installing flexible mounts for motors, hoses or couplings, isolating the noise source and a host of other controls. If this fails, as it will most likely will in the case of chain saws and chippers, then the last alternative is to establish administrative controls. These would arrange work schedules for employees, rotate employees around the noise source, divide the work among several workers, and shut equipment down when the upper limit of duration for a high noise level is reached.

We submit that now is the time to be acting on this proposed study. The evidence in favor of adopting it is supported by data that leaves little to be questioned. We predict adoption of the study by OSHA. A word to the wise is sufficient.

insect report

INSECTS OF ORNAMENTALS

CONIFER APHID

(*Cinara canadensis*)

VIRGINIA: Taken on juniper in Montgomery County July 6, 1972. This is a new State record

CRAPEMYRTLE APHID

(*Tinocallis kahawaluokalani*)

MARYLAND: Very heavy and injurious to plant at Baltimore. Population included males, oviparous females, new eggs and viviparous females. Sexual forms rare.

CERAMBYCID BEETLE

(*Leiopus variegatus*)

NEW JERSEY: All stages very heavy under bark of large mimosa tree on property in Haddonfield, Camden County in June 1972. Mimosa so badly weakened by several years of frequent defoliation by *Homadaula anisocentra* (mimosa webworm) that tree was cut down. *L. variegatus* found when bark stripped from tree. This is a new State record. Larvae are known to occur in many varieties of hardwood. It is not known if this cerambycid has been found in mimosa previously.

TREE INSECTS

WHITE PINE APHID

(*Cinara strobi*)

SOUTH CAROLINA: Populations increased in white pine plantations in Piedmont area.

ELM LEAF BEETLE

(*Pyrrhalta luteola*)

NEW MEXICO: Damage heavy to Siberian elms at Farmington, San Juan County.

SOUTHERN PINE BEETLE

(*Dendroctonus frontalis*)

NORTH CAROLINA: Increased over Tusquittee Ranger District in Cherokee and Clay Counties. Population ex-



Officers who will serve the Central Plains Turfgrass Foundation for the coming year are Larry Runyon, Kansas City, Mo., vice president (at left); Dr. Ray Keen, Kansas State University, secretary-treasurer (standing); and Edmer Easley, Wichita, president. Both Keen and Easley were reelected at the annual meeting, which was held in conjunction with the annual KSU turfgrass conference.

panding rapidly. Survey revealed 60+ newspot infestations. Also problem in Randolph, Surry, Davie, Davidson, and Stanley Counties. ALABAMA: Established infestation killed 100+ Virginia pines along main highway near top of Cheaha Mountain State Park in Cleburne County. Recently emerged adults seen.

VARIABLE OAKLEAF CATERPILLAR

(*Heterocampa manteo*)

OKLAHOMA: Heavy infestation on oaks in Bryan County declined. Fully grown larvae left trees in Payne County. ARKANSAS: Specimens submitted from Benton County. Much lighter in northwest area than farther south. Attacked by diseases and parasites in most areas. WEST VIRGINIA: Larval damage heavy on about 300 acres of scattered red and black oaks in Hardy County.

TORTRICID MOTH

(*Archips semifervans*)

PENNSYLVANIA: Outbreak of past 6 years declining. Defoliation, over 1 million acres previous 2 years, decreased to 610,000 acres in 1972. Timber loss heaviest in State for many decades. Entire forests killed over large areas of Clearfield, Centre, Clinton, and Lycoming Counties.

OBSCURE SCALE

(*Melanaspis obscura*)

KANSAS: Heavy on bur oaks near Wichita, Sedgwick County. Overwintering nymphs averaged 400+ per square inch, many twigs and branches dead.

PINE NEEDLE SHEATMINER

(*Zelleria haimbachi*)

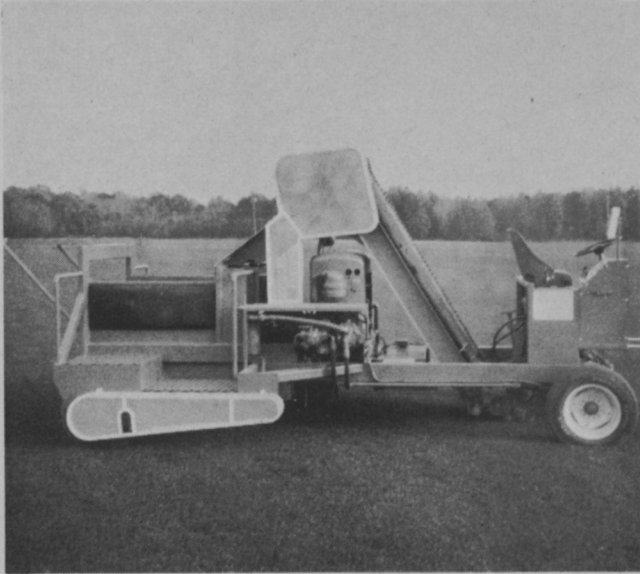
CALIFORNIA: Scattered infestations damaged ponderosa pines on Klamath National Forest in Humboldt drainage area. Some of better plantations affected. Active in Shasta-Trinity National Forest. Infestations to be checked in spring 1973 after new growth appears.

BENEFICIAL INSECTS

AN ENCYRTID WASP

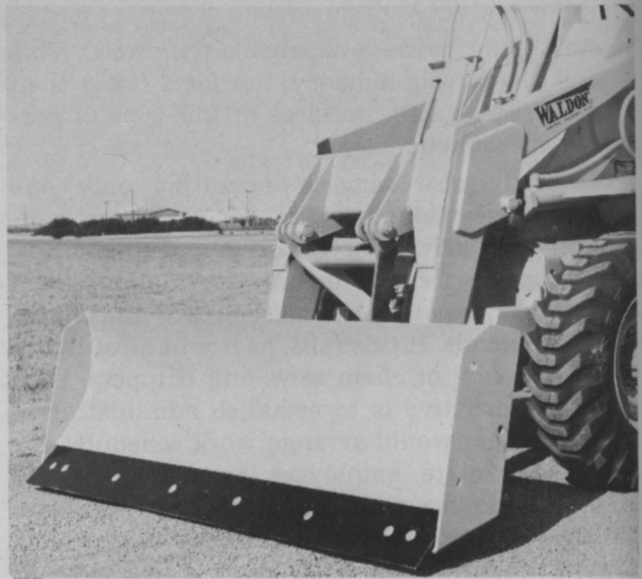
(*Ooencyrtus kuwanai*)

RHODE ISLAND: Released 60,000 against *Porthetria dispar* (gypsy moth) eggs in Providence County October 3. OHIO: Total of 10,000 specimens of this egg parasite of *Porthetria dispar* (gypsy moth) released in immediate area of Auglaize County where male moth previously trapped.



SOD HARVESTER: Princeton Manufacturing Co., Canal Winchester, Ohio

Model 4020 is a re-design of the former Princeton Model 180. It cuts slabs of sod 20 inches wide by 40 inches long and loads 50 yards per pallet on its self-contained forklift. This harvester is designed to produce 1500 yards of palletized sod per hour with a three man crew. Machine is powered by a 172 c.i. Ford industrial engine with full hydrostatic drive. Other features include standardized locally available parts, improved hydraulics and safety guarding. For more details, circle (701) on the reply card.



BLADE EQUIPPED LOADER: Waldon, Inc., Fairview, Okla.

A three-pin front boom mount holds this six foot wide dozer blade securely to the powerful, all hydraulic, 4-wheel drive tractor. No need to angle the blade because you steer it where you want it to go with the hinged tractor chassis, which articulates and oscillates to work in extremely close quarters. This arrangement, with power steering, not only gives tight turns, but also keeps all four wheels in full traction over rough terrain, curbs, debris, etc. On the boom, the dozer blade is raised, lowered or tilted by hydraulic control from the seat. The Waldon 5000 Dozer comes with a choice of seven engines. Standard features include 4-wheel hydraulic brakes, neutral-stop safety controls, gauges to monitor all vital functions and power steering. For more details, circle (702) on the reply card.



72 INCH ROTARY CUTTER: Massey-Ferguson Inc., Des Moines, Iowa

Here's a low-cost, 72 inch rotary cutter designed for average use where a heavy-duty cutter is not needed. The MF 68 has a solid, tire carcass tailwheel as standard equipment. Brush Hopper blade holder is also standard, as if floating top link which permits the tailwheel to rise without putting additional stress on the hitch. The gearbox is shock resistant malleable iron, packed with lifetime lubricant. Side skids are 42½ inches long for added endurance. Tailwheel boom is adjustable in 1¼ inch increments. For more details, circle (703) on the reply card.



HAND-HELD CONCRETE BREAKER: Charles Machine Works, Inc., Perry, Okla.

This all-hydraulic breaker eliminated the two main causes of excessive noise usually associated with jackhammers—the roaring compressor and explosive release of compressed air. Quick-couple hydraulic connections attach the tool to Ditch Witch models H12, J20, V30, R40, R60 and R65 trenchers and VP12 vibratory plow. The power input to the breaker is approximately 8 hp. The hydraulic recoil system lets the unit take the shock, not the operator. For more details, circle (704) on the reply card.



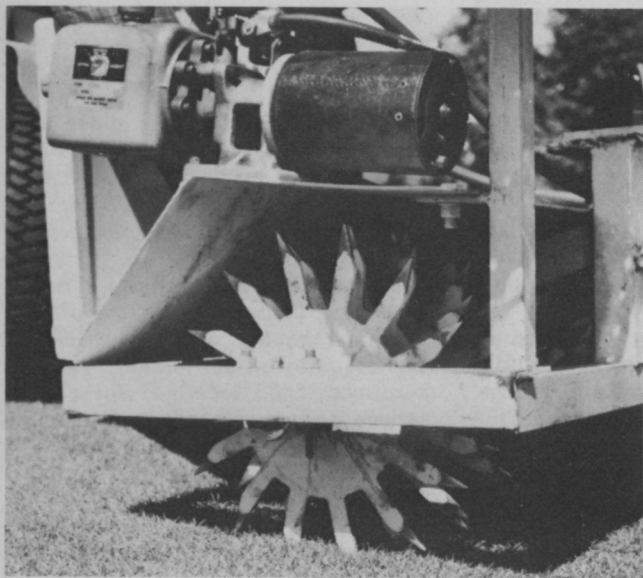
NON-METALLIC SAFETY CANS: Justrite Manufacturing Co., Chicago, Ill.

Greater overall strength, corrosion resistance, contamination resistance and puncture resistance. These are the primary advantages in a new line of non-metallic polyethylene safety containers. Included are a plastic disposal can, a one-gallon oval storage can and a 2½ gallon plastic safety can. Seamless construction provides greater strength and a container that will not leak or break. Other features include a built-in check valve and a pressure relief vent. In addition, the containers have metal flame arrestors to prevent flames from entering the cans plus a spring-loaded cap to contain and extinguish possible fires. For more details, circle (705) on the reply card.



SUPERBLO BLOWER: Vandermolen Corporation, Livingston, N. J.

This is the first application of a Wankel Rotary Piston Engine to a blower. The new 848 provides the biggest airblast available on push blowers today. The Wankel engine turns the blower at 5,000 rpms which is about 40 percent more airblast than a 4 cycle, 3600 rpm unit of comparable horsepower. Lightweight and compact, the blower's absence of vibration greatly reduces operator fatigue. For more details, circle (706) on the reply card.



LITTLE BEAVER SPIKER: Smithco Company, Wayne, Pa.

Relieve compaction fast under all turf conditions with this new addition to the Smithco family of Redheads. With a maximum depth of 2 inches, each spiker disc is individually mounted on the shaft and the entire reel, with a piking width of 48 inches, is spring-loaded to flex and turn. A hand control hydraulically raises or lowers reel. Unit is powered by a 10 hp engine with a 12 volt electric start. Other features include belt tightener clutch, friction reverse, brake and parking brake. The power head is interchangeable with other Smithco products. Turf tires and a 78 inch by 48 inch drag mat are standard equipment. For more details, circle (707) on the reply card.



60 INCH DOZER BLADE: Allis-Chalmers Corp. Outdoor and Leisure Products, Milwaukee, Wisc.

Attach this 60 inch front-mounted snow plow and dozer blade on the front of the 620 tractor and the combination will get the big jobs done in a hurry. Hydraulic action operates the blade and it is connected by quick-couple plug-ins located in the front of the tractor. The power unit is a 19½ hp air-cooled two cylinder four cycle engine specially designed for parks, estates and industrial sites. Blade is heavy-gauge steel that will take the tough jobs without buckling or straining. For more details, circle (708) on the reply card.

Hawaiian Seminar Planned By ASPA

The American Sod Producers Association is planning a winter seminar, Feb. 19-26, 1973, in Hawaii. Details as to headquarters hotel and departure via charter flights will be forthcoming shortly, according to Dr. Henry Indyk, executive secretary.

In the plans are two sessions of one-half day each on financial management. Dr. James Longstreet, chairman of the Finance and Business Administration department at the University of South Florida will head the seminar. Dr. Longstreet is a nationally recognized authority in the field of finance, Indyk states, and his presentations will be directed toward elements of finance and accounting which sod producers can use in their own financial planning.

Dr. Longstreet, Indyk further re-

ports, is a brilliant teacher and an exciting speaker. Indyk believes this will prove to be one of the ASPA's most outstanding educational programs.

Besides the seminar program, several organized tours are planned and ample time is also being set aside for personal tours.

Arrangements are being made, Indyk says, for charter flights which will leave from various points throughout the U.S.

Growers may obtain more detailed information directly from Indyk at P.O. Box 231, New Brunswick, N.J. 08903; telephone, (201) 247-1766, Extension 1453.

Midwest Turf Growers Plan OSHA Seminar

A seminar aimed at pinpointing Operational Safety and Health Act standards for sod producers is being sponsored by the Midwest Sod Growers Association.

John Latta, Princeton Turf, Kansas City, Mo., and president of the Midwest group, has announced that all sod producers, contractors, and friends, nationwide, are invited to attend.

The date is January 24, 1973, at the Airport Holiday Inn, Denver, Colorado. The seminar begins at 9:00 a.m. and ends at 4:00 p.m.

The seminar is being conducted by the law firm of Nelson, Harding, Marshetti, Leonard & Tate, a firm with offices at Denver, Lincoln, Chicago, and Los Angeles, which specializes via a labor and law section in representing management in the field of labor relations.

In preparation for the seminar, the firm has secured about 50 color slides of sod production in which OSHA requirements are a factor. Growers attending are also being invited to bring personal slides which bear on OSHA standards. These will be used in determining technical requirements to meet OSHA.

The law firm also has a booklet available on OSHA which will be included in the \$35 registration seminar fee for attending the conference. Also included in this fee, Latta says, is lunch and an afternoon social

hour. Chairman of the seminar is Norman LeGrande, Hendricks Sodding & Landscaping, Lincoln, Neb.

The Jan. 24 date precedes the 2-day Colorado Conference to be held at Ft. Collins Jan. 25-26.

Water Quality Report Published By EPA

The Environmental Protection Agency has published a comprehensive water quality report designed to provide rapid access to information on the effects of chemicals on fish and other aquatic organisms.

The document of over 500 pages is the result of a study sponsored by the Columbus Laboratories of Battelle, Columbus, Ohio.

The report lists several thousand substances by chemical and trade name along with the specific effects the substances produce in aquatic life. The data is based on technical literature available through 1968. Collected from nearly 1000 references, the report represents studies on water pollution ranging geographically from the Nile in the Sudan to streams in South Carolina and Florida. Extensive information is provided on pesticides and heavy metals.

The authors of the report are H. T. Kemp, J. P. Abrams, and R. C. Overbeck.

About 5000 aquatic species are included in the report with the major emphasis on fish, insects, algae and other water organisms. The study's concern was primarily with freshwater aquatic life, but information on the effect of chemicals on marine life is also included.

The data are arranged in a tabular form and include: the name of the chemical, aquatic organism affected, technique by which toxicity was determined, field location where reference study was conducted, toxicity of active ingredient, and name of researcher and date when study was completed.

In addition to listing the chemicals and organisms, the report includes sections which discuss bioassay of fish and other aquatic organisms, marine bioassay, field assessment, factors affecting chemical toxicity such as water temperature, and industrial wastes.

For copies of the report, "Effects of Chemicals on Aquatic Life," Water Quality Criteria Data Book, Volume 3, No. 18050GWV05/71, write Superintendent of Documents, Government Printing Office, Washington, D. C. 20402 and enclose \$3.75 per copy.

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Turf Seminar Scheduled For 17 Cities

A "Turf Disease & Weed Seminar" sponsored by the agricultural chemicals division of Diamond Shamrock Chemical Company will be held in seventeen cities between now and the end of 1972.

The Company held four such seminars in the greater Chicago area last Spring to determine receptivity by golf course superintendents and grounds maintenance managers. Based on the success of the trial seminars, the Company has announced seventeen more seminars, and may add still others before year's end.

The one-day sessions feature a three-part program covering toxicology, fungicides and herbicides. Each topic is covered by an in-depth discussion of current turf problems, treatments, methods and consequences. A variety of products, not only Diamond Shamrock's, are also examined.

Seminars that have been scheduled include: S. Windsor, Connecticut on November 8; New Haven, Connecticut, November 9; Stow, Massachusetts, November 10; Portland, Oregon, November 13; St. Louis, Missouri, November 14; Kansas City, Missouri and Dallas, Texas on November 15; and Wichita, Kansas on November 16.

Seminars will also be held in Concord, Ohio on November 17; Minneapolis, Minnesota, November 28; Sacramento, California, December 5; Redwood City, California, December 6; Los Angeles, California, December 7; Santa Barbara, California, December 8; Denver, Colorado, December 12; and Las Vegas, Nevada, December 15.

Details about the seminars are available from Diamond Shamrock Agricultural Distributors in each location.

Texas Ag. Department Approves Use of Banvel

The Texas Department of Agriculture has approved the use of Banvel® herbicide plus 2,4-D herbicide for control of Macartney rose, according to Velsicol Chemical Corporation.

Recommended rates are 1 to 2 pounds Banvel, 1 to 2 pounds 2,4-D amine plus 1 quart Accutrol spray adjuvant per 100 gallons of water.

The heavy droplets of the Accutrol spray system help penetrate the thick brush and, because the spray is white, enable the applicator to see

where he is spraying and insures the complete coverage necessary for Macartney rose control. If only one side is sprayed, for example, the other half may continue to live.

Planted as a windbreak several decades ago, Macartney rose is now taking over some of the most valuable grazing land in Texas. The density of the plant which made it an effective windbreak, also makes it one of the most difficult species to control.

With Macartney rose, it is best to wait a full year to determine the percentage of control, says Velsicol. Banvel is a slow brush killer, and it usually takes a full year to determine the amount of control obtained.

Warm Weather Speeds Sludge Decomposition

Warm temperatures greatly speed decomposition of sewage sludge applied to soil, according to Dr. Robert H. Miller, professor of agronomy at The Ohio State University. "We can now predict the amount of sludge decomposition under any temperature conditions," Miller told agronomists attending the American Society of Agronomy recently.

Although applying sewage sludge to land as a low-analysis fertilizer is not a new practice, it is currently of great interest in the United States. An ever-increasing number of cities and municipalities of various sizes have been looking at land disposal as an alternative method of sludge disposal, Miller explained. Not only is the practice less expensive than using lagoons, drying beds or incineration, it also can provide a low-cost way to renovate poor soils or strip-mined areas.

Data from recent studies have shown a relationship between the percentage of sewage sludge decomposed and the monthly average minimum and maximum temperatures. This information will be useful in predicting the decomposition of sewage sludge during different seasons and in different climates, the agronomist suggested.

At loading rates greater than 40 tons per acre of dry sludge, soil properties had little influence on sludge decomposition, Miller noted. Fine textured soils irrigated with liquid sludge may become saturated with water, which will reduce decomposition rates but in sandy soils the excess soil moisture had little influence on decomposing rates.

Temperatures used in the studies were those of Columbus, Ohio where Miller did his research.

"CUTRINE absolutely got rid of all my algae before the Greater Milwaukee Open started."



Says Bud Hooper, course superintendent, Tripoli Country Club, Milwaukee, Wis.:

"Less than a week before the GMO, my water was solid with algae. I didn't think there was a chance CUTRINE could get rid of it in time. BUT IT DID!

"The best thing about CUTRINE is its safety. I irrigate my greens from my open water. With CUTRINE, I can draw water right after treatment and won't hurt the grass. We have ducks, too, and they aren't harmed either.

"If CUTRINE worked only half as well as it does I would use it because of the safety factor.

"I wouldn't get other superintendents in a bind by recommending CUTRINE if I wasn't convinced it works, and safely.

"CUTRINE is absolutely the best there is for algae control."

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industry people on the move



Ronald A. Steen, named general manager of the Light Industry Group, newly formed from four J I Case Company divisions, including Davis Manufacturing, Outdoor Power Equipment, Concrete Machinery and Vibromax.

Allan Cumps and **Bob Fullerton** become new technical representatives of the ProTurf Division of O. M. Scott & Sons. Cumps will cover western Massachusetts and Vermont and Fullerton will be working in the Arizona and New Mexico region.

Jeff H. King, appointed marketing services manager of Ackley Manufacturing.

James R. Davies, appointed to a three-year term on the Agricultural Economics Advisory Committee of the College of Agriculture at the University of Illinois. He is currently a pesticide products specialist with American Oil Company's Rural Marketing department.

William Miller and **Ray Hill** become agricultural chemical sales representatives for Thompson-Hayward Chemical Company.

Walter B. McCay, to midwest district manager, agricultural chemicals, for the Agricultural and Veterinary Products Division of Abbott Laboratories.

A major personnel reorganization of the market devel-

opment department at Monsanto has taken place. **Dr. G. William Selleck** and **Dr. Earl C. Spurrier**, appointed senior development associates; **Ralph E. Althaus**, becomes regional manager — U.S.; development associates include: **Dr. Olin N. Andrews Jr.**, Albany, Ga.; **Dr. Douglas D. Baird**, Hilton, N.Y.; **Dr. Donald L. Barnes**, Des Moines, Iowa; **Robert L. Benson**, Indianapolis; **Roger C. Billman**, Orlando, Fla.; **Dr. Ronald G. Brechley**, Fremont, Nebr.; **Dean A. Brown**, Yakima, Wash.; **Dr. Jerry D. Caulder**, St. Louis; **Claude W. Derting**, Memphis; **Robert G. Duncan**, Lubbock, Tex.; **Kenneth R. Frost Jr.**, Alexandria, La.; **Dr. Wylie B. Homesley**, Kansas City, Mo.; **Norman J. Probst**, Mankato, Minn.; **Gordon T. Reynolds**, Bloomington, Ill.; **Dr. Frank D. Timmons**, Raleigh, N.C.; **Harvey D. Tripple**, Findlay, Ohio and development representative, **Dr. Thomas F. Armstrong**, Madison, Wisc.; senior biologist appointed is **J. Marshall Magner**, St. Louis.

Richard J. Kotnour, named public relations manager for CF Industries, Inc.

Mancer J. Cyr, appointed to the new position of marketing planning manager for Bolens Division, FMC Corporation. **Charles F. Bartlett**, named general sales/marketing manager with responsibility for policy and programs; **Don R. Birdsall**, rejoined Bolens as advertising and sales promotion manager.

Eugene Lierz, joined the Moist O'Matic Division, The Toro Company, as sales coordinator. Will coordinate the sales of irrigation products to distributors.

Robert M. Morgan, appointed vice president of the newly formed Irrigation Division of Melnor Industries.

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control algae by biological means or in development of microwave equipment for use on water algae.

Another facet of vegetation management related to aquatics is control of weeds along ditchbanks.

"The ultimate aim in control of weeds along ditchbanks is to prevent erosion by carrying out management practices which will stabilize slopes," Dr. Rupert Palmer, a Texas extension agronomist reasoned. He recommended that applications of selective herbicides be made early and that a sod of perennial grass be established on the slopes.

Since industry became concerned with vegetation management years ago, many companies have had to decide whether to carry on their own programs or hire a weed control service.

At one time, Houston Lighting and Power Co. was spending about \$200,000 a year for ground maintenance that was virtually all done by manual labor. Their vegetation management program began with cutting grass, planting trees and picking up trash; but they weren't able to keep up with vegetation problems around substations, right of ways and railway sidings.

Dusty Wolfe, a representative of HL and P, outlined his company's approach in selecting a vegetation control service:

"First we put down on paper exactly what we wanted. Then we knew that our company had to have a responsible person managing the program because he would be serving as an extension of us, and the public might be judging us by his actions. So we looked for a service which was knowledgeable about regulations and one that had reliable equipment."

"The buyer is only interested in buying results," Bill Held of Houston Spraying and Supply Co. said. "Let the buyer completely understand what he is investing in. Build relations for the future and don't oversell. Overselling is only a lowering of the industry's standards."

He told conference participants that one of the major obstacles in accurately determining costs and materials is a lack of definite specifications.

"Specifications should be realistic," he noted. "They should at least include a clear designation of the area to be treated, degree of control desired, rates of applications and schedules for applications and mowings."

Held suggested that a standardized specifications form approved by

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For More Details Circle (125) on Reply Card

members of weed control organizations could reduce the number of misunderstandings arising from vague and incomplete specifications.

During other sessions of the conference selective vegetation management was discussed. George Richter of the Houston Department of Parks and Recreation talked about management with mowing. Dr. Dudley Smith, Texas Agricultural Experiment Station, spoke on control of herbaceous plants. Dr. R. W. Bovey of the USDA's Agricultural Research

Service presented a program on chemical control of woody plants.

The final segment of the conference dealt with technology of application. James Shaw, ROWCO Co. of San Antonio, explained aerial distribution. Use of thickened sprays was discussed by Jack Thompson of Amchem Products, Jackson, Mississippi. Homer McCall of Texas A&M discussed current uses of foam and Dr. Marvin L. Beasley of the R. H. Bogle Co. of Alexandria, Virginia, spoke on polymers.

GREEN INDUSTRY ASSOCIATIONS

(from page 78)

Corporation, Muncie, Indiana; Thomas A. Morrison, Treasurer, H. A. Morrison—Arborist, Wilmette, Illinois; William P. Lanphear, Immediate Past-President, Forest City Tree Protection Company, Cleveland, Ohio; Gerald E. Farrens, Director, Farrens Tree Surgeons, Jacksonville, Florida; Boyd Haney, Director, B. Haney and Sons, Inc., Franklin Park, Illinois; Kenneth B. Kirk, Director, Shield Shade Tree Specialists, Clayton, Missouri; George P. Tyler, Director, Consolidated Utility Equipment Service, Inc., Amherst, New Hampshire

Annual Meeting: February 18-22, 1973, Mountain Shadows, Scottsdale, Arizona.

Highlights of 1972: During 1972 the National Arborist Association saw the completion of the Professional Home Study Program in Arboriculture which is a major attempt by professional arborists to improve the practice of arboriculture through an industry-produced education program. Over 400 arborists are enrolled in the Home Study Program putting this magnificent industry education program well on its way to success.

The National Arborist Association also had the honor of commemorating the 100th anniversary of Arbor Day climaxed by a ceremony conducted on the White House lawn in which the First Lady, Mrs. Richard M. Nixon, planted a tree presented by the NAA.

A major program which saw its inception in

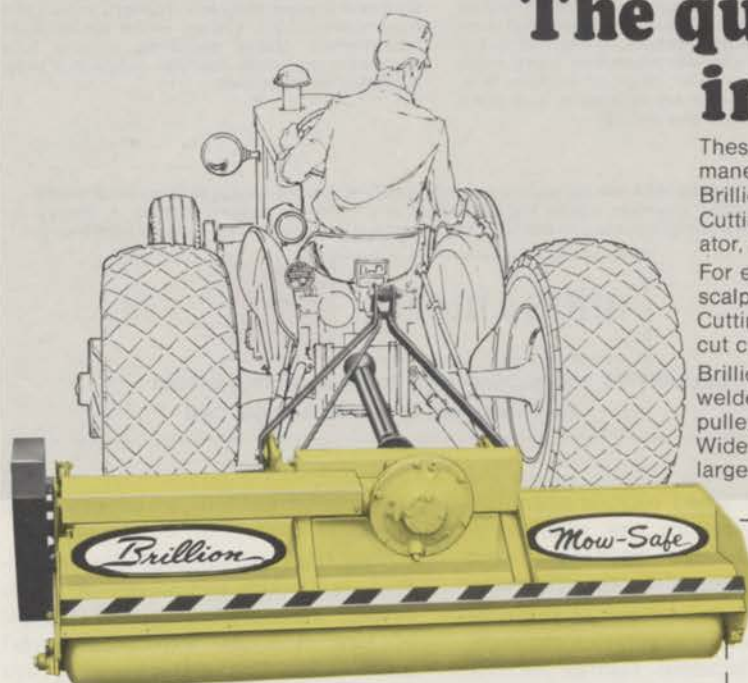
the latter portion of 1972 was the NAA Occupational Safety and Health Manual which was developed as a continuous information service for NAA members. The OSHA Manual was produced in November, and a specific OSHA topic is distributed to members each month for inclusion in the book.

Program for 1973: A continued effort will be made to keep arborists informed on the many aspects of the Occupational Safety and Health Act of 1970 through regular additions to the NAA OSHA Manual. Along with the OSHA program, a determined effort will be made to improve the tree care industry through the Professional Home Study Program. Industry education and training will be the targets of an all-out effort by the National Arborist Association to improve the professional practice of arboriculture throughout the nation.

Forecast for 1973: Occupational safety and health will be an important continuing program for the federal and state governments, and the tree care industry should make a maximum effort to comply with all reasonable regulations set forth by law. OSHA inspections will be more numerous in '73 than '72 because of the increasing numbers of inspectors. Another factor in the occupational safety and health area is the pending issuance of the Z133 Committee Report establishing standards for the tree care industry. Next year may well see the adoption of the report by the American National Standards Institute and its incorporation in the federal OSHA standards.

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For even cutting, big 6" diameter roller ends ripple, reduces scalping. Unique float link lets mower follow ground contours. Cutting height adjusts easily from 3/4" to 6". Folding flail knives cut clean, swing freely, are easily replaced.

Brillion builds 'em tough for long, trouble-free life. Frame is all welded. Gear boxes are husky, Brillion-built. Cross-shaft, drive pulleys and PTO are all shielded. Fit 3-point Category I hitch. Wide choice of options available. And see the 88" Mow-Safe for large-acreage mowing.

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— meeting dates —

Texas Turfgrass Conference, Memorial Student Center, College Station, Tex., Dec. 4-5.

National Agricultural Aviation Association Conference, 6th annual, Las Vegas Hilton (international) Hotel, Nev., Dec. 11-14.

Ohio Turfgrass Conference and Show, Franklin County Memorial Building, Columbus, Ohio, Dec. 12-14.

Kansas State Shade Tree Conference, annual, Student Union, Kansas State University, Manhattan, Kans., Jan. 4-5.

Western Association of Nurserymen, 83rd annual meeting and trade show, Plaza Inn, Kansas City, Mo., Jan. 7-9.

North Carolina Nurserymen's Short Course and Trade Fair, 36th annual, University Student Center, N.C. State University, Raleigh, N.C., Jan. 7-9.

Golf Course Superintendents Association of America, 44th annual International Turfgrass Conference and Show, Boston, Mass., Jan. 7-12.

New York State Arborists Convention, Annual, Nevele Country Club, Ellenville, N.Y., Jan. 14-17.

California Weed Conference, 25th annual, Disneyland Hotel, Anaheim, Calif., Jan. 15-17.

Michigan Turfgrass Conference, 43rd annual, Kellogg Center, Michigan State University, E. Lansing, Mich., Jan. 16-17.

Southern Weed Science Society, 26th annual meeting, Jung Hotel, New Orleans, La., Jan. 16-18.

Ohio Chapter, International Shade Tree Conference, annual meeting, Sheraton-Columbus Hotel, Columbus, Ohio, Jan. 21-25.

Colorado Farm Show, Greeley, Colo., Jan. 22-24.

Associated Landscape Contractors of America, 11th annual meeting and trade exhibit, Doral Country Club and Hotel, Miami, Fla., Jan. 22-26.

University of Tennessee, one week Winter Short Course in Turf Management, West Tennessee Experiment Station, Jackson, Tenn., Jan. 22-26.

Rocky Mountain Regional Turfgrass Conference, 19th annual, Colorado State University, Fort Collins, Colorado, Jan. 25-26.

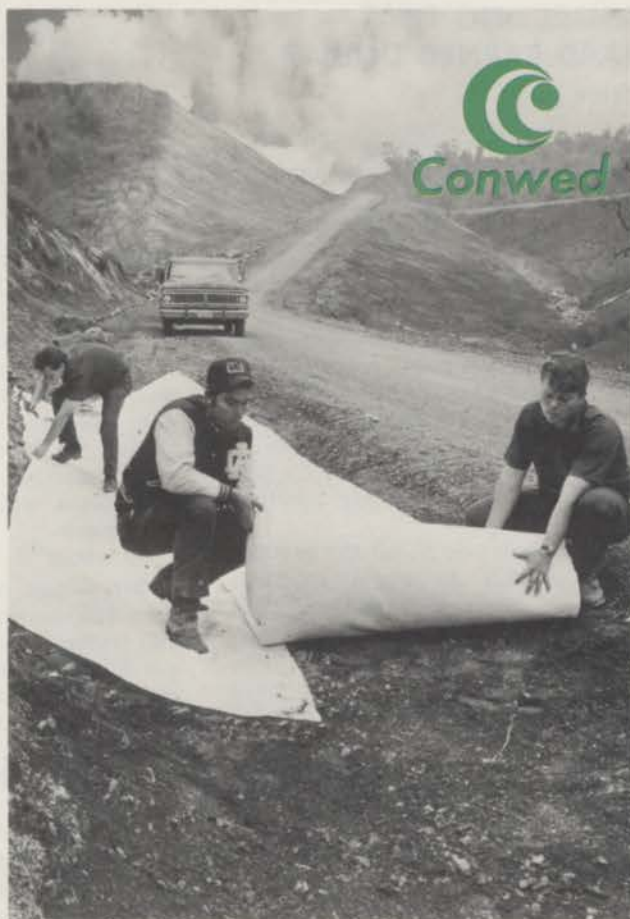
Penn-Del Chapter, International Shade Tree Conference, annual meeting, Marriott Motel, Philadelphia, Pa., Jan. 25-26.

Annual Winter Seminar for Commercial Arborists, O'Hare Concord, Rosemont, Ill., Jan. 30.

Virginia Turfgrass Conference, Sheraton Motor Lodge, Fredericksburg, Va., Jan. 30-31.

Tennessee Turfgrass Association, annual conference, Roger Millers King of the Road Motor Hotel, Nashville, Tenn., Feb. 5-6.

Midwestern Chapter, International Shade Tree Conference, annual meeting, Holiday Inn, 1926 W. Wisconsin Ave., Milwaukee, Wisc., Feb. 6-8.



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Your request will also bring you information about Conwed's complete line of other turf establishment products. Write now to: Conwed Corporation, Dept. WTT-122, 332 Minnesota Street, St. Paul, Minnesota 55101.



COLLECTING THAT HARD EARNED DOLLAR

(from page 21)

himself or for leverage when he knows the job will be a slow-pay one. Don't let yourself get pinched! Make sure **your** contract is with the person who will pay **you**.

Also make sure that you will get paid for your work **regardless** of any circumstances. Don't enter into any "you'll - get-paid - when - I - do" deals unless you can afford to lose your shirt if he loses his. Many small landscape and tree service contractors have gone broke by getting in too deep on a big job that went bankrupt.

Even when you do all the precautions possible to avoid payment problems, most everybody in this business will run into some difficulty in collecting the money due them for their work. (Some guys have a hard time just **asking** for their money.)

Even if you are shy, mild-mannered type, there should be nothing embarrassing about asking to get paid. After all it's not like asking for a hand-out.

Don't forget you have earned it, every cent of it!

Of course, no one wants to offend a customer, and there are some tactful, candy-coated ways of saying "I'd like to get paid now."

One way that has always made it easier for me is to have the customer "check out the job" just before we finished. That way I knew he was satisfied before I left, and 90% of the time **he** will bring up the matter of payment.

Another way I found successful (especially if the person who was paying me wasn't home) was to say something like "I'll stop back after dinner to see if everything was satisfactory with Mr. Jones." That

was enough to imply I'd be collecting and believe me if anything wasn't satisfactory I'd hear from "Mr. Jones" before I had a chance to stop back.

Which brings us to the case of the Never-Satisfieds, and they exist.

I once had a case where we did a tree take-down job for about \$225.00 during the winter. We made a short tire rut on the lawn with our brush chipper. I promised to fill the rut with topsoil and re-seed it as soon as the weather permitted. And I was sincere. But this Never-Satisfied was going to withhold the entire \$225.00 till I completed the job to his satisfaction, which meant about a six week wait before I could get my money.

My reply?

"Mr. Jones, my men and I have done \$225.00 worth of work for you and trusted you to pay us when we got done. We didn't ask for a nickle in advance. That sod job is worth, at-the-most \$25.00. If we trusted you for the \$225.00, I think you should trust us for \$25.00 don't you?"

He agreed.

Try that reply next time somebody is giving you a hard time about a small detail which you can't take care of right away. It usually works.

Slow-pay customers can cause much grief and sometimes they are hard to prod without offending. Try giving them a good reason why you need the money soon and a definite time when you want it. Such as: "I'll have a large payroll this week and my funds are pretty short, can I pick up the check for your job this Thursday?" This way they don't feel hounded, also they have time to get the money even if they have got to jiggle some other bills.

The genuine Deadbeat is, fortunately, a rare breed. In the final analysis they'll come out ahead of you almost everytime. Even if you

— classifieds —

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

Rates: "Position Wanted" 10¢ per word, minimum \$3.00. All other classifications 20¢ per word, minimum \$4.00. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment. Bold-face rule box: \$25.00 per column inch.

HELP WANTED

LANDSCAPE MAINTENANCE, salesman, supervisor. Do you get satisfaction out of seeing an industrial or public property well maintained knowing you estimated the requirements and the price, bought the necessary equipment and supplies, hired, trained and supervised the men and ended up with a good looking property and a well satisfied client? If so and if you have the right educational background and experience and would like an opportunity to take over a well established landscape maintenance department and push it into something really worthwhile, drop us a line. We've been in business in the suburban

take them to Small Claims Court, or a magistrate, at best all you can get out of them is a **promise** that they'll pay. The magistrate may get a few dollars in "costs" but that won't make **you** any richer. In fact, it will **cost** you money to get a summons served.

If you belong to a credit service, you might get their future credit blackballed but if they're real Deadbeats that's probably already happened. Ruining their credit rating still won't pay their overdue bill.

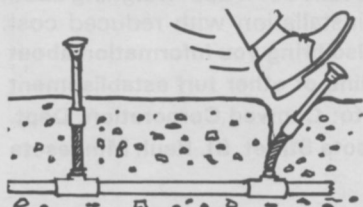
Make sure you have appealed to both mates in the family, (Maybe one is more conscientious than the other).

I once had a situation when the woman told me she didn't know when her husband would pay me . . . and when I called he was never there. I met him one morning on his way to work, and found out he had given his wife my money not once, but three times, and each time she said she had paid me but later told him she bought clothes etc. He gave me \$25.00 on the spot and paid me the rest himself two weeks later.

Most people don't pay on time for one of these three reasons. 1. They are not satisfied. 2. They forgot. 3. They don't have the money. Numbers 1 and 2 you can remedy. As for No. 3, well, you'll have to help them find a solution to their problem before you can solve yours. Happy Collecting.

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Philadelphia area 45 years and think we can offer you a position that includes a challenge, satisfaction and a good income. Heyser Landscaping, Inc., 400 N. Park Avenue, Norristown, Pa. 19401. Phone 215 539-6090.

POSITIONS OPEN for 2 qualified men on expanding turf farm. Experience in all phases of turf farm operation necessary for both positions and experience in sales and management required for one position. 90% of turf, muck grown, modern harvesting equipment used, considerable irrigation equipment used. Excellent future, top salary, transportation, paid hospitalization, etc. Write giving complete resume to Anthony L. Peca, Pres., Batavia Turf Farms, Inc., Box 662, Batavia, N.Y. 14020.

EXPANDING TREE SERVICE company in northeast—looking for aggressive and experienced salesman. Starting pay commensurate with education, experience, and ability. Commission also paid on profits earned. Company car furnished: pension plan; paid hospitalization, excellent future. Send resume (with current annual sales and earnings) to Box 133, Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

HORTICULTURE INSTRUCTOR. Prefer B.S. Degree and minimum of 3 years field experience. Able to teach Turf and Nursery Management, Landscape Design and be familiar with operation and servicing of horticultural equipment. Send resume to: Community and Personal Services Division, Community College of Denver—North Campus, 1001 E. 62nd Avenue, Denver, Colorado 80216.

DISTRIBUTORS for D. J. Andrews, Inc. stump cutter teeth, pockets and bolts. Best wholesale and retail price in U.S.A. Add to this exclusive area, local advertising at our expense, etc., and you have our story. D. J. Andrews, Inc., 17 Silver St., Rochester, N.Y. 14611. Call 716 235-1230, or 716 436-1515.

SOD NURSERY MANAGER. Young, married man for 400 acre operation serving Chicago metropolitan area. Send resume. Box 91, Weeds Trees & Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

POSITIONS WANTED

DESIRE POSITION as arboriculture field supervisor with private firm, city, county or state shade tree activity. More than four years of first-line supervision and better in municipal arboriculture. Married, two children. Military obligation complete. Willing to relocate; prefer northern U.S. Resume sent on request. Box 93, Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

SEEDS

SOD QUALITY MERION SEED for discriminating growers. Also Fylking, Delta, Park, Newport, Nugget and Pennstar bluegrasses as well as fine fescues. We will custom mix to

your specifications. Michigan State Seed Company, Grand Ledge, Michigan 48837. Phone 517 627-2164.

MISCELLANEOUS

TREE APPRAISALS, SURVEYS, loss evaluations and expert consultation services. For names of members of the American Society of Consulting Arborists, Inc., throughout the country, contact: Executive Director ASCA, 12 Lakeview Ave., Milltown, New Jersey 08850.

MISCELLANEOUS WANTED

WANTED—For seasonal firm with 3,000—6,000 sq. ft. of new warehouse plus fenced ½ acre of storage with 5 employees interested in manufacturing or assembling operation from Dec. 15th-March 15th. Contact: Turf Specialists, P.O. Box 925, Holbrook, L.I., N.Y. 11741. Phone 516 981-1118.

USED EQUIPMENT

FULL LINE OF USED TREE equipment for sale. We accept trade-ins and buy used tree equipment. New service available for northern Ohio. We now rent skyworkers, tree spades, brush grinders, 84' National crane, stump grinders and wood splitters. Edwards Tree Service, 3190 Cooper Foster Park Road, Vermilion, Ohio 44089. Phone: 216 967-6750 or 933-6750.

1967 FORD with McCabe power aerial basket, 47' working height, \$4,000; 1966 Ford with 1044A Skyworker, 50' working height, \$7,000; 1966 Dodge with Prentice loader, 14' bed, \$7,000; Vermeer stump cutter No. 18, \$2,500; Asplundh 12" chipper V/8 engine, \$2,300. Bob's Tree Service, 5148 No. Flora, Kansas City, Mo. 64118. Phone 816 454-2242.

FOR SALE

DOUBLE EDGE sod cutter blades. Will fit any Ryan sod cutter. Works like double edge razor blade. Cuts much more sod per blade. Made to bolt on both ways. \$24.00 plus postage. New automatic sod loaders for direct loading to pallets, trucks or trailers. No workers needed on ground. Both products developed and designed by Hadfield. Write or call Glen Hadfield, 4643 Sherwood, Oxford, Michigan 48051. Phone 313 628-2000.

THE GOLD ONES from D. J. Andrews, Inc., Stump cutter teeth, pockets, and bolts. Top quality and best price in the U.S.A. D. J. Andrews, Inc., 17 Silver St., Rochester, N.Y. 14611. Call 716 235-1230 or 716 436-1515.

EDUCATION-BOOKS

LEARN AUTOMATIC IRRIGATION—Complete self-taught course and textbook on fundamentals. Design, operation, maintenance, installation, pipe, equipment. Latest developments in automatic turf and landscape irrigation. New Edition now only \$49.50 postpaid. California add tax. Send check, order or request for free outline. Larson Company, P.O. Box 4453, Santa Barbara, Calif. 93103.

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trimmings

FINGERPRINTING PLANTS biochemically is one of the most fascinating areas of research today. James L. Brewbaker, University of Hawaii horticulturist, is fingerprinting plants by distinguishing various enzymes. Known as gel electrophoresis, the method is employed in varietal description where plant varieties are otherwise indistinguishable. This method applied to hybrid corn would permit identification of 2,247,370,997,760 different parent or inbred lines of this important crop.

A PROBLEM WEED INTO PROFIT is how a midwestern animal scientist views water hyacinth. Looking at the weed in terms of forage, R. L. Vetter, Iowa State University, says that 84 tons of plant material, or about five tons of dry matter, were produced per acre in a lagoon. Processed hyacinths have some feed value when fed at one-third of the total ration. One new area to consider is the use of water hyacinths in lagoons and sewage ponds. The actively growing plant can remove about 500 pounds of nitrogen and 18 percent of the phosphorus per acre of lagoon. Possibilities also exist for use of water hyacinths as an organic fertilizer. Spread it with conventional manure spreaders.

ARS SHADE TREE AND ORNAMENTAL PLANTS LABORATORY at Delaware, Ohio, will command the spotlight at the Wholesale Nursery Growers of America, Inc. annual meeting at the Arlington Park Towers Hotel, Arlington Heights, Ill., January 14. "A Day at Delaware" will feature speakers on genetics and breeding of elms and maples, vegetative propagation, woody plants as environmental filters, disease control in landscape plants, research trials, and others.

LD₅₀ is a term batted around in chemical circles. It means a dose of sufficient quantity to kill half of a test population. It gives a measurement of the potency of the chemical in relation to other chemicals. Promotion of the lethal dose is the latest fad in teaching the public about toxicity of environmental protection chemicals. Walter Weber, technical director of pesticides at the Indiana Farm Bureau Cooperative, has created a large display promoting this theme. Based on acceptable toler-

ances and residues permitted on a crop, an average 150 pound man would have to eat 90,000 pounds of apples to ingest a lethal dose the same as Captan fungicide. Of corn threatened with atrazine, this person must eat 1,848,000 pounds.

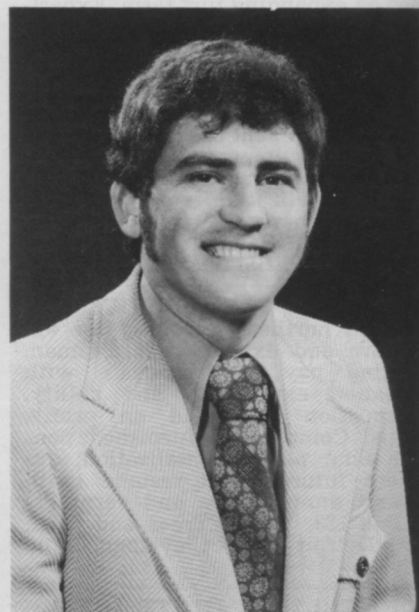
ANOTHER VIROID has been isolated by a USDA scientist. What's a viroid? It's a newly discovered class of infectious particles smaller than a virus. Dr. Theodor O. Diener, pathologist with the Plant Virology Laboratory of USDA's Agricultural Research Service (ARS), said the second viroid has been shown to cause chrysanthemum stunt disease. It was isolated from the leaves of affected plants. The first viroid was found to be the agent of potato spindle tuber disease.

Since two different viroids have now been shown to exist and to cause specific diseases. Dr. Diener is convinced that viroids "are not unique anomalies and are very likely widespread in nature." Other plant diseases, as well as animal and human diseases, such as multiple sclerosis, infectious hepatitis and some types of cancer, may be caused by viroids. "Such diseases," Dr. Diener said, "have some common patterns that lead one to suspect a viroid origin."

PRESCRIPTION ATHLETIC TURF is proving to be viable alternative to artificial turf, wherever wear is not excessive. And the cost of installation is much lower per unit area. If it rains just turn on the suction pumps and pull the water down into the porous root zone before the surface is saturated. Heating cables extend growing season, prevent frozen soil and aid in snow melting. Vented field covers conserve moisture and heat, and minimize frost during fall, winter and spring. Add a tight sod of bluegrass, zoysia or bermuda and you have a turf that can counteract the extremes of weather. The system was developed by two Purdue University agronomists who call it PAT (prescription athletic turf).

BACILLUS THURINGIENSIS BERLINER products must now be expressed in terms of International Units (IU) of potency. B.t. is a biological compound used to control insects. Labels must now state potency per milligram of product as determined by bioassay. A product hav-

ing a potency of 500,000 IU per milligram will be considered to consist of 100 percent active ingredients and the percent of active ingredients will be calculated on this basis.



Dennis Holewinski

Environmental Services Started By Asplundh

The Asplundh Tree Expert Company has broadened its scope of operations by forming a new Environmental Division to help utilities surmount the evergrowing problems of ecology.

According to Hyland Johns, vice president, the new Asplundh Environmental Division "will provide a single source of responsibility in ecological matters for utilities which was previously unavailable and will be staffed by a group of experts with a wealth of experience in environmental planning and landscape architecture."

The new division will be administered through the offices of all field division managers of the Company and offers utilities the following services: land use planning, landscape construction and planting, substation planting design and construction plans, transmission right-of-way selection, recreation area development, specifications and guidelines on soil, vegetation, wild life and other resource problems.

The Asplundh Environmental Division is headed by Dennis Holewinski, a graduate landscape architect. He brings considerable experience in the field as a former member of the staff of the Illinois Highway Department.



“JD570-A gives us the advantage on larger finishing and seeding jobs”

Ron Schaefer, President
Schaefer-Meyer Grading, Inc.
Florissant, Missouri

With some large industrial-tract work, highway sloping and finishing contracts, Shaefer-Meyer use their JD570-A Motor Grader in place of a tractor-box scraper for precision finishing. “Now we do our seeding right behind the grading crew—no delay of one or two days, with the chance of rain requiring work done over. We planned to use the John Deere only about 100 hours per year, but it’s proved so practical we’re using it far more than that. We rented an earlier model and felt it was the only automatic that would fit our work. Controls are fast and smooth and it gets in the corners real close.”

Measure this 85-net-hp machine with an 18-foot turning radius against your jobs. See your John Deere dealer, listed in the Yellow Pages—and ask about financing and new RV leasing. John Deere, Moline, Illinois.



Backhoe-Loaders • Mowers and Maintenance Equipment

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They call it "The Unsurvivable One!" Because nothing wipes out chinch bugs, sod webworms and many other serious turf pests like DURSBAN* insecticide. And DURSBAN insecticide won't leach. It has excellent residual activity. It's safe, too, for all common turf grasses. And economical—you get more bugs for your buck, because so little goes a long long way. Ask your Dow distributor or your contract applicator for "The Unsurvivable One!"

*Trademark of The Dow Chemical Company



DOW CHEMICAL U.S.A.

For More Details Circle (112) on Reply Card