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NUMBER 104-1

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WEEDS TREES and TURF®

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A major program by a municipality which restricts inroads into scenic area and develops a "greenbelt" adjacent to the city by free-lancer Lou Speer.

Tree Care Market to Double In 10 Years—Can Industry Keep Up? 14

A forthright statement by Robert Bartlett, president of the F. A. Bartlett Tree Expert Company outlining his views on the industry for the next decade.

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A new tree injection product, Medicaps, is now on the market for treating iron chlorosis. It is sold by Creative Sales, Inc.

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The Cover

Drag line controls symbolize the industry. Today the equipment and chemicals to do a quality job for mankind are available. A glance at the 1972 WEEDS TREES AND TURF directory (beginning on page 17) is sufficient evidence to assure that needs of the coming decade will be met. A comprehensive index to articles and authors published by WEEDS TREES AND TURF magazine begins on page 59. It is an excellent reference to 1971 data.

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Editorial

On Collecting Delinquent Accounts

No business long endures if accounts are not collected promptly—or if customers are unduly harassed in the process of making payment.

Few businesses can afford the luxury of losing customers via poor public relations—over money, service, results, etc.

We've heard of a number of workable collection methods—probably the most effective of late being the common department store method of adding a 1% service or carrying charge on each month after 60 days.

Legal action, though effective, is expensive, and seldom worth the effort for the average service account.

So, how about the telegram? Immediate attention to contents of a telegram—by the specific person to which it is directed—is well established. The sender is almost guaranteed that the intended recipient will get the message. And there's a good chance the shock or jolt of the telegram will get action.

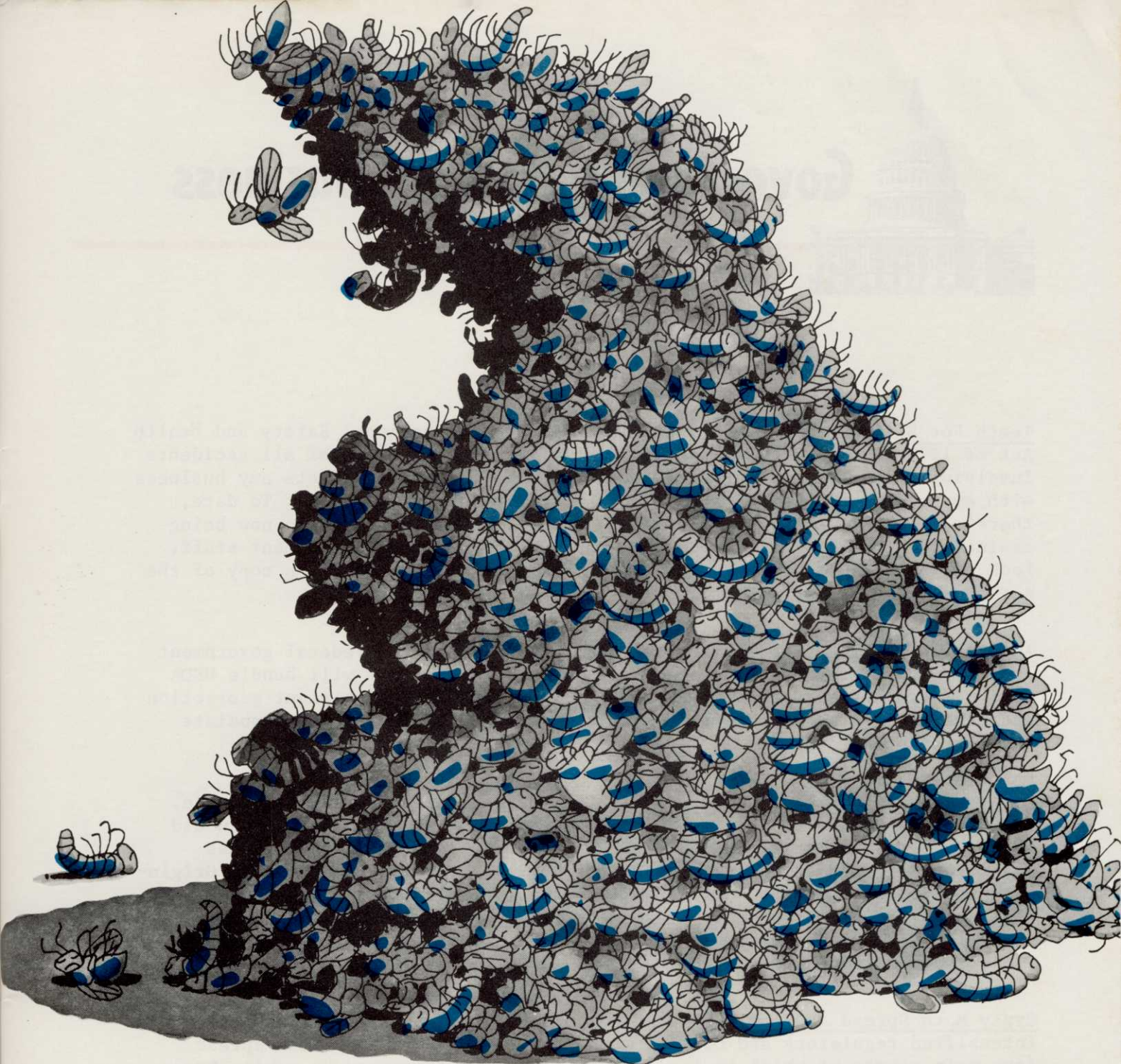
In one instance—company used telegrams to diehard debtors who had regularly ignored collection letters. Result was that most paid their bills in full. Collection costs averaged 3%.

Credit specialists have pointed to the psychological impact generated by a telegram. People who owe you probably owe other bills also. You provide the mental jolt, and you may get paid first.

Businesses who have used the telegram as one aid in collecting delinquent accounts have some rules. First, never send the telegram collect. This can be expected to be resented by the recipient. Nor will Western Union normally accept dunning types of telegrams on an intracity basis. Western Union will, however, attempt to deliver telegrams at an hour specified by the sender. Thus, it is possible to have the message arrive at a time when the recipient is most likely to receive it. Some collection managers have been known to use the telegram method with the dinner hour as the time slot for delivery.

Some suggested messages, supposedly proved effective, are:

- (1) Please advise if check covering your account now due has been mailed;
- (2) You have apparently overlooked your payment. May we have your check promptly please;
- (3) Only immediate compliance by letter (date) will save your credit;
- (4) Urge you wire your intentions on your account immediately to protect your future credit rating;
- (5) Urgent I receive payment this week. I value your friendship too much to be compelled to resort to legal action;
- (6) Imperative remittance on your account to be sent at once to avoid action by my lawyer.



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Government News / Business

Teeth For Safety Act The new Williams-Steiger Occupational Safety and Health Act of 1970 went into effect April 28. It requires a record of all accidents involving employees and a healthy working atmosphere. It affects any business with employees which might be termed a store, plant or business. To date, there's been little or no enforcement, but 70 plus inspectors are now being trained each week by the Labor Department to beef up the enforcement staff. Look for a check of your operation this next year. You can get a copy of the Act from the U.S. Labor Dept.

Animal and Plant Health Service A new department of the Federal government and a new regulatory agency. Proposal is that the new arm will handle USDA Agricultural Research Service regulatory functions including plant protection and others. Acting administrator is Dr. Francis J. Mulhern, now associate administrator of ARS.

Environmental Pesticide Control Act Passed the House by a 288 to 91 vote. Activity now shifts to the Senate. An amendment adopted by the House would allow states to restrict either general use pesticides or restricted use pesticides more drastically than the Environmental Protection Agency. Originally the House committee version would have prevented states from exceeding Federal restrictions on general use materials. Uniform labelling is still a part of the House approved package. The Senate committee on Agriculture and Forestry is expected to conduct hearings shortly on the bill.

Gypsy Moth Spread Acute USDA's Animal and Plant Health Service is designing intensified regulatory and control measures to minimize gypsy moth spread (the main source of which is long-distance artificial spread by mobile homes and trailers). A new 5-year research and development program is underway. It will concentrate mainly on selective biological controls with a limited use of chemicals. Of 2 million acres suffering light to severe defoliation this year, the greatest area was in Connecticut with 655,000 acres. Other states hardest hit: Pennsylvania, 598,000 acres; New York, 479,000 acres; New Jersey, 18,000 acres; and Massachusetts, 18,000 acres.

Secretary of Agriculture Nomination Long-time dean of agriculture at Purdue University, and now vice-president, Earl L. Butz has been nominated to succeed Clifford M. Hardin as Secretary of Agriculture. The Senate, in a difficult to understand stall, has not as yet (at presstime) approved the nomination. Butz, an Indiana native, has a lifetime career as educator and administrator at Purdue. He also served as assistant secretary of agriculture in the Eisenhower administration. He is probably the best known agricultural dean of this generation and one of the staunchest supporters for the family farm.



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MAKE NO SMALL PLANS, for only large plans have the power to capture the imagination of the people." That is the borrowed philosophy Ronald Donahue, Boulder, Colorado, Parks Superintendent, took for his own a long time ago.

Just how far this philosophy has extended, can be seen in Boulder's Greenbelt Program. Believed to be the largest municipal open-space program in the nation, planners hope it will ultimately total 12,000 acres, preserving the city's scenic mountain backdrop and controlling urban sprawl.

To date, thru purchase and option, \$4,200,000 have been committed on the project. Projections estimate it may take another 25 years to complete the master plan, and \$15 to \$20 million.

For other U.S. cities faced with the dilemma of decreasing green space, Boulder's open space plan is a model.

"First of all," Donahue says, "I think the key in our particular plan here was that this community had some kind of an anchor, a geologic feature, to preserve."

One has only to look out the window to see that feature: a dramatic mountain view.

Boulder, which has risen from a mining camp to an academic and technology center of 70,000 persons, nestles in a basin at the edge of the Rockies, 27 miles north of Denver. Rapid development threatened Boulder's scenic setting as subdivisions pushed further and further up the mountains.

In 1958, spirited citizens launched a holding action to protect the foothills. A "blue line" was established at an elevation above the city beyond which city water and sewer services could not be extended.

"This bought us time," Donahue says. "Other communities might do this with their own utilities, especially if they have electric services. It's kind of a hammer. If a developer cannot get sewer, lights, and water, chances of him being able to put in a development are slimmer."

Often, though, land becomes so valuable people are willing to sink wells and put in expensive package treatment plants. Electricity is almost always available from some source.

The "blue line" effectively slowed development in the Boulder Valley until a plan could be set up and a way of financing begun.

"We had a pretty good piece of land to start with," Donahue says.

Thru grants in 1899 and 1910, the

Greenbelt in Boulder

SAVING THE SCENERY

By LOU SPEER

Federal Government deeded the City 3,000 acres of Mountain Parks land. The Greenbelt expanded from there.

City fathers envisioned a belt of land in its natural state surrounding the city, with wilderness and park areas available to everyone in the community. Lakes and reservoirs would be anchor spots; there would be continuous linking systems.

Preservation of the majestic mountain backdrop had first priority. The City had little money in its acquisition fund.

Informed citizens, in a whirlwind educational program, took the matter to the public. In November 1967, a one-cent, open-ended, tax increase was approved by the voters, four-tenths being designated for the Greenbelts.

Today, all but 500 acres of the backdrop have been secured by the City.

"It is probably going to be more difficult," Donahue admits, "for a community with no prominent geologic feature — like a river, lake, or mountain outcrop — to establish a plan. However, I think the necessity for doing so is maybe the same in all areas, that is, to take the immediate person-to-person pressure off by establishing open spaces, where just the actual rub of civilization is becoming intolerable."

"And unless the plan is rather sweeping and imaginative," he adds, "it generally will not get the support that it needs to pass . . . The idea that the majority of the public has to be touched to benefit from the issue, is very important. That's why a large consolidated plan, which makes some sense, really has a better chance of surviving than a disjointed program which requires a gob here and a gob there. That's really not a Greenbelt anyway, but a residential park preservation."

Boulder, already, has realized

many tangible and intangible benefits from its sweeping concept.

A 1970 flood control report showed the grassy and wooded slopes above the "blue line" absorbed more rain than rooftops and streets would have, thus lowering the City's output for expensive flood control installations.

A variety of active and passive recreation is available to the public: hiking, horseback riding, picnicking, fishing, mountain climbing.

The mountain lands shelter numerous wild animals: birds; kit foxes; bobcat; deer; and the uncommon tufted-eared, black abert squirrel.

Over 50 varieties of wildflowers have been identified along mountain ridges and slopes. Of particular interest in the area where the Greenbelt and Mountain Parks merge, is an unusual interface between mountain and plains ecology.

"We find things that are associated with alpine growing alongside things associated with the plains," Donahue says. "This is significant to those studying botany, of whom we have quite a few in the city."

A second report cites the savings to the City in retaining land in its native state versus developments needing streets, utilities, schools, and protective services.

Donahue states, "I think the community that has well distributed open space lands has the tendency to be a much better preserved community than ones that don't."

Not all of Boulder's Greenbelt System is in its "out-of-town basket." The City has 25 in-town parks, totaling 300 acres. The greenways of some planned housing developments have been incorporated into the Master Plan. Narrow green strips, along creeks and irrigation ditches running thru the city, are being acquired. Extensive tree

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Among the latest acquisitions for the Boulder Greenbelt is the Mt. Sanitas area. It is adjacent to Mountain Park land and continues north of the city.



Besides the so-called "out-of-town" greenbelt area, Boulder maintains 25 town parks such as the Chataqua Park, pictured.

planting along streets is furthering the program.

Present Park Department holdings total 7,300 acres (including Greenbelts).

"We administer the Mountain Parks and Greenbelts the same," Donahue says.

The wilderness lands require little care beyond regular fire protection. Some reforestation projects have been started, and erosion control along one fire trail. A sign program,

establishing the boundaries of the Greenbelt is in progress. Litter pick-up and fence repair along private holdings are regular duties of Park maintenance crews.

Maintenance crews in the Mountain Parks and Greenbelt area rarely exceed five.

"In the summer, we have a four-man crew plus a ranger," Donahue says. "In the winter, a two-man crew plus a ranger."

The ranger patrols the area,

checking for illegal camping and fire violations, in a four-wheel drive vehicle equipped with two-way radio communications.

Maintenance crews operate four-wheel drive pickups, and the department obtained a low-ratio geared fire vehicle from government surplus.

Instances of crime, or destruction of property in the Mountain Parks or on Greenbelt lands, so far, have been few.

Because of the magnitude of the Greenbelt Program, the bookkeeping system is computerized.

"It is a separate, ear-marked program in itself," Donahue explains. "All records are kept in separate files."

Again because of the size of the program, the City has a special land officer. He is justified by the tremendous amount of time necessary to examine anticipated acquisitions and to negotiate. A qualified appraiser, the land officer, Joe Wing, not only works with the Greenbelt but helps the city in other land purchases.

The biggest headache in Boulder's far-reaching Greenbelt plan, as Donahue sees it, is the execution of the total program.

The main acquisition tool, until now, has been long-term purchase options. In many cases, with its limited funds, the City paid only ten percent down with an agreement to spread the balance across the next ten years, without interest.

With this kind of financing, park officials bleakly faced what looked like an acquisition time of several generations. Meanwhile, land prices would be escalating and hoped for areas left open to developer piracy.

Other ways to obtain money to cut down the time of acquisition were studied.

The City has received \$736,000 in open space grants from the Department of Housing and Urban Development (HUD). Additional grants are speculative as requests from cities far exceed the amount available.

The big helping hand extended on November 2, when a record number of voters passed a bonding referendum for greenbelt purchases. The referendum allows for 50 percent of the sales tax money, for a period of ten years, to be used to pay off Greenbelt purchase bonds — a total of almost \$5.5 million.

The issue passed by a whopping 78 percent margin, which Donahue considers both a reaffirmation of the Greenbelt theory and solid support for its continuance.

Tree Care Market To Double in 10 Years

Can Industry Keep Up?

A Forecast from Robert A. Bartlett

THE PICTURE of the tree maintenance industry over the next decade is seen as a mixed one by Robert A. Bartlett, president of The F. A. Bartlett Tree Expert Company.

On one hand, Bartlett sees the market for residential and industrial tree care as doubling from its present \$300,000,000 level over the next 10 years.

On the other hand, he feels that such a growth in market may outstrip industry's capacity for growth. He notes that the number of personnel entering the tree maintenance industry has been dropping at an alarming rate—falling from 15 to 30% per year over the past couple of years.

Thus, the biggest problem facing

the industry, as Bartlett sees it, is to educate young people to the opportunities available to them in the industry — opportunities not only for a satisfactory and remunerative lifetime career, but also to make a genuine contribution toward improving ecological conditions.

"After all," Bartlett says, "trees can live without man, but man can't live without trees."

Contributing to the expected market growth are several sociological factors, according to Bartlett.

At the beginning of the century when scientific tree care was in its infancy, most work was confined to large estates owned by the wealthy. His own firm, he notes, had as many as 150 men working on a single estate at a time.

As the trend toward subdivision has accelerated, the number of customers has increased vastly, while the expenditure per customer has naturally declined. However, the greater density of population with accompanying bulldozer blight and changing water tables has resulted in a tremendous overall growth of the need for tree care. It is estimated that 90% of the existing trees in areas which have been subdivided for residential construction require tree care if they are to survive.


Another factor contributing to growth has been the flight of business from the central city to the suburbs. A corporation need not be concerned with trees in a skyscraper location, but put it into a campus-like atmosphere and it immediately becomes a potential tree-care customer.

For the Bartlett Company, at least, this meant a continuing growth right through the 1970 business slump so that 1971 has been one of Bartlett's best years—this despite a decline in the investment of utilities in right-of-way maintenance.

Education is the key to the industry's being able to fully capitalize on its growth potential. Bartlett summarized in a recent interview. We must educate tree owners to the fact that trees, in addition to being an ecological and aesthetic asset, are worth real money and cannot be easily replaced. They must understand that trees, like human beings, are susceptible to a myriad of diseases and pestilences which can be diagnosed and cured by scientific means.

We must educate young people so that they will want to acquire the skills and knowledge needed to protect our trees and, incidentally, find a satisfying career for themselves.





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WEEDS TREES and TURF®

1972 SUPPLIERS GUIDE AND EQUIPMENT DIRECTORY

1971 ARTICLE INDEX

Weeds Trees and Turf presents in this section its annual guide to suppliers of vegetation control chemicals and equipment in urban/industrial areas. There is a mixture of common and registered trade names, unavoidable since usage and recommendations of researchers refer to a particular chemical by one or the other, depending upon the newness of the compound, whether its common name is easier to use, or industry ac-

ceptance. Readers' comments and suggestions are invited to help improve future editions. Keep this year's guide handy for frequent use.

An index to editorial content for 1971 follows the Suppliers' Guide. Subjects and titles, cross-references, are listed for all major features, news stories, conference reports, editorial opinion, columns and letters. Contributing editors are listed at the end of the index.

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BO-RID

The R. H. Bogle Co.
Hub States Chemical & Equip. Corp.

BOROCIL IV

U. S. Borax & Chemical Corp.

BROMACIL (HYVAR X)

Crown Chemicals
The J. J. Dill Co.
E. I. duPont de Nemours & Co., Inc.
Hub States Chemical & Equip. Corp.
Nalco Chemical Co.
Southern Mill Creek Products Co., Inc.
Stull Chemical Co.

CALCIUM CHLORIDE

The Dow Chemical Co.
Fence Painter Corp.
Pittsburgh Plate Glass Co.

CHLOREA

Chipman Div., Rhodia Inc.
The J. J. Dill Co.
Green Lawn Laboratories, Inc.

DALAPON

Aceto Chemical Co., Inc.

The J. J. Dill Co.
W. R. Grace & Co.
Nalco Chemical Co.
Southern Mill Creek Products Co., Inc.

DIURON

The J. J. Dill Co.
E. I. duPont de Nemours & Co., Inc.
Nalco Chemical Co.
Southern Mill Creek Products Co., Inc.

D-LETE

The J. J. Dill Co.

ERBON

The Dow Chemical Co.
Nalco Chemical Co.

FENAC

Amchem Products, Inc.
Nalco Chemical Co.

FENAVAR

Amchem Products, Inc.

HCA

Allied Chemical Corp.
Southern Mill Creek Products Co., Inc.

HIBOR

Southern Mill Creek Products Co., Inc.
U.S. Borax & Chemical Corp.

KROVART

E. I. DuPont de Nemours & Co., Inc.

MBC

Hooker Chemical Corp.

MONOBOR-CHLORATE

Green Lawn Laboratories, Inc.
Southern Mill Creek Products Co., Inc.
U.S. Borax & Chemical Corp.

MONURON

The J. J. Dill Co.
C. B. Dolge Co.
E. I. duPont de Nemours & Co., Inc.
Green Lawn Laboratories, Inc.
Nalco Chemical Co.
Southern Mill Creek Products Co., Inc.

PBA

Nalco Chemical Co.
POLYBOR-CHLORATE
U.S. Borax & Chemical Corp.

PRAMITOL

The J. J. Dill Co.
Geigy Agricultural Chemicals
Great Lakes Chemical Div.
Hub States Chemical & Equip. Corp.
Nalco Chemical Co.
B. G. Pratt Co.
Southern Mill Creek Products Co., Inc.

PHYTAR 560, 160

The Ansul Co.
Southern Mill Creek Products Co., Inc.

SIMAZINE

The J. J. Dill Co.
Geigy Agricultural Chemicals
W. R. Grace & Co.
Great Lakes Chemical Div.
Hub States Chemical & Equip. Corp.
Nalco Chemical Co.
Southern Mill Creek Products Co., Inc.

SODIUM ARSENITE

Allied Chemical Corp.

R. H. Bogle Co.
Chevron Chemical Co., Ortho Div.
Chipman Div., Rhodia, Inc.
The J. J. Dill Co.
Green Lawn Laboratories, Inc.
Miller Chemical & Fertilizer Corp.
Pennwalt Chemicals Corp.
B. G. Pratt Co.
Southern Mill Creek Products Co., Inc.

SODIUM CHLORATE

Chipman Div., Rhodia, Inc.
The J. J. Dill Co.
W. R. Grace & Co.
Green Lawn Laboratories, Inc.
Hooker Chemical Co.
Nalco Chemical Co.
Pennwalt Chemicals Corp.

TBA

E. I. du Pont de Nemours & Co., Inc.
Nalco Chemical Co.
Southern Mill Creek Products Co., Inc.

TCA

Allied Chemical Corp.
Amchem Products, Inc.
The J. J. Dill Co.
The Dow Chemical Co.
Fence Painter Corp.
Nalco Chemical Co.
Robeco Chemicals, Inc.
Southern Mill Creek Products Co., Inc.

TRITAC

Great Lakes Chemical Div.

TRITAC-D

Great Lakes Chemical Div.

URAB

Allied Chemical Corp.

UREABOR

Green Lawn Laboratories, Inc.
Southern Mill Creek Products Co., Inc.
U.S. Borax & Chemical Corp.

UROX

Allied Chemical Corp.
Green Lawn Laboratories, Inc.
Southern Mill Creek Products Co., Inc.
West Chemical Products, Inc.

VACATE

Diamond Shamrock Chemical Co.

VAPAM

Stauffer Chemical Co.
Southern Mill Creek Products Co., Inc.

WEED FREE G

Chapman Chemical Co.

WEED OUT

Fence Painter Corp.

PREEMERGENCE

ALANAP

W. R. Grace & Co.
Thompson-Hayward Chemical Co.
Uniroyal Chemical, Div. of Uniroyal, Inc.

ALANAP PLUS

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AMIBEN

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**"Get rid of
those weeds."**

**"What are you
spraying?"**

Geigy herbicides can satisfy both sides.

It's tough being the man in the middle when you're armed only with excuses.

Geigy herbicides give you something better. Answers.

Answers to all kinds of weed and vegetation management problems.

Answers that should satisfy both sides: Those concerned about stopping weed pollution, and those concerned about what you're spraying.

How? After Geigy herbicides do their job, nature breaks them down. This helps you enhance the environment without injuring it. Which makes your job easier. And more satisfying.

You've got AAtrex®, Princep®, Atratul® and Pramitol® to choose from. In wettable powder, emulsifiable, pelleted and granular forms. Each is suitable

for various jobs and conditions. But all give long-term, effective performance. Singly or as the foundation for combinations of chemicals.

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Position

Company

Address

Zip

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Summers Fertilizers, Inc.

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Southern Mill Creek Products
Co., Inc.

BANDANE

The J. J. Dill Co.
Green Lawn Laboratories, Inc.
Lawnhouse Products, Inc.
O. M. Scott & Sons Co.
Velsicol Chemical Corp.

BANEFIN

Elanco Products Co.
U.S.S. Agri-Chemicals Div.

BETASAN

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W. R. Grace & Co.
O. M. Scott & Sons Co.
Stauffer Chemical Co.
U.S.S. Agri-Chemicals Div.

CALCIUM PROPYL ARSENATE

Boyle-Midway Div.
Green Lawn Laboratories, Inc.
Vineland Chemical Co.

CASORON

W. R. Grace & Co.
Great Lakes Chemical Div.
Thompson-Hayward Chemical Co.

CHLORDANE

Armour Agricultural Chemical Co.
Boyle-Midway Div.
Chipman Div., Rhodia, Inc.
Crown Chemicals
Ross Daniels, Inc.
The J. J. Dill Co.
C. B. Dolge Co.
Faesey & Besthoff, Inc.
W. R. Grace & Co.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Hub States Chemical & Equip. Corp.
Michlin Chemical Corp.
Niagara Chem. Div., FMC Corp.
S. B. Penick & Co.
B. G. Pratt Co.
Southern Mill Creek Products
Co., Inc.
Stauffer Chemical Co.
Thompson-Hayward Chemical Co.
U.S.S. Agri-Chemicals Div.
Velsicol Chemical Corp.

CIPC

Pittsburgh Plate Glass Co.
Thompson-Hayward Chemical Co.

DACTHAL

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Armour Agricultural Chemical Co.
Diamond Shamrock Chemical Co.
The J. J. Dill Co.
Fence Painter Corp.
W. R. Grace & Co.
Great Lakes Chemical Div.
Lawnhouse Products, Inc.
Southern Mill Creek Products
Co., Inc.
Thompson-Hayward Chemical Co.
U.S.S. Agri-Chemicals Div.

DIPHENAMID

Elanco Products Co.
W. R. Grace & Co.
Southern Mill Creek Products
Co., Inc.
TUCO Products Co.

DNBP

Aceto Chemical Co. Inc.
The Dow Chemical Co.
W. R. Grace & Co.
Niagara Chemical Div., FMC corp.

DYNAP

Uniroyal Chemical, Div. of Uniroyal,
Inc.

DYMD

Elanco Products Co.

ENDOTHAL

The J. J. Dill Co.
W. R. Grace & Co.
Pennwalt Chemicals Corp.

EPTAM

Boyle-Midway Div.
The J. J. Dill Co.
Faesey & Besthoff, Inc.
W. R. Grace & Co.
Southern Mill Creek Products
Co., Inc.
Stauffer Chemical Co.
Thompson-Hayward Chemical Co.
U.S.S. Agri-Chemicals Div.

HERBAN

W. R. Grace & Co.
Hercules Incorporated
Summers Fertilizers, Inc.
Thompson-Hayward Chemical Co.

HERBISAN

Roberts Chemicals, Inc.

IPC

Aceto Chemical Co. Inc.
Pittsburgh Plate Glass Co.

LEAD ARSENATE

Aceto Chemical Co. Inc.
Allied Chemical Corp.
Chevron Chemical Co., Ortho Div.
Chipman Div., Rhodia, Inc.
The J. J. Dill Co.
Green Lawn Laboratories, Inc.
Niagara Chemical Div., FMC Corp.
Southern Mill Creek Products
Co., Inc.
Summers Fertilizers, Inc.

LINURON

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E. I. duPont de Nemours & Co., Inc.

PREMERGE

Dow Chemical Co.
Southern Mill Creek Products
Co., Inc.

PLANAVIN

Shell Chemical Co.

PRE-SAN

Mallinckrodt Chemical Works
Southern Mill Creek Products
Co., Inc.

PYRAMIN 80-W

Amchem Products, Inc.

SESONE

Amchem Products, Inc.

SIMAZINE

(See Soil Sterilants)

TANDEX

Niagara Chemical Div., FMC Corp.

TILLAM

W. R. Grace & Co.
Stauffer Chemical Co.

TRICALCIUM ARSENATE

Chipman Chemical Div., Rodia, Inc.
The J. J. Dill Co.
Pennwalt Chemicals Corp.
The Sherwin-Williams Co.

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W. R. Grace & Co.

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Co., Inc.
Weyerhaeuser Co.

TUPERSAN (SIDURON)

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Armour Agricultural Chemical Co.
The J. J. Dill Co.
E. I. duPont de Nemours & Co., Inc.
Summers Fertilizers, Inc.
U.S.S. Agri-Chemicals Div.

POSTEMERGENCE**AMITROLE-T**

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W. R. Grace & Co.
Great Lakes Chemical Div.
Nalco Chemical Co.
Southern Mill Creek Products
Co., Inc.

AMMONIUM METHYL ARSONATE

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The J. J. Dill Co.
Green Lawn Laboratories, Inc.
Nalco Chemical Co.
Southern Mill Creek Products
Co., Inc.

AMMONIUM METHYL ARSONATE**PLUS 2,4-D**

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Southern Mill Creek Products
Co., Inc.

AMMONIUM SULFAMATE

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E. I. duPont de Nemours & Co., Inc.
Nalco Chemical Co.
Southern Mill Creek Products
Co., Inc.

ANSAR 529, 170, 8100

The Ansul Co.
Southern Mill Creek Products
Co., Inc.

ARSENIC ACID

Chevron Chemical Co., Ortho Div.
Chipman Div., Rhodia, Inc.
Pennwalt Chemical Corp.
The Sherwin-Williams Co.

ATRAZINE

(See Soil Sterilants)

BANVEL-D (DICAMBA)

Amchem Products, Inc.
The J. J. Dill Co.
Dow Chemical Co.
Lawnhouse Products, Inc.
O. M. Scott & Sons Co.
Southern Mill Creek Products
Co., Inc.
Velsicol Chemical Corp.

BETASAN

The J. J. Dill Co.
W. R. Grace & Co.
Southern Mill Creek Products
Co., Inc.
Stauffer Chemical Co.

BORATE COMPOUNDS

(See Soil Sterilants)

BROMACIL

(See Soil Sterilants)

BRONATE

Chipman Chemical Co., Inc.

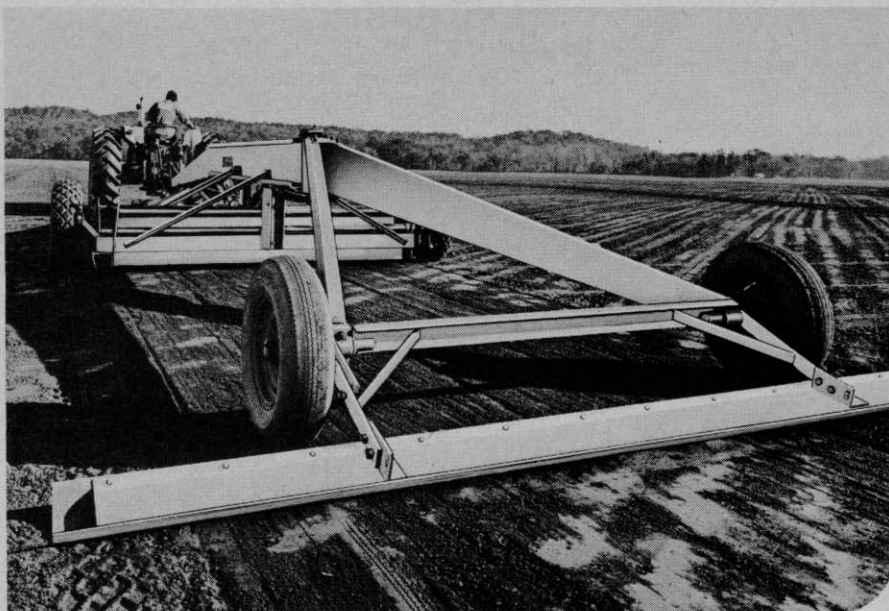


Table Top Surfaces

Leading sod farmers are using Eversman Automatic Land Levelers to make smooth, uniform seedbeds.

Also for golf courses, cemeteries, landscape architects.

Eversman Smoothers combine in one machine a field plane, open bottom scraper and a complete tillage tool for superior seedbed preparation. Smooth, level fields make possible even seeding, uniform germination with uniform turf maturity and faster, precision harvesting on fields that are easy on equipment.

The exclusive EVERSMAN Crank Axle.

The secret of the success of Eversman Land Levelers is the exclusive crank axle design. This principle is as simple as a child's teeter-totter. When one end goes up—the other goes down.

The leveler's main wheels are placed outside the cutting blade for a specific reason. These wheels serve as *feeler gauges*. They follow the contour of the

field and automatically adjust the cutting blade to the correct depth—independently of the tractor driver.

When these gauge wheels come to a high spot or ridge, they ride up on top of the ridge and this forces the blade to lower and cut through the ridge. The soil is then carried along by the blade until the gauge wheels go into a hole or depression in the field, which forces the blade to raise and fill the depression.

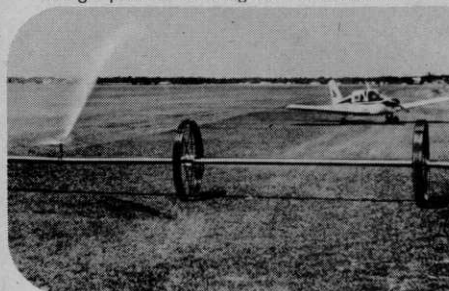
Eversman offers land smoothers in sizes and price ranges to accommodate your size operation and your regular wheel tractors, from 3-plow to 5-plow models. (Blade widths 9' or 12'; lengths of 32' or 45'.) Write for folder which gives complete information.

Eversman Manufacturing Company, Dept. F16, Curtis & Fifth Streets, Denver, Colorado 80204

Eversman



The exclusive Eversman "Hinged Frame" design permits working the field corners.



Users Tell The Story

"We have been using Eversman levelers for over fifteen years," writes Dale Habenicht of H & E Sod Nursery, Inc., Tinley Park, Illinois. "Several other types were tried, but we've always found the Eversman to be the most satisfactory. They give us the smooth surface we are looking for—with easy maneuverability."

"The H & E Sod Nursery operates three farms consisting of 1300 acres. I commute between farms with my Cherokee 180 and use the sod fields that have been leveled by the Eversman for landing strips."

"We could not properly prepare our seedbeds without the Eversman Leveler," writes Parker Sherling, Manager of Princeton Turf Farms, Inc., Centerville, Maryland.

"In preparing our fields," Parker Sherling continues, "we instruct our operators that a field is not ready until a car can be driven in any direction at 40 miles per hour over the field. It's a joke, but we actually bring our fields to this condition."

"Our operators have also developed the skill where we can shape our drainage ditches with the same machines, thus saving the rental of additional equipment."

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Southern Mill Creek Products Co., Inc.

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Nalco Chemical Co.
Vineland Chemical Co.

CALCIUM PROPYL ARSENATE

(See Preemergence Herbicides)

CYTROL

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The J. J. Dill Co.

DACAMINE

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The J. J. Dill Co.
W. R. Grace & Co.
Great Lakes Chemical Div.
Southern Mill Creek Products Co., Inc.

DACAMINE 2D/2T,4T

Diamond Shamrock Chemical Co.

DACONATE

The Diamond Shamrock Co.

DALAPON

(See Soil Sterilants)

DINITRO COMPOUNDS

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The Dow Chemical Co.
W. R. Grace & Co.
Niagara Chemical Div., FMC Corp.

DIURON

(See Soil Sterilants)

DMA (DSMA)

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Chevron Chemical Co., Ortho Div.
W. A. Cleary Corp.
The Diamond Shamrock Chemical Co.
The J. J. Dill Co.
The Dow Chemical Co.
Lawnhouse Products, Inc.
Nalco Chemical Co.
Southern Mill Creek Products Co., Inc.
U.S.S. Agri-Chemicals Div.
Vineland Chemical Co.

DOWPON

The Dow Chemical Co.
Southern Mill Creek Products Co., Inc.

ENDOTHAL

(See Preemergence Herbicides)

EPTAM

(See Preemergence Herbicides)

FENAC

(See Soil Sterilants)

FENURON

The J. J. Dill Co.
E. I. duPont de Nemours & Co., Inc.
Nalco Chemical Co.

HCA

(See Soil Sterilants)

HYVAR X BROMACIL

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E. I. duPont de Nemours & Co., Inc.

Hub States Chemical & Equip. Corp.
Southern Mill Creek Products Co., Inc.

LINURON

(See Preemergence Herbicides)

MCPA

Aceto Chemical Co., Inc.
Amchem Products, Inc.
Chipman Div., Rhodia Inc.
The Dow Chemical Co.
W. R. Grace & Co.
Great Lakes Chemical Div.
Nalco Chemical Co.

MCPP

Aceto Chemical Co., Inc.
Amchem Products Inc.
Chipman Div., Rhodia Inc.
W. A. Cleary Corp.
The J. J. Dill Co.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Nor-Am Agric. Products Co.
Shepard Chemical Industries, Inc.
U.S.S. Agri-Chemicals Div.
Vineland Chemical Co.

MILOGARD (PROPAZINE)

The J. J. Dill Co.
Geigy Agricultural Chemicals

MONURON

(See Soil Sterilants)

MSMA

Allied Chemical Corp.
The Ansul Co.
Chapman Chemical Co.
W. A. Cleary Corp.
Diamond Shamrock Chemical Co.
Great Lakes Chemical Div.
Nalco Chemical Co.
Southern Mill Creek Products Co., Inc.
Vineland Chemical Co.

PARAQUAT

Chevron Chemical Co., Ortho Div.

PENTACHLOROPHENOL

Chapman Chemical Co.
Crown Chemicals
The J. J. Dill Co.
The Dow Chemical Co.
W. R. Grace & Co.
Hub States Chemical & Equip. Corp.
Nalco Chemical Co.
Reichhold Chemicals, Inc.
Southern Mill Creek Products Co., Inc.
Thompson-Hayward Chemical Co.
Vulcan Materials Co.

PHENYLMERCURIC ACETATE (PMA)

Chemley Products
Chipman Div., Rhodia Inc.
W. A. Cleary Corp.
The J. J. Dill Co.
Green Lawn Laboratories, Inc.
Mallinckrodt Chemical Works
O. M. Scott & Sons
Southern Mill Creek Products Co., Inc.
U.S.S. Agri-Chemicals Div.
Vineland Chemical Co.

PRAMITOL

(See Soil Sterilants)

PROPAZINE

The J. J. Dill Co.
W. R. Grace & Co.

PYRAMIN 80-W

(See Preemergence Herbicides)
Boyle-Midway Div.

SILVEX

Amchem Products Inc.
Boyle-Midway Div.
Chipman Div., Rhodia, Inc.
Diamond Shamrock Chemicals Co.
The J. J. Dill Co.
The Dow Chemical Co.
Green Lawn Laboratories, Inc.
Hercules Incorporated
Nalco Chemical Co.
B. G. Pratt Co.
Southern Mill Creek Products Co., Inc.

SODIUM ARSENITE

(See Soil Sterilants)

SODIUM CACODYLATE

The Ansul Co.
Nalco Chemical Co.

TCA

(See Soil Sterilants)

THISTROL

Amchem Products, Inc.

TILLAM

(See Preemergence Herbicides)

TORDON

The Dow Chemical Co.
W. R. Grace & Co.

TRYSBEN (TBA)

The J. J. Dill Co.
E. I. duPont de Nemours & Co., Inc.
Nalco Chemical Co.

2,4-D

Amchem Products, Inc.
Boyle-Midway Div.
Chevron Chemical Co., Ortho Div.
Chipman Div., Rhodia, Inc.
Crown Chemicals
Diamond Shamrock Chemical Co.
The J. J. Dill Co.
C. B. Dolge Co.
The Dow Chemical Co.
Fence Painter Corp.
W. R. Grace & Co.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Hercules Incorporated
Hub States Chemical & Equip. Co.
Lawnhouse Products, Inc.
Monsanto Co.
Nalco Chemical Co.
Pennwalt Chemical Corp.
B. G. Pratt Co.
O. M. Scott & Sons Co.
Southern Mill Creek Products Co., Inc.
Stauffer Chemical Co.
Stull Chemical Co.
Summers Fertilizers, Inc.
Thompson-Hayward Chemical Co.
U.S.S. Agri-Chemicals Div.
West Chemical Products Inc.

2,4,5-T

Amchem Products, Inc.
Central Solvents & Chemicals Co.
Chevron Chemical Co., Ortho Div.
Chipman Div., Rhodia Inc.
Diamond Shamrock Chemical Co.
The J. J. Dill Co.
The Dow Chemical Co.
W. R. Grace & Co.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Hercules Incorporated
Hub States Chemical & Equip. Co.
Monsanto Co.
Nalco Chemical Co.
B. G. Pratt Co.
Southern Mill Creek Products Co., Inc.
Stauffer Chemical Co.

Golf course superintendents and other turf experts throughout the country rely on these outstanding Chemagro Blue Bullseye chemicals to keep their grass in first-class condition throughout the year:

® **DYRENE** 50% Wettable Powder turf fungicide provides outstanding protection against leaf spot, melting-out, copper spot, rust, *Sclerotinia* dollar spot, brown patch and snow mold. Will not clog or corrode spray equipment. No unsightly deposit. Will not stain fabric or shoes when dry.

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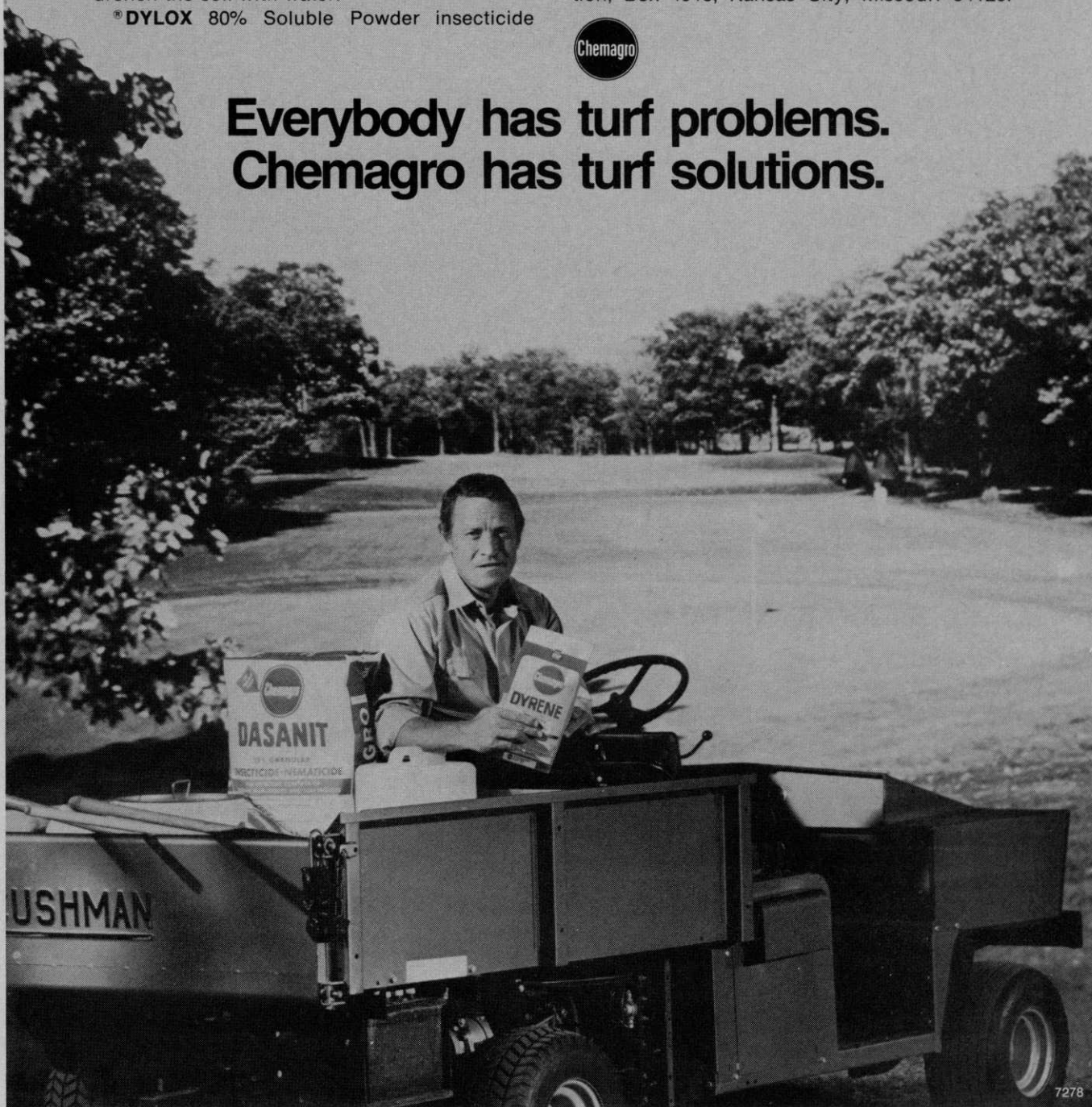
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Everybody has turf problems. Chemagro has turf solutions.



7278

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Thompson-Hayward Chemical Co.
U.S.S. Agri-Chemicals Div.

UROX

(See Soil Sterilants)

WEED FREE SW, 235

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ALGAECIDES

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Applied Biochemists, Inc.

SWIMTRINE

Applied Biochemists, Inc.

AQUATIC HERBICIDES

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Amchem Products, Inc.
American Cyanamid Co.
The J. J. Dill Co.
Great Lakes Chemical Div.
Southern Mill Creek Products Co., Inc.

AMITROLE-T

(See Preemergence Herbicides)

AMMONIUM SULFAMATE

(See Preemergence Herbicides)

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Shell Chemical Co.

AQUATHOL

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W. R. Grace & Co.
Hub States Chemical & Equip. Corp.
Pennwalt Chemicals Corp.
Southern Mill Creek Products Co., Inc.
U.S.S. Agri-Chemicals Div.

AQUATHOL PLUS

The J. J. Dill Co.
W. R. Grace & Co.
Pennwalt Chemicals Corp.
U.S.S. Agri. Chemicals Div.

CALCIUM HYPOCHLORITE

Pennwalt Chemicals Corp.
Pittsburgh Plate Glass Co.
Robeco Chemicals, Inc.

CASORON

(See Preemergence Herbicides)

COPPER SULFATE

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The J. J. Dill Co.
Green Lawn Laboratories, Inc.
Niagara Chemical Div., FMC Corp.
Phelps Dodge Refining Corp.
Robeco Chemicals, Inc.
Southern Mill Creek Products Co., Inc.
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DACAMINE

Diamond Shamrock Chemical Co.
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Great Lakes Chemical Div.
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DALAPON

(See Soil Sterilants)

DICHLONE

Aceto Chemical Co. Inc.
Allied Chemical Corp.
The J. J. Dill Co.
Naugatuck Chemical Div.
Niagara Chemical Div., FMC Corp.

DIQUAT

Chevron Chemical Co., Ortho Div.
The J. J. Dill Co.
W. R. Grace & Co.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Hub States Chemical & Equip. Corp.
Southern Mill Creek Products Co., Inc.

DIURON

The J. J. Dill Co.
Southern Mill Creek Products Co., Inc.

ERBON

The Dow Chemical Co.

FENAC

Amchem Products, Inc.

HYDROTHOL

The J. J. Dill Co.
Pennwalt Chemicals Corp.

MCPA

(See Postemergence Herbicides)

ORTHODICHLOROBENZENE

Pittsburgh Plate Glass Co.
Robeco Chemicals, Inc.

POTASSIUM ENDOTHAL

The J. J. Dill Co.
Pennwalt Chemicals Corp.

PHYGON XL

The J. J. Dill Co.

SILVEX

(See Postemergence Herbicides)

SODIUM ARSENITE

(See Soil Sterilants)

2,4-D

(See Postemergence Herbicides)

2,4,5-T

(See Postemergence Herbicides)

2-(2,4-DB)

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Chipman Div., Rhodia, Inc.
Southern Mill Creek Products Co., Inc.
Thompson-Hayward Chemical Co.

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Chevron Chemical Co., Ortho Div.
Columbia Nitrogen Corp.
The Dow Chemical Co.
E. I. duPont de Nemours & Co., Inc.

W. R. Grace & Co.
Hercules Incorporated
Monsanto Co.
Phillips Petroleum Co.
Pittsburgh Plate Glass Co.
Sohio Chemical Co.
Tennessee Corp.
U.S.S. Agri-Chemicals Div.
Vistron Corp.
Vulcan Materials Co.

AMMONIUM NITRATE

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Allied Chemical Corp.
American Cyanamid Co.
Borden Chem., Smith-Douglass Div.
Chevron Chemical Co., Ortho Div.
Columbia Nitrogen Corp.
W. R. Grace & Co.
Green Lawn Laboratories, Inc.
Hercules Incorporated
International Minerals & Chem. Corp.
Phillips Petroleum Co.
Sohio Chemical Co.
Southern Mill Creek Products Co., Inc.
Summers Fertilizers, Inc.
U.S.S. Agri-Chemicals Div.
Vistron Corp.

AMMONIUM PHOSPHATE

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Allied Chemical Corp.
American Cyanamid Co.
Best Fertilizers Co.
Borden Chem., Smith-Douglass Div.
Chevron Chemical Co., Ortho Div.
Fertilla Co.
W. R. Grace & Co.
Green Lawn Laboratories, Inc.
Monsanto Co.
Phillips Petroleum Co.
Stauffer Chemical Co.
Summers Fertilizers, Inc.
Tennessee Corp.

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Allied Chemical Corp.
American Cyanamid Co.
Best Fertilizers Co.
Borden Chem., Smith-Douglass Div.
Chevron Chemical Co., Ortho Div.
Columbia Nitrogen Corp.
The Dow Chemical Co.
Fertilla Co.
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Green Lawn Laboratories, Inc.
Phillips Petroleum Co.
Rohm and Haas Co.
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U.S.S. Agri-Chemicals Div.
Vistron Corp.

AQUA AMMONIA

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Best Fertilizers Co.
Chevron Chemical Co., Ortho Div.
Columbia Nitrogen Corp.
The Dow Chemical Co.
W. R. Grace & Co.
Green Lawn Laboratories, Inc.
Hercules Incorporated
Pennwalt Chemicals Corp.
Sohio Chemical Co.
Vistron Corp.

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—Slow Release—

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Hercules Incorporated
International Minerals & Chem. Corp.
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O. M. Scott & Sons
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OSMOCOTE, 18-6-12

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—Organic Nitrogen—

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Summers Fertilizers, Inc.
Andrew Wilson, Inc.

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POTASSIUM CHLORIDE

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Kalium Chemicals, Ltd.
Phillips Petroleum Co.
Southwest Potash Corp.
Summers Fertilizers, Inc.
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Borden Chem., Smith-Douglass Div.
Green Lawn Laboratories, Inc.
Southern Mill Creek Products Co., Inc.
Southwest Potash Div.
Summers Fertilizers, Inc.

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Borden Chem., Smith-Douglass Div.
Green Lawn Laboratories, Inc.
Mallinckrodt Chemical Works
Summers Fertilizers, Inc.

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Davison Chemical Div.
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Phillips Petroleum Co.
Plant Marvel Laboratories
Ra-Pid-Grow Corp.
Southern Mill Creek Products Co., Inc.
Summers Fertilizers, Inc.
Wilbur-Ellis Co.

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Wilbur-Ellis Co.

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Chevron Chemical Co., Ortho Div.
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International Minerals & Chem. Corp.
Phillips Petroleum Co.
Southern Mill Creek Products Co., Inc.
Stauffer Chemical Co.
Tennessee Corp.

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Chevron Chemical Co., Ortho Div.
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International Minerals & Chem. Corp.
Stauffer Chemical Co.
Tennessee Corp.

—Ammonium Phosphates—

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Columbia Nitrogen Corp.
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Chevron Chemical Co., Ortho Div.
Columbia Nitrogen Corp.
Phillips Petroleum Co.

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Columbia Nitrogen Corp.
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Monsanto Co.
Phillips Petroleum Co.
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Stauffer Chemical Co.
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Tennessee Corp.

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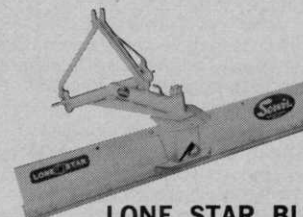
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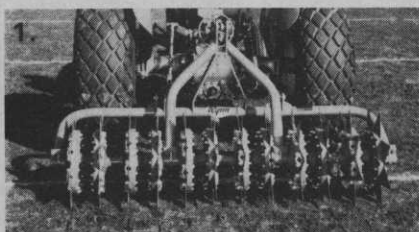
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(See Soil Conditioners)

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(See Soil Conditioners)

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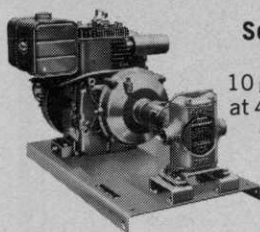
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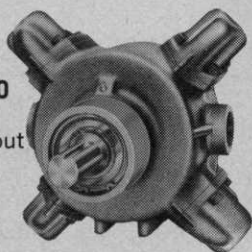
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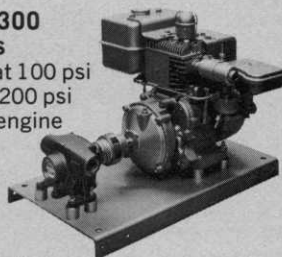


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Tennessee Corp.

COMBINATION OF TRACE ELEMENTS

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SURFACE ACTIVE AGENTS

AD-KIL

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Atlas Chemical Industries, Inc.
Cloro-Spray Corp.
C. B. Dolge Co.
Emery Industries, Inc.
General Aniline & Film Corp.
Retzliff Chemical Co.
Rohm and Haas Co.
Stepan Chemical Co.
Thompson-Hayward Chemical Co.

EMULSIFIERS

Aquatrols Corp. of America
Armour Industrial Chemical Co.
Atlas Chemical Industries, Inc.
Cloro-Spray Corp.
Collodial Products Corp.
The J. J. Dill Co.
Emery Industries, Inc.
General Aniline & Film Corp.
Great Lakes Chemical Div.
Retzliff Chemical Co.
Rohm and Haas Co.
Stepan Chemical Co.
Stull Chemical Co.
Thompson-Hayward Chemical Co.

ADJUVANTS

Collodial Products Corp.
K-D Manufacturing Co.
Stull Chemical Co.
Rhodes Chemicals
Wilco, Inc.

PLYAC

Allied Chemical Corp.

SPREADER-STICKERS

Allied Chemical Corp.
Aquatrols Corp. of America
Atlas Chemical Industries, Inc.
Chipman Div., Rhodia Inc.
W. A. Cleary Corp.
Colloidal Products Corp.
The J. J. Dill Co.
E. I. duPont de Nemours & Co., Inc.
Emery Industries, Inc.
General Aniline & Film Corp.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
B. G. Pratt Co.
Retzliff Chemical Co.
Rohm and Haas Co.
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Emery Industries, Inc.
General Aniline & Film Corp.
Rohm and Haas Co.

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Aquatrols Corp. of America
Armour Industrial Chemical Co.
Atlas Chemical Industries, Inc.
Chipman Div., Rhodia Inc.

W. A. Cleary Corp.
Cloro-Spray Corp.
Colloidal Products Corp.
The J. J. Dill Co.
Emery Industries, Inc.
General Aniline & Film Corp.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
The Larutan Corp.
Retzloff Chemical Co.
Roberts Chemicals, Inc.
Rohm and Haas Co.
Southern Mill Creek Products Co., Inc.
Stepan Chemical Co.
Thompson-Hayward Chemical Co.
Thuron Industries, Inc.
Vineland Chemical Co.
"Water In," Inc.
Weyerhaeuser Co.

BROMODINE
C & R Products Development, Inc.

BROM-O-GAS

Great Lakes Chemical Div.

BROZONE

Dow Chemical Co.

CHLOROPICRIN

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The Dow Chemical Co.
Great Lakes Chemical Div.
Michigan Chemical Co.
Southern Mill Creek Products Co., Inc.

DASANIT

Chemagro Div., Baychem Corp.
Southern Mill Creek Products Co., Inc.

D-D (VIDDEN-D)

The Dow Chemical Co.
Great Lakes Chemical Div.
Shell Chemical Co.,
Ag. Chem. Div.
Stauffer Chemical Co.

DICHLOROPROPENE COMPOUNDS

The Dow Chemical Co.

DOWFUME

The J. J. Dill Co.
The Dow Chemical Co.
Southern Mill Creek Products Co., Inc.
U.S.S. Agri-Chemicals Div.

ETHYLENE DIBROMIDE

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The Dow Chemical Co.
Ferguson Fumigants, Inc.
Great Lakes Chemical Div.
Hub States Chemical & Equip. Corp.
Michigan Chemical Co.
Southern Mill Creek Products Co., Inc.
Velsicol Chem. Corp.

FUMAZONE (NEMAGON)

The J. J. Dill Co.
The Dow Chemical Co.
Southern Mill Creek Products Co., Inc.

METHYL BROMIDE

The J. J. Dill Co.
The Dow Chemical Co.
Ferguson Fumigants, Inc.
W. R. Grace & Co.
Great Lakes Chemical Div.
Hub States Chemical & Equip. Corp.
Michigan Chemical Co.
Southern Mill Creek Products Co., Inc.
U.S.S. Agri-Chemicals Div.
Velsicol Chemical Corp.
Vulcan Materials Co.

MYLONE

Union Carbide Corp.

NEMAGON

Shell Chemical Co., Ag Chem. Div.
U.S.S. Agri-Chemicals Div.

SOILBROM-85

Great Lakes Chemical Div.

SAROLEX

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Geigy Agricultural Chemicals
Southern Mill Creek Products Co., Inc.
U.S.S. Agri-Chemicals Div.

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Englehard Minerals & Chemicals Co.

DACAGIN

Diamond Shamrock Chemical Co.
Great Lakes Chemical Div.

INVERT EMULSION ADJUVANTS

(See Emulsifiers)

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The Dow Chemical Co.

VISTIK

Hercules Incorporated

GROWTH REGULATORS

MAINTAIN CF

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TRE-HOLD

Amchem Products, Inc.

GROWTH RETARDANTS

SLO-GRO

Uniroyal Chemical Div.

CYCOCEL

American Cyanamid Co.

GIBREL

Metasol Products, Merck & Co.

MALEIC HYDRAZIDE

Aceto Chemical Co. Inc.
The Ansul Co.
W. R. Grace & Co.
Naugetuck Chemical Div.

PHOSFON

Mobil Chemical Co.

RETARD

The Ansul Co.

STREPTOMYCIN

Metasol Products, Merck & Co.

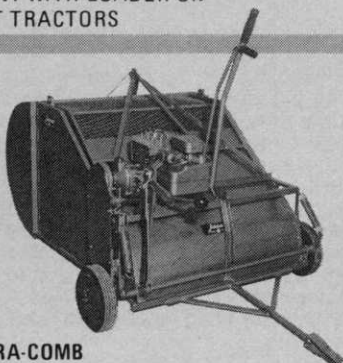
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Stauffer Chemical Co.
U.S.S. Agri-Chemicals Div.

VIDDEN D

Dow Chemical Co.

VORLEX

W. R. Grace & Co.
Great Lakes Chemical Div.
Nor-Am Agric. Products, Inc.

VPM

E. I. duPont de Nemours & Co., Inc.

MITICIDES**ACARABEN**

Geigy Agricultural Chemicals

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Naugatuck Chemical Div.
Niagara Chemical Div., FMC Corp.

BIDRIN

W. R. Grace & Co.
B. G. Pratt Co.
Shell Chemical Co.,

Ag. Chem. Div.

BINAPACRYL

Niagara Chemical Div., FMC Corp.

CHLOROBENZILATE

Aceto Chemical Co., Inc.
The J. J. Dill Co.
Hub States Chemical & Equip. Corp.

CYGON

Aceto Chemical Co., Inc.
The J. J. Dill Co.
W. R. Grace & Co.
Hub States Chemical & Equip. Corp.
B. G. Pratt Co.
Southern Mill Creek Products Co., Inc.
Thompson-Hayward Chemical Co.

DELNAV

Great Lakes Chemical Div.
Hercules Incorporated
Thompson-Hayward Chemical Co.

DIBROM

Chevron Chemical Co., Ortho Div.
Chipman Chemical Co.
The J. J. Dill Co.
W. R. Grace & Co.
Great Lakes Chemical Div.
Hub States Chemical & Equip. Corp.
Southern Mill Creek Products Co., Inc.
Stauffer Chemical Co.

DIMITE

The Sherwin-Williams Co.

ETHION

The J. J. Dill Co.

Niagara Chemical Div., FMC Corp.
B. G. Pratt Co.
U.S.S. Agri-Chemicals Div.

GENITE

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W. R. Grace & Co.

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(See Fungicides)

KELTHANE

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W. R. Grace & Co.
Hub States Chemical & Equip. Corp.
Rohm and Haas Co.

MORESTAN

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The J. J. Dill Co.

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PENTAC

Great Lakes Chemical Div.
Hooker Chemical Corp.

SYSTOX

Chemagro Corp.
The J. J. Dill Co.
Niagara Chemical Div., FMC Corp.
B. G. Pratt Co.
Southern Mill Creek Products Co., Inc.

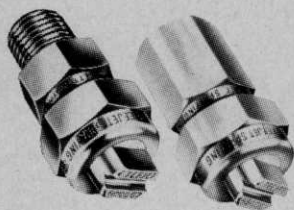
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Great Lakes Chemical Div.
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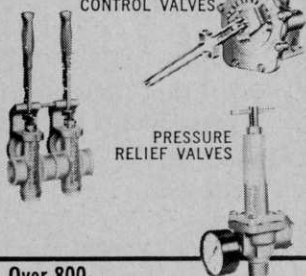
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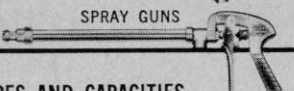
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Michlin Chemical Corp.
Southern Mill Creek Products Co., Inc.

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Shell Chemical Co., Agr. Chem. Div.
Southern Mill Creek Products Co., Inc.

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Hub States Chemical & Equip. Corp.
Shell Chemical Co.,
Ag. Chem. Div.
Southern Mill Creek Products Co., Inc.
Summers Fertilizers, Inc.
Thompson-Hayward Chemical Co.

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Pennwalt Chemicals Corp.
The Sherwin-Williams Co.
Southern Mill Creek Products Co., Inc.

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International Minerals & Chemical Corp.
Pennsalt Chemical Corp.

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West Chemical Products, Inc.

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W. R. Grace & Co.

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Hub States Chemical & Equip. Corp.
Lethelin Products Co., Inc.
Niagara Chemical Div., FMC Corp.
Southern Mill Creek Products Co., Inc.

BIDRIN

(See Miticides)

CHLORDANE

(See Preemergence Herbicides)

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The Sherwin-Williams Co.

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Crown Chemicals
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Great Lakes Chemical Div.
Hub States Chemical & Equip. Corp.
B. G. Pratt Co.
Southern Mill Creek Products Co., Inc.
Thompson-Hayward Chemical Co.

DDD (TDE)

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Niagara Chemical Div., FMC Corp.
Rohm and Haas Co.
Southern Mill Creek Products Co., Inc.

DDT

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Bonide Chemical Co., Inc.
Chevron Chemical Co., Ortho Div.
Chipman Div., Rhodia Inc.
Diamond Shamrock Chemical Co.
The J. J. Dill Co.
Faesey & Besthoff, Inc.
Gabriel Chemicals, Ltd.
W. R. Grace & Co.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Hub States Chemical & Equip. Corp.
Montrose Chemical Co.
S. B. Penick & Co.
Pennwalt Chemicals Corp.
B. G. Pratt Co.
Southern Mill Creek Products Co., Inc.
Stauffer Chemical Co.
Thompson-Hayward Chemical Co.

DDVP (VAPONA)

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Hub States Chemical & Equip. Corp.
S. B. Penick & Co.
B. G. Pratt Co.
Shell Chemical Co.,
Ag. Chem. Div.
Southern Mill Creek Products Co., Inc.
Thompson-Hayward Chemical Co.
West Chemical Products, Inc.

DEF

Chemagro Corp.

DELNAV

(See Miticides)

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The J. J. Dill Co.
Geigy Agricultural Chemicals
W. R. Grace & Co.
Great Lakes Chemical Div.
Hub States Chemical & Equip. Corp.
S. B. Penick & Co.
B. G. Pratt Co.
Southern Mill Creek Products Co., Inc.
U.S.S. Agri-Chemicals Div.

DIBROM

(See Miticides)

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Chipman Div., Rhodia, Inc.
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Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Hub States Chemical & Equip. Corp.
S. B. Penick & Co.
Pennwalt Chemicals Corp.
B. G. Pratt Co.
Shell Chemical Co.,
Ag. Chem. Div.
Southern Mill Creek Products Co., Inc.
Stauffer Chemical Co.
Thompson-Hayward Chemical Co.
U.S.S. Agri-Chemicals Div.

DIMETHRIN

McLaughlin Gormley King Co.

DIPTEREX

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Hub States Chemical & Equip. Corp.
Southern Mill Creek Products Co., Inc.

DI-SYSTON

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Chemagro Div., BayChem Corp.
Ross Daniels, Inc.
The J. J. Dill Co.
The Dow Chemical Co.
W. R. Grace & Co.
Southern Mill Creek Products Co., Inc.

DNOC

Niagara Chemical Div., FMC Corp.

DRINOX

Morton Chemical Co.

DURSBAN

Dow Chemical Co.
Southern Mill Creek Products Co., Inc.

DYLOX

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The J. J. Dill Co.
W. R. Grace & Co.
Southern Mill Creek Products Co., Inc.

ENDOSULFAN (THIODAN)

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Chipman Chemical Co., Inc.
The J. J. Dill Co.

ENDRIN

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W. R. Grace & Co.
Great Lakes Chemical Div.

Hub States Chemical & Equip. Corp.
 Shell Chemical Co.,
 Ag. Chem. Div.
 Southern Mill Creek Products
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 Stauffer Chemical Co.
 Thompson-Hayward Chemical Co.
 Velsicol Chemical Corp.

ETHION

(See Miticides)

GARDONA

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GUTHION

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 Niagara Chemical Div., FMC Corp.
 Southern Mill Creek Products
 Co., Inc.

HEPTACHLOR

Armour Agricultural Chemical Co.
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 The J. J. Dill Co.
 Great Lakes Chemical Div.
 Hub States Chemical & Equip. Corp.
 Pennwalt Chemicals Corp.
 B. G. Pratt Co.
 Southern Mill Creek Products
 Co., Inc.
 Stauffer Chemical Co.
 Thompson-Hayward Chemical Co.
 Velsicol Chemical Corp.

KORLAN

The J. J. Dill Co.
 The Dow Chemical Co.
 Hub States Chemical & Equip. Corp.
 Southern Mill Creek Products
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LEAD ARSENATE

(See Preemergence Herbicides)

LETHANE

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 Hub States Chemical & Equip. Corp.
 Michlin Chemical Corp.
 Rohm and Haas Co.
 Southern Mill Creek Products
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LIME SULFUR

Allied Chemical Corp.
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 Miller Chemical & Fertilizer Corp.

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 Chevron Chemical Co., Ortho Div.
 Chipman Div., Rhodia, Inc.
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 C. B. Dolge Co.
 Great Lakes Chemical Div.
 Green Lawn Laboratories, Inc.
 Hooker Chemical Corp.
 Hub States Chemical & Equip. Corp.
 Michlin Chemical Corp.
 Niagara Chemical Div., FMC Corp.
 S. B. Penick & Co.
 Pennwalt Chemicals Corp.
 B. G. Pratt Co.
 Robeco Chemicals Inc.
 Southern Mill Creek Products
 Co., Inc.
 Thompson-Hayward Chemical Co.
 Vineland Laboratories, Inc.

MALATHION

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 Armour Agricultural Chemical Co.
 Borden Chem., Smith-Douglass Div.
 Boyle-Midway Div.
 Chipman Div., Rhodia, Inc.
 Crown Chemicals

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 W. R. Grace & Co.
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 Green Lawn Laboratories, Inc.
 Hub States Chemical & Equip. Corp.
 Michlin Chemical Corp.
 Niagara Chemical Div., FMC Corp.
 S. B. Penick & Co.
 Pennwalt Chemicals Corp.
 B. G. Pratt Co.
 Southern Mill Creek Products
 Co., Inc.
 Stauffer Chemical Co.
 Thompson-Hayward Chemical Co.
 U.S.S. Agri-Chemicals Div.
 West Chemical Products, Inc.
 Vineland Laboratories, Inc.

MATACIL

Chemagro Corp.

METALDEHYDE

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 Commercial Solvents Corp.
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 Southern Mill Creek Products
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META-SYSTOX-R

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 Chemagro Div., Baychem Corp.
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 B. G. Pratt Co.
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 Armour Agricultural Chemical Co.
 Boyle-Midway Div.
 The J. J. Dill Co.
 E. I. duPont de Nemours & Co., Inc.
 W. R. Grace & Co.
 Great Lakes Chemical Div.
 Hub States Chemical & Equip. Corp.
 B. G. Pratt Co.
 Southern Mill Creek Products
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 West Chemical Products Inc.

METHYL PARATHION

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 Hercules Incorporated
 Niagara Chemical Div., FMC Corp.
 Pennwalt Chemicals Corp.
 Stauffer Chemical Co.
 Velsicol Chemical Corp.

MORESTAN

Chemagro Corp.

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Borden Chem., Smith-Douglass Div.
 Chevron Chemical Co., Ortho Div.
 The J. J. Dill Co.
 Great Lakes Chemical Div.
 Green Lawn Laboratories, Inc.
 Niagara Chemical Div., FMC Corp.
 B. G. Pratt Co.
 Southern Mill Creek Products
 Co., Inc.

OILS, SUMMER

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PARATHION

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 American Potash & Chemical Corp.
 Chevron Chemical Co., Ortho Div.

Chipman Div., Rhodia, Inc.
 W. R. Grace & Co.
 Great Lakes Chemical Div.
 Green Lawn Laboratories, Inc.
 Monsanto Co.
 Niagara Chemical Div., FMC Corp.
 Pennwalt Chemicals Corp.
 Stauffer Chemical Co.
 Velsicol Chemical Corp.

PARIS GREEN

Chipman Div., Rhodia, Inc.
 Southern Mill Creek Products
 Co., Inc.

PENTACHLORAPHENOL

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 The Dow Chemical Co.
 Hub States Chemical & Equip. Corp.
 Michlin Chemical Corp.
 Southern Mill Creek Products
 Co., Inc.

PHENOTHIAZINE

Prentiss Drug & Chemical Co.
 Vineland Laboratories, Inc.

PHORATE (THIMET)

American Cyanamid Co.
 Niagara Chemical Div., FMC Corp.
 Southern Mill Creek Products
 Co., Inc.

PHOSDRIN

Chipman Div., Rhodia, Inc.
 W. R. Grace & Co.
 Great Lakes Chemical Div.
 Shell Chemical Co.,
 Ag. Chem. Div.
 Southern Mill Creek Products
 Co., Inc.

PHOSPHAMIDON (DIMECRON)

Chevron Chemical Co., Ortho Div.
 W. R. Grace & Co.
 Great Lakes Chemical Div.

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 C. B. Dolge Co.
 Great Lakes Chemical Div.
 Hub States Chemical & Equip. Corp.
 McLaughlin Gormley King Co.
 Niagara Chemical Div., FMC Corp.
 S. B. Penick & Co.
 B. G. Pratt Co.
 Prentiss Drug & Chemical Co.
 Southern Mill Creek Products
 Co., Inc.
 West Chemical Products Inc.

PYRETHRUM-RYANIA

S. B. Penick & Co.

ROTENONE

The J. J. Dill Co.
 W. R. Grace & Co.
 Hub States Chemical & Equip. Corp.
 Michlin Chemical Corp.
 S. B. Penick & Co.
 B. G. Pratt Co.
 Southern Mill Creek Products
 Co., Inc.

RYANIA

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 S. B. Penick & Co.

SEVIN (CARBARYL)

Armour Agricultural Chemical Co.
 Borden Chem., Smith-Douglass Div.
 The J. J. Dill Co.
 W. R. Grace & Co.
 Great Lakes Chemical Div.
 Hub States Chemical & Equip. Corp.
 Lawnhouse Products, Inc.
 Michlin Chemical Corp.
 Niagara Chemical Div., FMC Corp.
 B. G. Pratt Co.

O. M. Scott & Sons Co.
Stauffer Chemical Co.
Southern Mill Creek Products
Co., Inc.
Thompson-Hayward Chemical Co.
U.S.S. Agri-Chemicals Div.
Union Carbide Corp.
Vineland Laboratories, Inc.

SINOX

Niagara Chemical Div., FMC Corp.

STROBANE

The J. J. Dill Co.
W. R. Grace & Co.
McLaughlin Gormley King Co.
Thompson-Hayward Chemical Co.

SYSTOX

(See Miticides)

TEPP

Chipman Div., Rhodia, Inc.
W. R. Grace & Co.
Great Lakes Chemical Div.
Niagara Chemical Div., FMC Corp.

THANITE

The J. J. Dill Co.
Hercules Incorporated
Southern Mill Creek Products
Co., Inc.

TOXAPHENE

Chipman Div., Rhodia, Inc.
W. R. Grace & Co.
Great Lakes Chemical Div.
Hercules Incorporated
Niagara Chemical Div., FMC Corp.
Southern Mill Creek Products
Co., Inc.
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Chemicals

TRITHION

(See Miticides)

V-C 13

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Pennwalt Chemicals Corp.
Southern Mill Creek Products
Co., Inc.

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Southern Mill Creek Products
Co., Inc.

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U.S.S. Agri-Chemicals Div.

AGROX

Chipman Chemical Co., Inc.

BENOMYL (BENLATE)

E. I. duPont de Nemours & Co., Inc.

BOTRAN

TUCO Products Co.

CADMINATE

Mallinckrodt Chemical Works

CADMIUM CARBONATE

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Green Lawn Laboratories, Inc.
Mallinckrodt Chemical Works

CADMIUM CHLORIDE

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W. A. Cleary Corp.
The J. J. Dill Co.
Green Lawn Laboratories, Inc.
Mallinckrodt Chemical Works
Metasol Products, Merck & Co.
U.S.S. Agri-Chemicals Div.
Vineland Chemical Co.

CADMIUM SEBACATE (KROMAD)

Armour Agricultural Chemical Co.
Mallinckrodt Chemical Works
Southern Mill Creek Products
Co., Inc.

CADMIUM SUCCINATE (CADMINATE)

Armour Agricultural Chemical Co.
The J. J. Dill Co.
Mallinckrodt Chemical Works

CALO-CLOR

Mallinckrodt Chemical Works

CALOCURE

Mallinckrodt Chemical Works

CALO-GRAN

Mallinckrodt Chemical Works

CALOMEL

The J. J. Dill Co.
Mallinckrodt Chemical Works
Metasol Products, Merck & Co.

CAPTAN

Chevron Chemical Co., Ortho Div.
The J. J. Dill Co.
W. R. Grace & Co.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Hub States Chemical & Equip. Corp.
Southern Mill Creek Products
Co., Inc.
Stauffer Chemical Co.

CERESAN

E. I. duPont de Nemours & Co., Inc.
Great Lakes Chemical Div.

CHIPCOTE

Chipman Chemical Co., Inc.

CHLORANIL

Aceto Chemical Co. Inc.
W. R. Grace & Co.
Nauगतuck Chemical Div.

COPPER SULFATE

(See Aquatic Herbicides)

COPPER SULFATE, TRI-BASIC

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Mallinckrodt Chemical Works
Niagara Chemical Div., FMC Corp.
Phelps Dodge Refining Corp.
Southern Mill Creek Products
Co., Inc.
Tennessee Corp.

COPPER ZINC CHROMATE

W. R. Grace & Co.
Miller Chemical & Fertilizer Corp.

CORROSIVE SUBLIMATE

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Green Lawn Laboratories, Inc.
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Tuco Div., Upjohn Co.

CYPREX

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The J. J. Dill Co.
Niagara Chemical Div., FMC Corp.

DACONIL 2787

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Great Lakes Chemical Div.
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Co., Inc.

DEXON

Chemagro Div., Baychem Corp.
The J. J. Dill Co.

DICHLONE

(See Aquatic Herbicides)

DITHANE

Rohm and Haas Co.

DYRENE

Armour Agricultural Chemical Co.
Chemagro Div., Baychem Corp.
The J. J. Dill Co.
W. R. Grace & Co.
Southern Mill Creek Products
Co., Inc.
U.S.S. Agri-Chemicals Div.

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W. R. Grace & Co.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Niagara Chemical Div., FMC Corp.
Pennwalt Chemical Corp.
Shepard Chemical Industries, Inc.
Velsicol Chemical Corp.

FOLPET

Aceto Chemical Co., Inc.
Chevron Chemical Co., Ortho Div.
W. R. Grace & Co.
Green Lawn Laboratories, Inc.
Stauffer Chemical Co.

FORE

The J. J. Dill Co.
Green Lawn Laboratories, Inc.
Rohm and Haas Co.
Southern Mill Creek Products
Co., Inc.
U.S.S. Agri-Chemicals Div.

GLYODIN

W. R. Grace & Co.
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Rohm and Haas Co.
Southern Mill Creek Products
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KROMA-CLOR

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KROMAD

Mallinckrodt Chemical Works

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Great Lakes Chemical Div.
Niagara Chemical Div., FMC Corp.
Pennwalt Chemicals Corp.
B. G. Pratt Co.
Rohm and Haas Co.
Southern Mill Creek Products
Co., Inc.

MEMMI

The J. J. Dill Co.
Southern Mill Creek Products
Co., Inc.
Velsicol Chemical Corp.

MERCURY COMPOUNDS

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Chipman Div., Rhodia, Inc.
W. A. Cleary Corp.
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Green Lawn Laboratories, Inc.
Mallinckrodt Chemical Works
Metasol Products, Merck & Co.
Robeco Chemicals, Inc.
Shepard Chemical Industries, Inc.
Southern Mill Creek Products
Co., Inc.
Summers Fertilizers, Inc.
Thompson-Hayward Chemical Co.
U.S.S. Agri-Chemicals Div.
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MOROCIDE

Niagara Chemical Div., FMC

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Great Lakes Chemical Div.
Nor-Am Agri. Products, Inc.

PENTACHLORONITROBENZENE

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Olin Mathieson Chemical Corp.
Shepard Chemical Industries, Inc.
Tucos Div., UpJohn Co.
Velsicol Chemical Corp.

PHENMAD

Mallinckrodt Chemical Works

PHENYLMERCURIC ACETATE

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Chemley Products Co.
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W. A. Cleary Corp.
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Green Lawn Laboratories, Inc.
Mallinckrodt Chemical Works
Metasol Products, Merck & Co.
O. M. Scott & Sons Co.
Velsicol Chemical Corp.
Vineland Chemical Co.

PIPERALIN

Elanco Products Co.

PIPRON

Elanco Products Co.

POLYRAM

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Niagara Chemical Div., FMC Corp.

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SPRING-BAK

Mallinckrodt Chemical Works

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W. R. Grace & Co.
Niagara Chemical Div., FMC Corp.
B. G. Pratt Co.
The Sherwin-Williams Co.
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Stauffer Chemical Co.

TERSAN OM

E. I. duPont de Nemours & Co., Inc.

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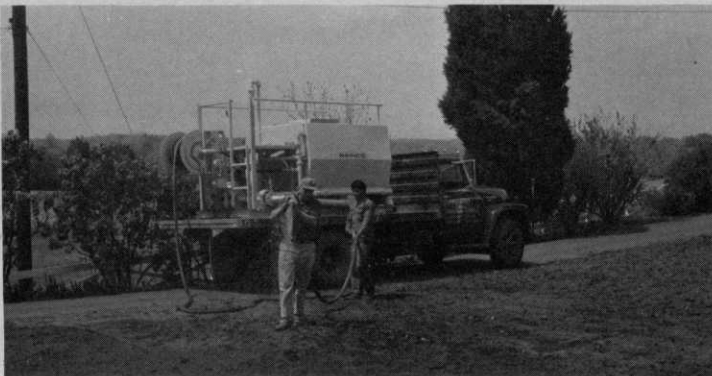


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Williamstown Irrigation, Inc.

IRRIGATION SYSTEMS, COMPLETE

Adamson Sprinkler Co.
John Bean Div., FMC Corp.

Buckner Industries, Inc.
ENESCO, Inc.
Febco, Inc.
International Plastics, Inc.
Irrigation Accessories Co.
Lockwood Corp.
Oliver Corp.
Plains Supply Co.
Rain Jet Corp.
Rain-O-Mat Sprinklers
Sprinkler Irrigation Supply
Submatic, Inc.
Telsco Industries
The Thompson Manufacturing Co.
Toro Manufacturing Corp.
Turf Irrigation Corp.
Vermeer Manufacturing Co.
R. M. Wade & Co.
Williamstown Irrigation, Inc.

KNIVES, INJECTOR

Contree Sales, Inc.

LAWN CARTS

J. I. Case Co., Outdoor Power
Equipment Div.

LEAF BLOWERS

American-Lincoln Corp.
Billy Goat Industries, Inc.
Clipper Mfg. Co.
The J. J. Dill Co.
Finn Equipment Co.
Gravely Corp.
Jacobsen Mfg. Co.
Lindell Pattern Works
F. E. Myers & Bro. Co.
Papec Machine Co.
Parker Sweeper Co.
Rogers Mfg. Co., Inc.
Solo Motors, Inc.
Southern Mill Creek Products
Co., Inc.

The Vandermolen Co.

LEVELERS

Deere & Co.
DriAll Drier's Inc.
Eversman Mfg. Co.
International Harvester Co.
MinnTurf Equipment Designs Corp.
Side-Winder Plant, FMC Corp.
Slope Tractor, Inc.
Special Products Co.
Viking Mfg. Co.
York Modern Corp.

LITTER RECEPTACLES

Bemis Mfg. Co.
Friend Mfg. Corp.
Howard Metalcraft Co.
Victor Stanley, Inc.

LOADERS, BOOM

J. I. Case Co.
Century Engineering Corp.
Deere & Co.
Dico Side-O-Matic
Howard Rotavator Co., Inc.
Pitman Mfg. Co.
Waldon, Inc.

LOADER, SELF PROPELLED

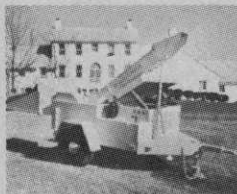
Clark Equipment Co.
Erickson Corp.

LOADERS, TRACTOR MOUNTED

Allis-Chalmers Mfg. Co.
Arps Corp.
J. I. Case Co.
Danuser Machine Works
Deere & Co.
Engineering Products Co.
Ford Motor Co., Tractor Div.
Gravely Corp.

SAFETY TEST HEAVY DUTY

WOOD/CHUCK®



Okay. But what puts Safety Test Wood/Chuck in a class by itself where chippers are concerned? Just superior performance, economy and safety.

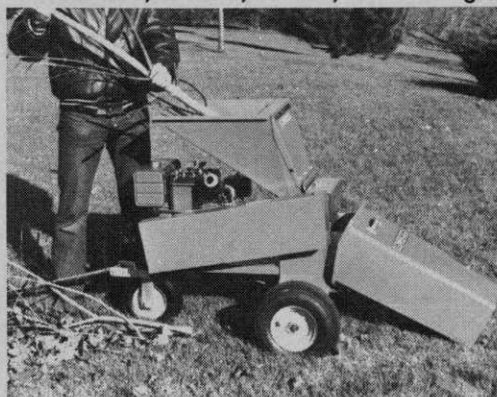
First, there's less down-time for blade adjustment and replacement. The Wood/Chuck's

blades lock into the rugged rotor and automatically position properly. This takes just minutes for a Wood/Chuck but often requires hours with other chippers. Wood/Chuck's blades are "V"-grooved for full length support that means extra safety. And where most "chippers'" blades are so positioned that chips are actually crushed away . . . the Wood/Chuck's shallow blade angle slices chips away. Goodbye friction, wasted energy and vibration; jobs go faster, fuel goes farther.

Only the Wood/Chuck has really been built from the ground up as a chipper for heavy-duty use. It's modern, functional, no-nonsense design sets it apart. Above all, the Safety Test Wood/Chuck has that built-in Safety Test "Extra Measure" of dependability. You can rely on it to do a full day's work . . . day after day, year after year. Frankly, there are dozens of reasons why no other chipper compares with the Wood/Chuck. You owe it to yourself to get the full story from your Wood/Chuck representative or write Safety Test & Equipment Co., Inc., P.O. Drawer 400, Shelby, N. C. 28150.

THE ALL-PURPOSE CHOPPER

To Dispose Of Your
Branches, Stalks, Vines, Trimmings



LINDIG KAJON CHOPPER

Now there is a 4 and 7 hp chopper to rapidly process branches (up to 2 1/4" dia.), yard trimmings and leaves. Kajon works just like the large chippers to turn leftover organic material into instant mulch. Bag it for convenient disposal or re-use it as natural fertilizer. Kajon replaces outdoor burning, helps keep our air a little cleaner. Gas engine or electric motor available.

LINDIG

Manufacturing Corp.

1877 W. County Rd. C
St. Paul, Minn. 55113

PLEASE RUSH INFORMATION

Name _____

Address _____

International Harvester Co.
Johnson Hydraulic Equip. Co.
Koyker Mfg. Co.
Massey-Ferguson, Inc.
Melroe Mfg. Co.
Oliver Corp.
Rear's Mfg. Co.
The Sun-Mastr Corp.
Vermeer Manufacturing Co.

LOG SPLITTERS

Lupton Tree Service
Piqua Engineering, Inc.
Vermeer Mfg. Co.
Waco Lickity Log Splitter Div.

MARKERS, LINE

Bunton Company
Fox Valley Marking Systems
Goodall Div.

MASKS, DUST

Acme Protection Equipment Corp.
American Optical Co.
The J. J. Dill Co.
Great Lakes Chemical Div.
Hub States Chemical & Equip. Corp.
Martindale Electric Co.
Mine Safety Appliances Co.
Pulmosan Safety Equipment Corp.
Scott Aviation Corp.
The Vandermolen Co.
Welsh Mfg. Co.
Willson Products Div.

MASKS, GAS

Acme Protection Equipment Corp.
The J. J. Dill Co.
Great Lakes Chemical Div.
Hub States Chemical & Equip. Corp.
Mine Safety Appliances Co.
Pulmosan Safety Equipment Corp.
Scott Aviation Corp.
Willson Products Div.

MATERIALS HANDLING

B.A.G. Corp.
Bemis Mfg. Co.

MEASURING WHEEL

Ferguson Fumigants, Inc.
Gandy Co.
Great Lakes Chemical Div.
B. G. Reilly Co.
Rolatape, Inc.

MISCELLANEOUS

CLUTCHES

Mercury Clutch Div.

COMMUNICATION SYSTEMS

Motorola Comm. & Elect., Inc.

CONDENSATION DETECTOR

AgTronics Mfg. Co.

CONVEYORS, PORTABLE, BELT

Stone Conveyor Co., Inc.

DIFFERENTIALS

Tecumseh Products Co.

EDGING, LAWN

Ryerson Steel

FOAM ACTIVATOR

Wilsco, Inc.

FLOTATION TIRES & WHEELS

Daymon Mfg. Co.
Martin Tire & Supply, Inc.

GARDEN TOOLS

Village Blacksmith

GASOLINE ENGINE

Rudd Manufacturing, Inc.
Teledyne Wisconsin Motor Corp.

GEARED ANGLE DRIVES

Tecumseh Products Co.

GOLF COURSE EQUIPMENT

(Poles, Cups, Ball Washers, Signs, Etc.)
Standard Mfg. Co.

HYPO-HATCHET INJECTOR

The Ansul Co.

INJECTORS, CHEMICAL, FERTILIZER

C.L.M. National
Creative Sales, Inc.
Inject-O-Meter Mfg. Co., Inc.

LEAKAGE/SPILLAGE DETECTOR

AgTronics Mfg. Co.

LIQUID LEVEL DETECTOR

AgTronics Mfg. Co.

ROTARY LAWN MOWER BLADES

The Whitaker Manufacturing Co.

RUST PREVENTATIVE

WD-40 Company

SICKLE BAR MOWER REPAIRS

The Whitaker Manufacturing Co.

SOLIDS SEPARATOR

A. V. Electronics, Inc.

STORAGE TENDER UNIT

Rudd Manufacturing Co.

TRANSAXLES

Tecumseh Products Co.

TRANSMISSIONS

MinnTurf Equipment Designs Corp.
Tecumseh Products Co.
Turf Racks

MISTBLOWERS, BACKPACK

Asplundh Tree Expert Co.
Buffalo Turbine Ag. Equip. Co.
Burton Supply Co., Inc.
The J. J. Dill Co.
Great Lakes Chemical Div.
Hanson Equipment Co.
Hub States Chemical & Equip. Corp.
H. D. Hudson Mfg. Co.
Silver Creek Precision Corp.
Solo Motors, Inc.
Southern Mill Creek Products Co., Inc.
Superior Chemical Products, Inc.
Tradewinds, Inc.
The Vandermolen Co.

MISTBLOWERS, ELECTRIC

Root-Lowell Corp.

MISTBLOWERS, SELF-PROPELLED

Solo Motors, Inc.

MISTBLOWERS, TRUCK-MOUNTED

Ag King (Div. of TAGS)
Ampulco (Hardie)
Aquanautics, Inc.
John Bean Div., FMC Corp.
Besler, A Div. of C-C Industries
The Broyhill Co.
Buffalo Turbine Ag. Equip. Co.
The J. J. Dill Co.
Finn Equipment Co.
F. E. Myers & Bro. Co.
Silver Creek Precision Corp.
Solo Motors, Inc.
Southern Mill Creek Products Co., Inc.
Superior Chemical Products, Inc.
The Vandermolen Co.

MISTBLOWERS, NOZZLE PARTS

Ag King (Div. of TAGS)
John Bean Div., FMC Corp.
The Broyhill Co.
Buffalo Turbine Equipment Co.
Century Engineering Corp.
Delevan Mfg. Co.
The J. J. Dill Co.
Great Lakes Chemical Div.
H. D. Hudson Mfg. Co.
F. E. Myers & Bro. Co.
Solo Motors, Inc.
Southern Mill Creek Products Co., Inc.

MOISTURE METERS

AgTronics Mfg. Co.
WestBerg Mfg. Co.

MOTORS

Allegretti & Co.
L. M. Cox Mfg. Co.
International Harvester Co.
Onan Div., Studebaker Corp.
Practical Products Corp.
Sprayco Mfgs., Inc.
Superior Chemical Products, Inc.
Tecumseh Products Co.
The Vandermolen Co.
Waukesha Motor Co.

MOWER REPAIR STANDS (HYDRAULIC & MANUAL)

G & H Products, Inc.

MOWERS, BLADES & CUTTING PARTS

The Whitaker Manufacturing Co.

MOWERS, FLAIL

John Bean Div., FMC Corp.
BMB Co., Inc.
Brillion Iron Works, Inc.
E. L. Caldwell & Sons, Inc.
J. I. Case Co.
Deere & Co.
Excel Industries, Inc.
Ford Motor Co., Tractor Div.
Gravely Corp.
Henderson Mfg. Co.
Hoffco, Inc.
International Harvester Co.
Lakes Supply Co., Inc.
Massey-Ferguson, Inc.
Mott Corp.
Ryan Equipment Co.
Side-Winder Plant, FMC Corp.
Slope Tractor, Inc.
The Sun-Mastr Corp.
Terrain King Corp.

MOWERS, GANG

Allis-Chalmers Mfg. Co.
Bolens Div., FMC Corp.
J. I. Case Co.
Deere & Co.
Ford Motor Co., Tractor Div.
Gravely Corp.
Hahn Inc., — West Points Products
International Harvester Co.
Jacobsen Mfg. Co.
Lakes Supply Co., Inc.
National Mower Co.
Ransomes, Sims, Jeffries, Ltd.
Roseman Mower Corp.
Roxy-Bonner, Inc.
Simplicity Mfg. Co., Inc.
Southern Mill Creek Products Co., Inc.
The Sun-Mastr Corp.
Toro Manufacturing Corp.

MOWERS, GREENS

Hahn Inc., — West Points Products
Jacobsen Mfg. Co.
Ransomes, Sims, Jeffries, Ltd.
Toro Mfg. Corp.

MOWERS, REEL

Bolens Div., FMC Corp.
Bunton Company
J. I. Case Co.
Devere-Locke Div., Locke Mfg. Co.
Engineering Products Co.
Ford Motor Co., Tractor Div.
Goodall Div.
Gravely Corp.
International Harvester Co.
Jacobsen Mfg. Co.
Jari Corp.
Kin-Co
Lakes Supply Co., Inc.
Locke Mfg. Co., Inc.
MTD Products, Inc.
National Mower Co.
Roseman Mower Corp.
Roxy-Bonner, Inc.
Simplicity Mfg. Co., Inc.
Southern Mill Creek Products Co., Inc.
The Sun-Mastr Corp.
Toro Mfg. Corp.
Wheel-Horse Products, Inc.

MOWERS, ROTARY

Allis-Chalmers Mfg. Co.
Ariens Co.
Avco Ezee Flow Div.
Bachtold Bros.
John Bean Division, FMC Corp.
The Black & Decker Mfg. Co.
John Blue Co.
BMB Co.
Bolens Div., FMC Corp.
Brillion Iron Works, Inc.
Bunton Co.
E. L. Caldwell & Sons, Inc.
J. I. Case Co.
Deere & Co.
Engineering Products Co.
Excel Industries, Inc.
Ford Motor Co., Tractor Div.
Gale Products
Goodall Div.
Gravely Corp.
Heckendorn Mfg. Co., Inc.
Homelite Div., Textron, Inc.
International Harvester Co.
Jacobsen Mfg. Co.
Jari Corp.
Kromer Co.
Lakes Supply Co., Inc.
Locke Mfg. Co., Inc.
Massey-Ferguson, Inc.
MTD Products, Inc.
Oliver Corp.
J. R. Pendleton & Son Inc.
Pennington Mfg. Co.
Quick Manufacturing, Inc.
Rear's Mfg. Co.
Servis Equip. Co.
Side-Winder Plant, FMC Corp.
Simplicity Mfg. Co., Inc.
Slope Tractor, Inc.
Speedex Tractor Co.
Solo Motors, Inc.
Southern Mill Creek Products Co., Inc.
The Sun-Master Corp.
Terrain King Corp.
Thor Power Tool Co.
Toro Manufacturing Corp.
Triumph Machinery Co.
Wheel-Horse Products, Inc.
Yazoo Mfg. Co., Inc.

MOWERS, SICKLE BAR

Allis-Chalmers Mfg. Co.
Gravely Tractors
International Harvester Co.
Jacobsen Mfg. Co.
Jari Corp.
Massey-Ferguson, Inc.
Simplicity Mfg. Co., Inc.

MOWERS, VERTICAL (De-Thatchers)

Allis-Chalmers Mfg. Co.
BMB Co., Inc.
Deere & Co.
Hahn Inc., — West Points Products
Henderson Mfg. Co.
International Harvester Co.
Jacobsen Mfg. Co.
Rental Equipment Mfg. Co.
Rogers Mfg. Co., Inc.
Ryan Equipment Co.
Southern Mill Creek Products Co., Inc.
Sweepster, Inc.
Terrain King Corp.
Triumph Machinery Co.
West Point Products Corp.

MULCH BLOWERS

Finn Equipment Co.
Reinco

NOZZLES, FOAM

Wilsco, Inc.

PASTEURIZERS, SOIL

Tarrant Mfg. Co.

PROPORTIONING SYSTEMS

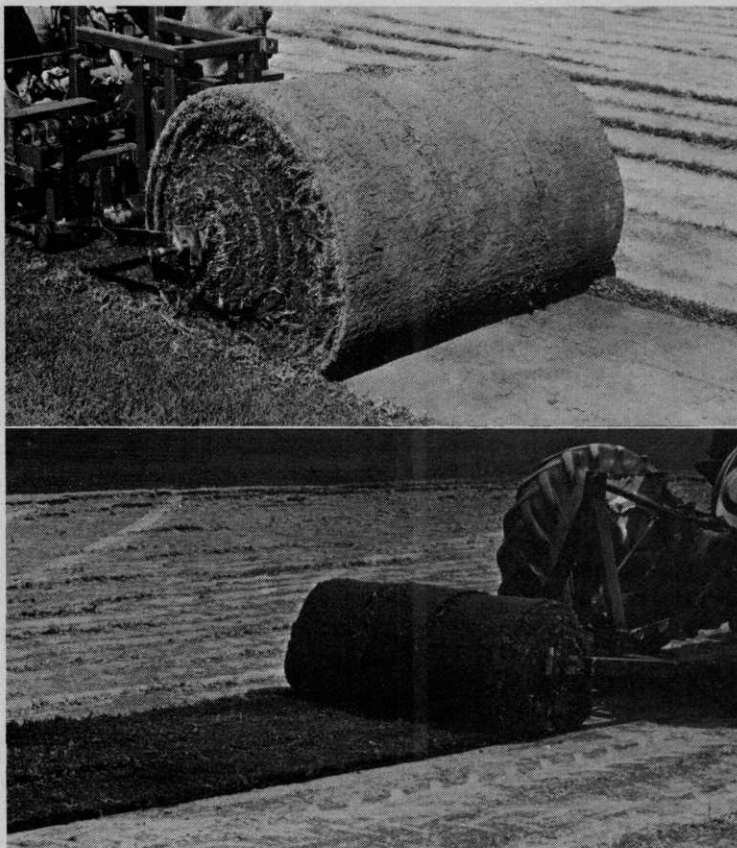
Contree Sales, Inc.
Vineland Laboratories, Inc.

PROTECTIVE CLOTHING

American Optical Co.
Charleston Rubber Co.
Mine Safety Appliances Co.

PRUNERS

Ackley Mfg. Co.



BECK'S BIG ROLL SYSTEM... HARVESTER, LOADER, LAYER

Use your 3-point hitch equipment

This is the fastest system on the market. Cut and roll up to 1200 yards per hour without manual handling of sod, and lay it mechanically as fast as it's harvested. Inexpensive tubular reels take less space than pallets, are lighter, last longer, and permit easy loading and unloading with a fork-lift mounted on a 3-point hitch. All lifting and handling is done by machine. Because it slashes labor costs for the landscaper, it is a sales machine for the grower. Stretches sod 3% to 5%. Leaves lawns smoother with fewer seams and joints.

For more information, write:
BECK MANUFACTURING COMPANY
P. O. Box 752 • Auburn, Alabama 36830

BECK
MANUFACTURING CO.

Pennstar Kentucky Bluegrass.

Perhaps the best all-around turfgrass available today.

Highly resistant to stripe smut, rust and leaf spot. Stripe Smut (*Ustilago striiformis*) sporulates in May or June, shredding individual leaves. Field trials show that, while Merion is quite susceptible, Pennstar is highly resistant. A very strong plus.

Pennstar is also highly resistant to rust (*Puccinia* spp). Rated on a scale of 0 (best) to 10 (worst), test data give a 1.7 rating to Pennstar versus 8.7 for Merion.

Most improved bluegrass varieties are resistant to leaf spot (*Helminthosporium vagans*). However, in university tests, Pennstar was significantly *more resistant* than some improved varieties.

Well adapted from the East Coast to California. Pennstar's disease resistance, drought resistance and other characteristics enable it to do well wherever Kentucky Bluegrass is adapted. It establishes well and resists fadeout under a wide variation in management.

Medium color, good density, easy to manage. With its pleasing medium bluegrass color, Pennstar blends well with other varieties. In mixtures, it's neither too dark nor noticeably light.

Pennstar persists at moderate-to-low fertility levels. It doesn't over-react to higher fertility. Because it's decumbent (the leaf angle is closer to 90° from vertical than 45°) Pennstar can tolerate a close mowing without thinning out. And it's shown the ability to

withstand drought conditions better than some other Kentucky Bluegrass varieties.

No excess thatch after 11 years. Pennstar does not produce damaging quantities of thatch. In tests at Penn State, plots of Pennstar torn up after 11 years revealed no excess thatch. (No dethatching had been done in that entire period.) Normally aggressive varieties can be expected to thatch up under good management practices. Not Pennstar.

Ideal component for turf mixtures. Is it better to plant a single variety or a blend? This is the difficult question that confronts turf managers. A single variety planting is undeniably

beautiful. Yet a single strain can be destroyed by disease or weather. Which is why Pennstar was developed — to make available a bluegrass variety that would be highly resistant to disease and capable of surviving extreme weather conditions.

These qualities make Pennstar very suitable for a mono-culture. Or a mixture, particularly when considering its other characteristics: It's not overly aggressive. It's easy to manage. Its pleasing texture and middle-of-the-road color make it visually compatible with other varieties. Indeed, Pennstar blends so effectively, it could help convert some managers to mixtures.

DEVELOPED AND RELEASED BY PENNSYLVANIA STATE UNIVERSITY

Pennstar Kentucky Bluegrass
(*Poa pratensis*)

Pennstar is an improved variety that has been released by Penn State after over 15 years of testing and evaluation. Pennstar is outstanding for disease resistance and for compatibility with other improved grasses in turf mixtures. Pennstar is not overly aggressive and is compatible with other varieties. Pennstar is persistent; reasons include its ability to withstand low mowing, its high resistance to disease and its ability to compete under low fertilization.

Some expert (and unbiased) opinions.

"Disease resistance was good, it had an attractive color, texture, and a good growth habit. The most significant item was its good performance under relatively low levels of fertility."

"In our trials, Pennstar has been the best variety for which seed is available."

"Average quality ratings (9 = best) based on density, color and uniformity placed Pennstar highest with a score of 5.6 as compared to other varieties such as Geary 5.0, Merion 4.0 and Windsor 3.8. These particular plots have been under minimum maintenance and care."

Turf Buyers' Checklist

IDEAL

1. It should be able to survive periods of drought.
2. It should be able to survive with moderate fertility.
3. It should be decumbent in growth habit so it can be mowed short without thinning out.
4. It should not be overly aggressive—should not crowd out companion grasses.
5. Its color should not be so dark or so light as to give a mixture a mottled appearance.
6. It should not "go wild" when fertilized. Emergence and growth rates should be moderate.
7. It should not produce excess thatch, even after years of establishment.
8. It should be highly resistant to common diseases, and particularly to "killer types" such as stripe smut and leaf spot.
9. It should be widely adapted throughout the zone of species adaptation.
10. It should be well tested for a period of years over many locations so that its characteristics are well understood.

Pennstar

1. In field tests, Pennstar has survived extended periods of drought. ☒
2. Pennstar requires only the moderate management typical of most bluegrasses. ☒
3. Pennstar's decumbent growth habit permits it to be mowed very short without thinning out. ☒
4. Pennstar will hold its own against overly-aggressive varieties, but does not crowd out less aggressive types. ☒
5. Pennstar has a pleasing medium blue-green color that blends well with all other varieties. ☒
6. Pennstar's rate of growth is not overly affected by increased use of fertilizers; its emergence and growth patterns are moderate. ☒
7. Pennstar produced practically no thatch in 11 years of testing. ☒
8. Pennstar is practically immune to leaf spot, highly resistant to stripe smut. ☒
9. Pennstar is widely adapted from California to the East Coast, in all the normal bluegrass areas. ☒
10. Pennstar has been tested for 15 years in locations from coast to coast. ☒

After you've checked them all . . . Pennstar

Pennstar

Kentucky Bluegrass.

TO: Pennstar Kentucky Bluegrass
P.O. Box 923, Minneapolis, Minnesota 55440

WTT-12

☐ Please send me prices, availability, test information, purity and germination data on Pennstar Kentucky Bluegrass.

Name

Club or Company

Address

City State Zip

For More Details Circle (118) on Reply Card

Asplundh Tree Expert Co.
 John Bacon Corp.
 Bartlett Mfg. Co.
 W. M. Bashlin Co.
 Fairmont Hydraulics
 Fanno Saw Works
 Friend Mfg. Co.
 John H. Graham & Co., Inc.
 Halline Utility Equipment Co.
 Harder Arborist Supply Co.
 Homelite Div., Textron, Inc.
 Hunt-Pierce Corp.
 Limb-Lopper Co., Inc.
 Miller Robinson Co.
 Melnor Industries, Inc.
 New World Products Co., Inc.
 Pitman Mfg. Co.
 H. K. Porter, Inc.
 Rowco Mfg. Co., Inc.
 Seymour Smith & Son, Inc.
 Stihl American, Inc.
 Village Blacksmith

PUMPS

Ace Pump Corp.
 Ampulco (Hardie)
 Aurora Pump Div.
 John Bacon Corp.
 John Bean Div., FMC Corp.
 John Blue Co.
 Bowie Industries, Inc.
 The Broyhill Co.
 Century Engineering Corp.
 Contree Sales, Inc.
 DEFCO
 Delavan Manufacturing Co.
 DeVilbiss Co.
 Dempster Industries, Inc.
 The J. J. Dill Co.
 Farmrite Sprayer, Inc.
 Farris Chemical Co.
 Friend Manufacturing Corp.
 Gotcher Engineering & Mfg. Co.
 Hanson Equipment Co.
 Homelite Div., Textron, Inc.
 H. D. Hudson Mfg. Co.
 Hydraulic Products Co., Inc.
 Hypro, Inc.
 Larson Machine, Inc.
 Lely Corp.
 Marlow Pumps Div.
 Midland Prod. Co.
 Minnesota Wanner Co.
 F. E. Myers & Bro. Co.
 Oberdorfer Pump Div.
 Online Products Div.
 Practical Products Corp.
 Simplex Mfg. Co.
 Solo Motors, Inc.
 Sprayco Mfgs. Co.
 Thor Power Tool Co.
 Tryco Mfg. Co., Inc.
 Universal Motor Co.
 Viking Pump Co.
 Williamstown Irrigation Inc.

RAKES

Arps Corp.
 Asplundh Tree Expert Co.
 Bartlett Mfg. Co.
 Brillion Iron Works, Inc.
 Deere & Co.
 Henderson Mfg. Co.
 Ford Motor Co., Tractor Div.
 International Harvester Co.
 Jari Corp.
 F. D. Kees Mfg. Co.
 Lely Corp.
 Rental Equipment Mfg. Co.
 Roseman Mower Corp.
 Ryan Equipment Co.
 Servis Equip. Co.
 Triumph Machinery Co.
 York Modern Corp.

REELS, HOSE

Clifford B. Hannay & Son, Inc.
 Melnor Industries, Inc.

RESPIRATORS

Acme Protection Equipment Corp.
 American Optical Co.
 John Bacon Corp.
 The J. J. Dill Co.
 Friend Mfg. Co.
 Glendale Optical Co., Inc.
 Great Lakes Chemical Div.
 Hub States Chemical & Equip. Corp.
 Martindale Electric Co.
 Mine Safety Appliances Co.
 Pulmosan Safety Equipment Corp.
 Scott Aviation Corp.
 Superior Chemical Products, Inc.
 The Vandermolen Co.
 Welsh Mfg. Co.
 West Chemical Products, Inc.
 Willson Products Div.

ROLLER-SPRAYS

Red Ewald, Inc.
 Friend Mfg. Co.
 Lakes Supply Co., Inc.
 Rear's Mfg. Co.
 Sprayco Mfgs. Co.

ROLLERS, TURF

Big J Products, Inc.
 Brillion Iron Works, Inc.
 Daymon Mfg. Corp.
 Ford Motor Co., Tractor Div.
 John H. Graham & Co., Inc.
 Gravely Corp.
 International Harvester Co.
 Princeton Turf Farms
 Rogers Mfg. Co., Inc.
 Rosco Manufacturing Co.
 Ryan Equipment Co.
 Simplicity Mfg. Co., Inc.
 Sun Industry, Inc.
 Wheel-Horse Products, Inc.

ROOT-FEEDING RODS

John Bean Div., FMC Corp.
 Ross Daniels, Inc.
 The J. J. Dill Co.
 Dobbins Div., Chamberlain Mfg. Corp.
 Hub States Chemical & Equip. Corp.
 Hydroponic Chemical Co., Inc.
 Minnesota Wanner Co.
 Universal Metal Products Div.

SAFETY BELTS AND SADDLES, TREE CLIMBERS

Asplundh Tree Expert Co.
 Bartlett Mfg. Co.
 W. M. Bashlin Co.
 Mine Safety Appliances Co.
 Product Dev. International
 Safety Test & Equipment Co., Inc.

SAFETY EQUIPMENT

Acme Protection Equipment Corp.
 American Optical Co.
 Asplundh Tree Expert Co.
 Bartlett Mfg. Co.
 W. M. Bashlin Co.
 John Bean Div., FMC Corp.
 Charleston Rubber Co.
 Glendale Optical Co.
 Great Lakes Chemical Div.
 Harder Arborist Supply Co.
 Mine Safety Appliances Co.
 Pulmosan Safety Equipment Corp.
 Safety Test & Equipment Co., Inc.
 Scott Aviation Corp.
 Southern Mill Creek Products Co., Inc.
 The Vandermolen Co.
 Welsh Mfg. Co.
 Willson Products Div.

SAWS, CHAIN

Homelite Div., Textron Inc.
 New World Products Co., Inc.
 Limb-Lopper Co., Inc.
 McCulloch Corp.
 Online Products Div.

Pioneer Chain Saws Ltd.
 Stihl American Inc.

SAWS, MANUAL

Bartlett Mfg. Co.
 John Bacon Corp.
 W. M. Bashlin Co.
 The Fanno Saw Works
 John H. Graham & Co., Inc.
 Harder Arborist Supply Co.
 Safety Test & Equipment Co., Inc.
 Seymour Smith & Son, Inc.
 Wright Saw Div.

SAWS, POWER

Ackley Mfg. Co.
 American-Lincoln Corp.
 Asplundh Tree Expert Co.
 John Bacon Corp.
 The Black & Decker Mfg. Co.
 L. M. Cox Mfg. Co., Inc.
 DESA Industries, Inc.
 Engineering Products Co.
 Fairmont Hydraulics
 Fanno Saw Works
 Friend Mfg. Co.
 Gravely Corp.
 Great Lakes Chemical Div.
 Halline Utility Equipment Co.
 Hoffco, Inc.
 Homelite Div., Textron, Inc.
 Hunt-Pierce Corp.
 Limb-Lopper Co., Inc.
 McCulloch Corp.
 Miller-Robinson Co.
 New World Products Co., Inc.
 Pioneer Saws Div., Gale Products
 Pitman Mfg. Co.
 Remington Arms Co., Inc.
 Rowco Mfg. Co., Inc.
 Solo Motors, Inc.
 Stihl American, Inc.
 The Sun-Mastr Corp.
 Thor Power Tool Co.
 Wright Saw Div.

SAWS, CHAIN, PARTS

Foley Mfg. Co.
 Omark Industries, Inc.
 Pioneer Chain Saws Ltd.
 Sabre Saw Chain, Inc.

SCABBARDS, SAW

Tallman Equip. Co. Inc.

SCRAPERS

BMB Company
 Deere & Co.
 Eversman Mfg. Co.
 Gravely Corp.
 International Harvester Co.
 Servis Equip. Co.

SCREENERS, SOIL

Lindig Manufacturing, Inc.

SCYTHES

Hoffco, Inc.

SEEDERS, BELT TYPE

John Bean Div., FMC Corp.

SEEDERS, DISK TYPE

J. I. Case Co.
 International Harvester Co.
 Rogers Mfg. Co., Inc.
 Vandermolen Export Co.

SEEDERS, HOPPER TYPE

Avco Ezee Flow Div.
 Brettrager Manufacturing
 Brillion Iron Works, Inc.
 J. I. Case Co.
 The Cyclone Seeder Co., Inc.
 Deere & Co.
 The J. J. Dill Co.
 Engineering Products Co.
 Gandy Co.
 Garber Seeders, Inc.

Gravely Corp.
Herd Seeder Co. Inc.
International Harvester Co.
Jacobsen Mfg. Co.
Larson Machine, Inc.
Parker Sweeper Co.
Rogers Mfg. Co., Inc.
Schneider Metal Mfg. Co.
Simplex Mfg. Co.
Sunnyhill Research & Mfg. Co.
The Vandermolen Co.

SEEDERS, HYDRAULIC

Reinco Inc.

SEEDERS, SOD

Brillion Iron Works, Inc.

SHARPENER, CHAIN SAW

American-Lincoln Div.

SHEARS

John Bacon Corp.
Bartlett Mfg. Co.
Friend Mfg. Co.
John H. Graham & Co., Inc.
Melnor Industries, Inc.
H. K. Porter, Inc.
Seymour Smith & Son, Inc.
Tallman Equip. Co. Inc.

SHREDDERS, PRUNINGS

Roto-Hoe Co.

SHREDDERS, SOIL

Gravely Corp.
Kemp Mfg. Co.
Lindig Manufacturing, Inc.
Royer Foundry & Machine Co.
W-W Grinder Corp.
Deere & Co.
Engineering Products Co.
Ford Motor Co., Tractor Div.

SICKLE BAR MOWER

J. I. Case Co.
Gravely Corp.
International Harvester Co.
Kromer Co.
Simplicity Mfg. Co., Inc.
Slope Tractor, Inc.
Solo Motors, Inc.
Wheel-Horse Products, Inc.

SOD CUTTERS

Beck Mfg. Co.
Bowie Industries Inc.
Finland Turf Cut Div.
Jacobsen Mfg. Co.
James-Way Equipment Co.
Princeton Turf Farms
Ryan Equipment Co.
Sodmaster
Southern Mill Creek Products Co., Inc.

SOD HARVESTERS

Beck Mfg. Co.
Bermuda King Co.
Big J Products, Inc.
John Nunes Mechanical
Harvesting Co.
Shamrock Turf Nurseries
Wiley Miner Associates, Inc.

SOD LAYERS

Beck Mfg. Co.

SOD LOADERS

Beck Mfg. Co.

SOD PLUGGER

Beck Mfg. Co.
Bowie Industries, Inc.
Hahn Inc., — West Points Products
James-Way Equipment Co.
Rogers Mfg. Co., Inc.

Southern Mill Creek Products Co., Inc.

SOD ROLLER

Daymon Mfg. Co.
Hadfield Sod Roller Co.
Ryan Equipment Co.

SOIL TESTERS

Contree Sales, Inc.
Hydroponic Chemical Co., Inc.
Kel Instruments Co., Inc.
LaMotte Chemical Products Co.
Sudbury Laboratory

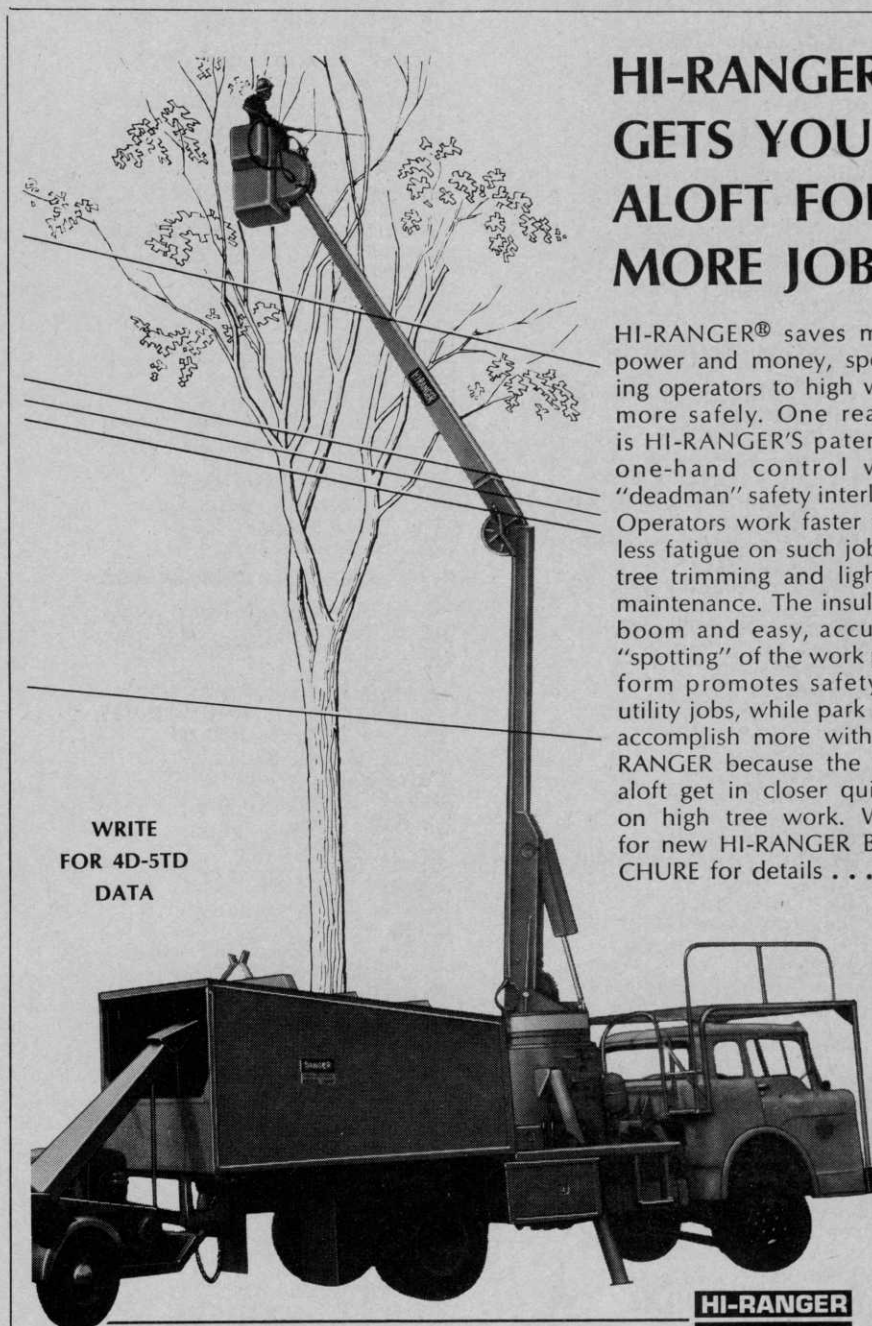
SPIKERS

John H. Graham & Co., Inc.
Hahn, Inc.—West Point Products
Jacobsen Mfg. Co.

Rogers Mfg. Co., Inc.
Ryan Equipment Co.
Southern Mill Creek Products Co., Inc.

SPRAY BOOMS

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Ampulco (Hardie)
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John Bean Div., FMC Corp.
The Broyhill Co.
Century Engineering Corp.
Clark Mfg. Co.
Contree Sales, Inc.
Custom Spray Equipment Corp.
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Kromer Co.
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Practical Products Corp.
Rear's Mfg. Co.
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Silver Creek Precision Corp.
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Spraying Systems Co.
Southern Mill Creek Products Co., Inc.
Wm. Steinen Mfg. Co.
The Thompson Manufacturing Co.
Thuron Sprayer Mfg. Co.
Tryco Mfg. Co., Inc.
Universal Metal Products Div.
Walsh Manufacturing Co.

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Century Engineering Corp.
Clark Mfg. Co.
Contree Sales, Inc.
Delavan Manufacturing Co.
DeVilbiss Co.
The J. J. Dill Co.
Farmrite Sprayer, Inc.
Friend Manufacturing Corp.
Gotcher Engineering & Mfg. Co.
Gravely Corp.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Growers Chemical Corp.
Hanson Equipment Co.
H. D. Hudson Mfg. Co.

Kromer Co.
Larson Machine, Inc.
Master Sprayers, Inc.
Melnor Industries
Monarch Mfg. Works, Inc.
F. E. Myers & Bro. Co.
Oakes Mfg. Co., FMC Corp.
Papec Machine Co.
Practical Products Corp.
Rear's Mfg. Co.
Root-Lowell Corp.
H. B. Sherman Mfg. Co.
Simplex Mfg. Co.
Sprayco Mfgs., Inc.
Spraying Systems Co.

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John Bean Div., FMC Corp.
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Century Engineering Corp.
Clark Mfg. Co.
Delavan Manufacturing Co.
The J. J. Dill Co.
Farmrite Sprayer, Inc.
Friend Manufacturing Corp.
Gotcher Engineering & Mfg. Co.
Gravely Corp.
Green Lawn Laboratories, Inc.
Hanson Equipment Co.
Larson Machine, Inc.
Master Sprayers, Inc.
F. E. Myers & Bro. Co.
Oakes Mfg. Co., FMC Corp.
Practical Products Corp.
Simplex Mfg. Co.
Sprayco Mfgs., Inc.
Spraying Systems Co.
Southern Mill Creek Products Co., Inc.
Wm. Steinen Mfg. Co.
Thuron Sprayer Mfg. Co.
The Vandemolen Co.
Walsh Manufacturing Co.

SPRAY NOZZLES, WHIRLS

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Clark Mfg. Co.
Delavan Mfg. Co.
The J. J. Dill Co.
Farmrite Sprayer, Inc.
Friend Manufacturing Corp.
Gravely Corp.
Great Lakes Chemical Div.
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Oakes Mfg. Co., FMC Corp.
Practical Products Corp.
Spraying Systems Co.
Southern Mill Creek Products Co., Inc.
Wm. Steinen Mfg. Co.
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SPRAY PUMPS

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Master Sprayers, Inc.

SPRAY RIG LINE MARKERS

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Clark Mfg. Co.
Contree Sales, Inc.
Dempster Industries, Inc.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
H. D. Hudson Mfg. Co.
Larson Machine, Inc.
Rear's Mfg. Co.

SPRAYER, BIFLUID

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The Broyhill Co.
Buffalo Turbine Equipment Co.
Clark Mfg. Co.
Dobbins Div., Chamberlain Mfg. Corp.
Red Ewald, Inc.
Farmrite Sprayer, Inc.
Finn Equipment Co.
Great Lakes Chemical Div.
Minnesota Wanner Co.
Simplex Mfg. Co.
Sprayco Mfgs., Inc.
Stull Chemical Co.

SPRAYERS, BOOM

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Amchem Products, Inc.
John Bacon Corp.
John Bean Div., FMC Corp.
John Blue Co., Inc.
The Broyhill Co.
Century Engineering Corp.
Clark Mfg. Co.
Contree Sales
Cushman Motors
Deere & Co.
DEFECO
Dempster Industries, Inc.
The J. J. Dill Co.
Dobbins Div., Chamberlain Mfg. Corp.
Red Ewald, Inc.
Farmrite Sprayer, Inc.
Friend Manufacturing Corp.
Gotcher Engineering & Mfg. Co.
Gravely Corp.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Growers Chemical Corp.
Hanson Equipment Co.
Heckendorn Mfg. Co., Inc.
Hub States Chemical & Equip. Corp.
H. D. Hudson Mfg. Co.
International Harvester Co.
Kromer Co.
Larson Machine, Inc.
Master Sprayers, Inc.
Mayrath Co.
F. E. Myers & Bro. Co.
Papec Machine Co.
Rear's Mfg. Co.
Rogers Mfg. Co., Inc.
Root-Lowell Corp.
Simplex Mfg. Co.
Southern Mill Creek Products Co., Inc.
Sprayco Mfgs., Inc.
Sun Industry, Inc.
Thuron Sprayer Mfg. Co.
Tryco Mfg. Co., Inc.
Walsh Manufacturing Co.
Waymark

SPRAYERS, CART OR WHEELBARROW TYPE

Ampulco (Hardie)
John Bean Div., FMC Corp.
The Broyhill Co.
Buffalo Turbine Ind. Equipment Co.
Champion Sprayer Co.
R. E. Chapin Mfg. Works, Inc.
Clark Mfg. Co.
Deere & Co.
The J. J. Dill Co.
Dobbins Div.
Red Ewald, Inc.
Farmrite Sprayer, Inc.
Friend Mfg. Co.
Great Lakes Chemical Div.
Hanson Equipment Co.
Hub States Chemical & Equip. Corp.
H. D. Hudson Mfg. Co.
Larson Machine, Inc.
F. E. Myers & Bro. Co.
Rear's Mfg. Co.
Root-Lowell Corp.
D. B. Smith & Co.
Southern Mill Creek Products

Co., Inc.
Sun Industry, Inc.
Tarrant Mfg. Co.
Thuron Sprayer Mfg. Co.
Universal Metal Products Div.

SPRAYERS, COMPLETE POWER UNIT

Ag-King (Div. of TAGS)
Ampulco (Hardie)
John Bacon Corp.
John Bean Div., FMC Corp.
Besler, Div. of C-C Industries
John Blue Co., Inc.
R. H. Bogle Co.
Bowie Industries, Inc.
The Broyhill Co.
Buffalo Turbine Ag. Equip. Co.
Century Engineering Corp.
Champion Sprayer Co.
R. E. Chapin Mfg. Works, Inc.
Clark Mfg. Co.
Cushman Motors
DEFCO
Deere & Co.
The J. J. Dill Co.
Dobbins Div.
Red Ewald, Inc.
Fargo Foundry Steel & Mfg. Co.
Farmrite Sprayer, Inc.
Friend Manufacturing Corp.
Gravely Corp.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Hanson Equipment Co.
Hub States Chemical & Equip. Corp.
H. D. Hudson Mfg. Co.
Kromer Co.
Larson Machine, Inc.
Lockwood Corp.
Marlow Pumps Div.
Master Sprayers, Inc.
Minnesota Wanner Co.

F. E. Myers & Bro. Co.
Oakes Mfg. Co., FMC Corp.
Practical Products Corp.
Rear's Mfg. Co.
Rogers Mfg. Co., Inc.
Root-Lowell Corp.
Silver Creek Precision Corp.
Smithco, Inc.
Solo Motors, Inc.
Southern Mill Creek Products Co., Inc.
Sprayco Mfgs., Inc.
Stull Chemical Co.
Sun Industry, Inc.
Superior Chemical Products, Inc.
Tarrant Mfg. Co.
The Thompson Manufacturing Co.
Thuron Sprayer Mfg. Co.
Tryco Mfg. Co., Inc.
Universal Metal Products Div.
The Vandermolen Co.
Walsh Mfg. Co.
Waymark
West Chemical Products, Inc.

SPRAYERS, COMPRESSED AIR

John Bean Div., FMC Corp.
Blackwell Burner Co.
R. E. Chapin Mfg. Works, Inc.
Curtis-Dyna Products Corp.
DeVilbiss Co.
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.
Oakes Mfg. Co., FMC Corp.
Parco Div., National Foam
Root-Lowell Corp.
D. B. Smith & Co.
Southern Mill Creek Products

Co., Inc.
Superior Chemical Products, Inc.
Tryco Mfg. Co., Inc.
Universal Metal Products Div.
West Chemical Products, Inc.

SPRAYERS, HAND

Ag King (Div. of TAGS)
Ampulco (Hardie)
Bartlett Mfg. Co.
John Bean Div., FMC Corp.
Blackwell Burner Co.
Borden Chem., Smith-Douglass Div.
Broyhill Co.
Buffalo Turbine Ag. Equip. Co.
Century Engineering
Champion Sprayer Co.
R. E. Chapin Mfg. Works, Inc.
Contree Sales, Inc.
The J. J. Dill Co.
Deere & Co.
The C. B. Dolge Co.
Friend Mfg. Co.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Hub States Chemical & Equip. Corp.
H. D. Hudson Mfg. Co.
Hydroponic Chemical Co., Inc.
Larson Machine, Inc.
Melnor Industries, Inc.
Oakes Mfg. Co., FMC Corp.
Parco Div., National Foam
Root-Lowell Corp.
Silver Creek Precision Corp.
D. B. Smith & Co.
Solo Motors, Inc.
Southern Mill Creek Products Co., Inc.
Superior Chemical Products, Inc.
The Thompson Manufacturing Co.
Tradewinds, Inc.
Tryco Mfg. Co., Inc.

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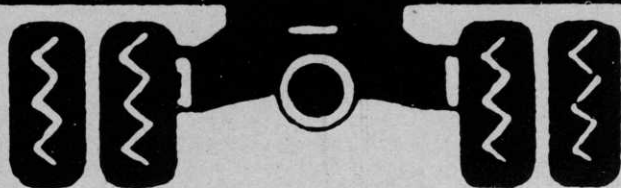
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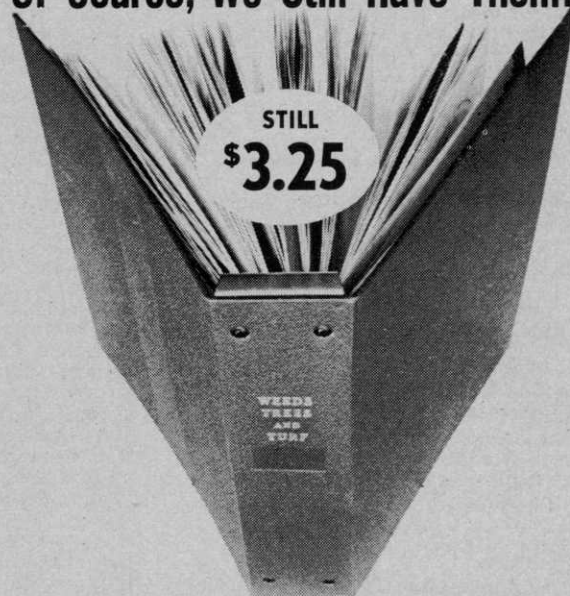
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Larson Machine, Inc.
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Melnor Industries, Inc.
H. B. Sherman Mfg. Co.
Southern Mill Creek Products Co., Inc.
Superior Chemical Products, Inc.
Thuron Sprayer Mfg. Co.
Tryco Mfg. Co., Inc.
Universal Metal Products Div.
Walsh Mfg. Co.

SPRAYERS, KNAPSACK

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John Bean Div., FMC Corp.
Buffalo Turbine Ag. Equip. Co.
Champion Sprayer Co.
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The J. J. Dill Co.
C. B. Dolge Co.
Friend Mfg. Co.
Great Lakes Chemical Div.
Green Lawn Laboratories, Inc.
Hanson Equipment Co.
Hub States Chemical & Equip. Corp.
H. D. Hudson Mfg. Co.
Ben Meadows Co.
Oakes Mfg. Co., FMC Corp.
Parco Products Co.
Root-Lowell Corp.
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Solo Motors, Inc.
Southern Mill Creek Products Co., Inc.
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Tradewinds, Inc.
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The Vanderomlen Co.

SPRAYERS, MOBILE TURF

Mallinckrodt Chemical Works

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Northrup, King & Co.
Southern Mill Creek Products Co., Inc.
Tarrant Mfg. Co.
Tyler Corp.
The Vandermolen Co.
Waymark

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Borden Chem., Smith-Douglass Div.
Brettrager Manufacturing
Champion Sprayer Co.
The Cyclone Seeder Co., Inc.
Deere & Co.
Dempster Industries, Inc.
The J. J. Dill Co.
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Fence Painter Corp.
Gandy Co.

Garber Seeders, Inc.
Gotcher Engineering & Mfg. Co.
Gravely Corp.
Great Lakes Chemical Div.
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Tryco Mfg. Co., Inc.
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Wichita Equipment Co.

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Rogers Mfg. Co., Inc.

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Valmont Industries, Inc.
Vermeer Manufacturing Co.
Wayne Mfg. Co.

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International Harvester Co.
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Jenkins Equipment Co.
Kromer Co.
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Rental Equipment Mfg. Co.
Rogers Mfg. Co., Inc.
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Farmrite Sprayer, Inc.
Friend Manufacturing Corp.
Gotcher Engineering & Mfg. Co.

Green Lawn Laboratories, Inc.
Hanson Equipment Co.
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Kromer Co.
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Papec Machine Co.
Practical Products Corp.
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Simplex Mfg. Co.
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Sprayco Mfgs., Inc.
Superior Chemical Products, Inc.
Thuron Sprayer Mfg. Co.
Tryco Mfg. Co., Inc.
Universal Metal Products Div.
Walsh Manufacturing Co.

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Allis-Chalmers Mfg. Co.
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Bolens Div., FMC Corp.
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Deere & Co.
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Gravely Corp.
Howard Rotavator Co., Inc.
International Harvester Co., Inc.
Jacobsen Mfg. Co.
Lakes Supply Co., Inc.
Lely Corp.
Mitsubishi International Corp.
MTD Products, Inc.
Quick Manufacturing, Inc.
Oliver Corp.
Rogers Mfg. Co., Inc.
Roseman Mower Corp.
Side-Winder Plant, FMC Corp.
Simplicity Mfg. Co., Inc.
Solo Industries, Inc.
Wheel-Horse Products, Inc.
Yazoo Mfg. Co., Inc.
York Modern Corp.

TIRES, FLotation

Martin Tire & Supply Co.

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Lely Corp.
Ryan Equipment Co.
Sodmaster
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David Brown Tractors, Ltd.
J. I. Case Co.
Caterpillar Tractor Co.
Deere & Co.
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Erickson Corp.
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Simplicity Mfg. Co., Inc.
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Toro Manufacturing Corp.
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Waldon, Inc.
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Trailevator Div., Magline, Inc.

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Creative Sales
Panama Pump Co.
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Fertilla Co.

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John Bacon Corp.
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Ditch Witch Trenchers
Olmsteel Products, Inc.
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Goodall Div.
John H. Graham & Co., Inc.
Jacobsen Mfg. Co.
K-D Mfg. Co.
Lindell Pattern Works
Melnor Industries, Inc.
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Rowco Mfg. Co., Inc.
Seymour Smith & Son, Inc.
Sodmaster
Tallman Equip. Co. Inc.
Thor Power Tool Co.
Yazoo Mfg. Co., Inc.

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UNDERWATER WEED RAKE

Aquanautics, Inc.
Aquatic Controls Corp.

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Miller Tilt-Top Trailers, Inc.

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Bombardier, Ltd.
Cushman Motors
Deere & Co.

Gravely Tractors
W. J. Heinrich Products
International Harvester Co.
Jacobsen Mfg. Co.
Otis Materials Handling
Rogers Mfg. Co., Inc.
Sweepster, Inc.
Tryco Mfg. Co., Inc.
Walker Mfg. Co.
West Point Products Corp.

VACUUMS

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American-Lincoln Div.
Ariens Co.
Billy Goat Industries, Inc.
The Black & Decker Mfg. Co.
Deere & Co.
Kromer Co.
Parker Sweeper Co.
Scott Aviation Corp.
Simplicity Mfg. Co., Inc.
Southern Mill Creek Products Co., Inc.
Tarrant Mfg. Co.
Turf Vac Corp.

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Rogers Mfg. Co.
Ryan Equipment Co.

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Ditch Witch Trenchers

WASHERS

Century Engineering Corp.
Fimco, Inc.
Walsh Mfg. Co.

WINCH (HOIST)

Fairmont Hydraulics

Halline Utility Equipment Co.
Hoffco, Inc.
Ideal Crane Div.
International Harvester Co.
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Servis Equip. Co.

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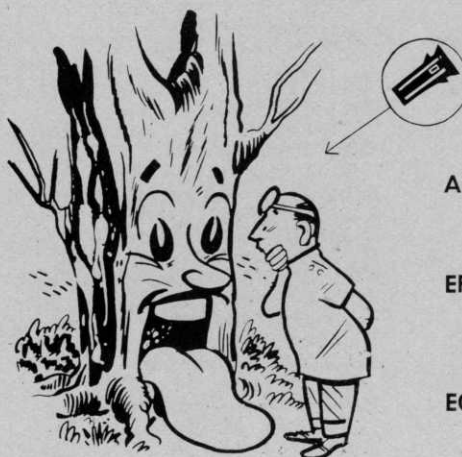
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Certainly, Any Time

As part of our educational program for the Superintendents of School Grounds, I would like to distribute your excellent article, "More Useable Space for the Practice Field" that appeared in the September 1971 issue.

I would appreciate it if you would grant me permission to reprint this article.

Thank you for your consideration in this matter. WALTER J.G. CARPENTER, Cooperative Extension Agent, Nassau County, N.Y.

We Are Complimented

As a member of the New York State Arborists Assn. Inc. I greatly enjoy your monthly publication of WEEDS TREES and TURF. I always find many informative articles in and keep the publication for reference in my office. In your October issue there is a very fine editorial, "The Association Crisis."

In January of 1972, the 9 thru the 12th, we are having our Convention at the Nevele Country Club at Ellenville N.Y. This article is very timely and we would like your permission to print the article in its entirety giving due credit to your organization.

We hope to reach many of the people who say "Leave it to George" to try to increase the membership of our Assn. We expect to include a copy along with the meeting notices that are going out to the membership and their friends along with other interested people.

Thank you for your consideration for this request. WALTER STURMER, A-B-C Tree Service, Inc., Yorktown Heights, N.Y.

Quality Seed Issue

Your October 1971 issue was of

particular interest to members of the turf seed industry.

Wm. Knoop wrote on Turfgrass Seed Specifications for Tender Bidding — then we read Doyle Jacklin's article on Sod Quality Seed. There is a certain paradox herein the discussions put forth on qualities of *Poa Pratensis* — Kentucky Bluegrass.

Mr. Knoop's example of 85 purity, 80 germination minimum standards for Kentucky Bluegrass carries with it the power of suggestion. Mr. Jacklin on the other hand, describes the ultimate which is available. Seed buyers should be aware that within these two poles lie a multitude of intermediate qualities. The 85/80 quality is just about the bottom of the ladder. Seed buyers too, should be aware of the fact that often a low purity lot also contains a high proportion of lightweight seed — seed which will germinate on a germinator's blotter but just will not have the guts on a gravelly roadside to take hold after germination. A sod grower who expertly chooses and prepares his land, could make this poorer seed grow—the areas where tender bought seed is sown is often a very hostile host for new seedlings.

I wholeheartedly agree with Mr. Jacklin—sod growers cannot take the risk of buying any seed but the best. However, I strongly believe that municipal and institutional seed buyers should also be encouraged to closely examine the qualities available to them and perhaps a few extra dollars spent on a better quality of seed will mean that the job won't need reseeding the next season.

Keep up the good work — your articles are both interesting and stimulating. MARTIN C. PICK, Otto Pick & Sons Seeds Ltd., Richmond Hill, Ontario, Canada.

Group Health Plan Valuable

It's been some time since Montreal and I've intended writing to you long before this just to tell you how much I enjoyed having dinner with you and others in Montreal.

Carl Raw, my supervisor, has come to me twice now with "Weeds, Trees and Turf." in hand and says, as he points to a story you've written: "Bill, look at this. In the last issue your friend talked about liquid feeding being something new and you've been doing it for 14 years." And in our September issue that fine story on Dinsmore's operation revealed something else we also do, coffee and donuts for the men in the morning before they leave for work. Yes — they seem to like it.

I've tried something else that just may be helping keep one or two of my good men around a wee bit longer — Group Hospitalization. Hold it, Arthur, before you comment. We go one wee bit further than most others because we pay the **entire** premium for each man, not just a small portion as many do. I do believe it helps a great deal and already it's paid off handsomely for one of the men's family.

We've been experimenting, Art, and it has paid off.

We can now keep trees from having blossoms with no harm to the foliage. How about that?

We could run into problems but to date we are happy as can be with our new found knowledge that we generated through our own efforts and experiments.

I'll write to "Denny" now to tell him what a good job you did for him.

Art, it's always nice to see you. Warm wishes to you for bigger and better things to come. W. K. "BILL" JOHNSON, Badger Tree Service Inc., Phoenix, Ariz.

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Edward K. Hertel

FMC's Hertel Elected NACA Board Chairman

New Chairman of the Board of the National Agricultural Chemicals Association is Edward K. Hertel, manager of FMC Corporation's Niagara Chemical Division, Middleport, N. Y. Hertel also serves as vice president of FMC Corporation. His NACA election also included a 3-year term on the NACA board of directors.

Prior to his election as chairman,



HISTORIC OCCASION . . . 19th Annual American Association of Nurserymen Landscape Awards Program presentation ceremonies were held in the East Garden of the White House, October 19. Mrs. Richard Nixon served as honorary chairman, and is seen here with AAN President Joseph H. Klupenger (left), and, introducing the First Lady, AAN Executive Vice President Robert F. Lederer.

Hertel served on the NACA board, the policy advisory committee, executive committee and the finance committee.

NACA is a trade organization representing formulators and manufacturers of pesticides. More than 30 major companies are members.

Yard-Man Div. Purchased

Montgomery Ward has acquired the former Yard-Man division of The Leisure Group, Inc. Yard-Man is headquartered at Jackson, Mich., with manufacturing facilities at both Jackson and Sullivan, Ill. The company makes power lawn mowers, riding mowers, tractors, tillers, snow throwers and leaf removal equipment.

Yard-Man which has been a major supplier of Montgomery Ward for a number of years will be organized as a wholly-owned subsidiary and will continue operations under current management. George West, vice-president and general manager, will head the management team according to an announcement by Montgomery Ward.

Northwest Hort Show Changes Dates to Jan. 27

The Northwest Horticultural Congress has changed dates for their Northwest Agriculture Show '72 to January 27-29. The event was set back one day to allow exhibitors to

set up displays at the Memorial Coliseum at Portland, Ore. Some 25,000 persons are expected to attend.

Besides the 100,000 square feet of exhibits, the show features a number of educational programs. The Oregon Horticultural Society, Oregon Holly growers, and other groups hold annual meetings in conjunction with the event.

Six sections of Oregon State University's ornamental short courses are presented during the show. These include the turf managers program, nursery program, spray applicators section, landscape program, flower growers section, and holly growers section.

Shaw Named President of Florida AAN

Joseph C. Shaw, Shaw Nursery and Landscape Co., South Miami, who is due to step into the presidency of the 1400-member Florida Nurserymen and Growers Association next Spring, added another responsibility by accepting the leadership of the Florida Chapter, American Association of Nurserymen, at its annual meeting held during the recent FNGA Trade Show-Short Course in Hollywood-By-The-Sea.

He has just completed a year as president of the Horticultural Spraymen's Association.

Others elected to the state AAN chapter are: Bill Brook, Dania, vice president; and Lawrence Clements, Bartow, sec.-treas.

THE NEW LOOK IN HEAVY DUTY COMMERCIAL MOWERS

GOODALL FOR THE '70'S

GOODALL SELF-PROPELLED

Easy handling, professional design, finger tip power steering and turning, comes in 21", 28", 36" and big 52" cuts up to 8 h.p. engine.



GOODALL PUSH MOWER

Rugged, unbreakable steel handles, available in 19", 20", 22" cuts, engine comes in 3.5 or 5.0 h.p.



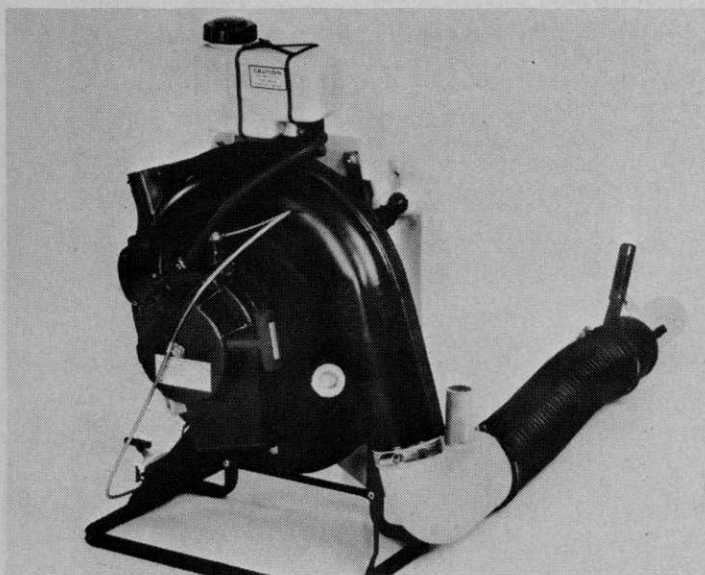
GOODALL EDGER-TRIMMER

Unbreakable steel handles, 3 h.p. engine, steel wheels on ball bearings. 10" cut.



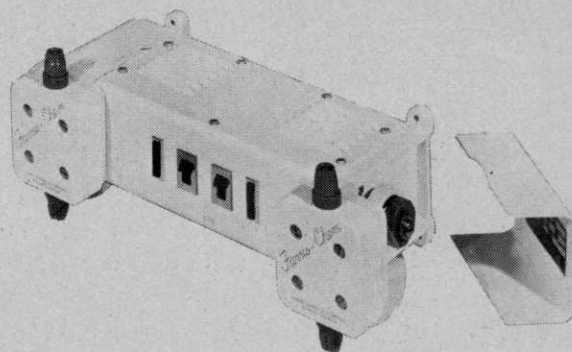
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For information, write GOODALL DIVISION
4303 Poplar Level Road, Louisville, Kentucky 40213, Phone 502/459-3810



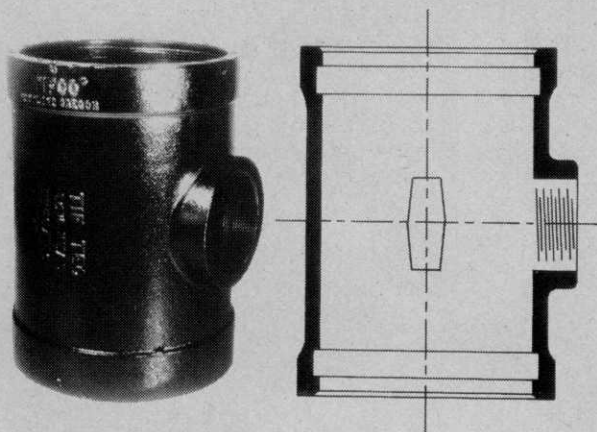
AIR SWEEP: Curtis Dyna-Products Corp., Westfield, Inc.

For sweeping all kinds of trash, leaves and other debris. Handles heavy, bulky objects such as bottles and cans. Ideal for cleaning up ballparks, stadiums, picnic areas, parking lots and side walks; feather weight and high horsepower. Available in two backpack models. One model has 30 gal. tank and valving for adding just enough water to keep down dust or for washing down walls and pavement with detergent in water. Also available in 2-wheel trail-behind model. For more information, circle (701) on the reply card.



SOLUTION FEEDER: Farris Chemical Co., Inc., Knoxville, Tenn.

Series 125 diaphragm chemical feeder developed to meet requirements for variety of chemical solutions and applications. Designed to operate at pressures up to 150 psi. Mechanically linked teflon diaphragm, white PVC solution head, air-cooled gear motor equipped with long-life bearings requiring no lubrication. Available in 2 feed rate models either as simplex or as duplex. Shipped complete with strainer, injection point fitting, 15 feet of suction and discharge tubing, complete with instruction and parts manual. For more information, circle (702) on the reply card.



IRRIGATION COUPLINGS for PVC/IPS Plastic and Steel Pipe: The Independent Fitting Company, Portland, Ore.

Installers of 4", 6" and 8" PVC/IPS plastic and standard steel pipe in low-head irrigation systems will benefit from the new line of light weight TIF-TEC low-head irrigation tapped couplings recently announced by the Independent Fitting Company. Developed especially for use with PVC/IPS pipe where pressures are generally limited to 100 psi or less, the new coupling has a lighter wall than is required to meet municipal waterworks specifications. The TIF-TEC low-head coupling is intended primarily for farmland irrigation systems. For more information, circle (703) on the reply card.



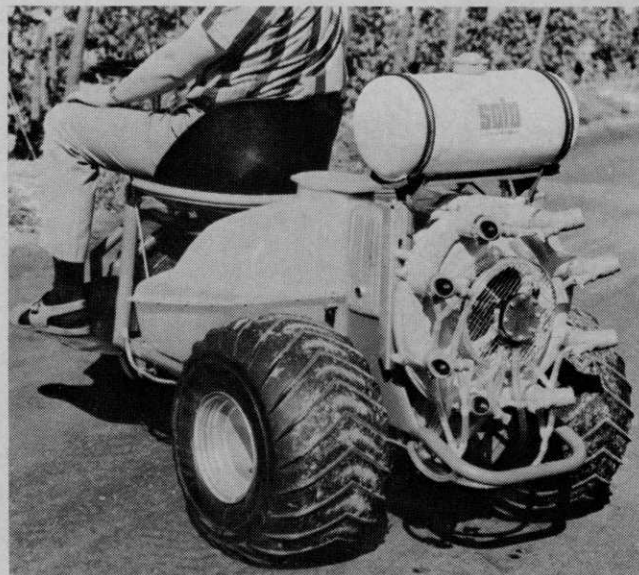
INDUSTRIAL VACUUM: Billy Goat Industries, Grandview, Mo.

Trash pick-up ability equal to higher powered units is claimed for 3½ hp outdoor vacuum. Model Kd 35 is recommended for quick clean-up of all lawn debris including leaves, thatch, twigs, grass clippings, paper and other litter. Designed for maximum flow of air from suction snout through impeller chamber to bag. A 26" snout has 5 height settings to adapt pick up to any surface from concrete to thick turf, and to all degrees of bulkiness in the litter. An optional flexible hose, 10' long, quickly snaps in place for cleaning shrubbery and other hard to reach places. For more information, circle (704) on the reply card.



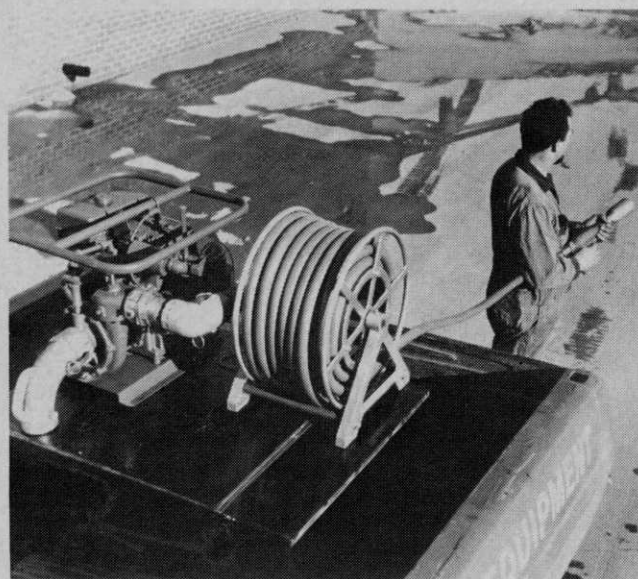
TANKS AND CONTAINERS: Raven Industries, Inc.,
Sioux Falls, S. Dakota

New line of all purpose Rhino tanks and containers are made of either high or low density polyethylene. Uniform, rugged and economical. Suitable for countless purposes and built to withstand constant hard use. Available in stock sizes or custom produced to exact specifications. Also available is a stock nesting model which reduces storage space and freight costs. For more information, circle (705) on the reply card.



ALL-TERRAIN MIST BLOWER: Solo, Burlington, Ontario

Barely 38 in. wide is a new small tractor-type mist blower made by Europe's Solo engine company. Riding-type high-concentrate airblast unit operates in rough or muddy terrain and on steep slopes. Powered by 220-cc. two-cycle engine, with two forward and two reverse speed gears. Plastic concentrate tank holds 32 U.S. gallons — the equivalent of up to 350 gallons of regular sprayer formula. Air velocity regulated by gear shift and throttle to more than 200 mph. Effective spread beyond 50 feet. For more information, circle (706) on the reply card.



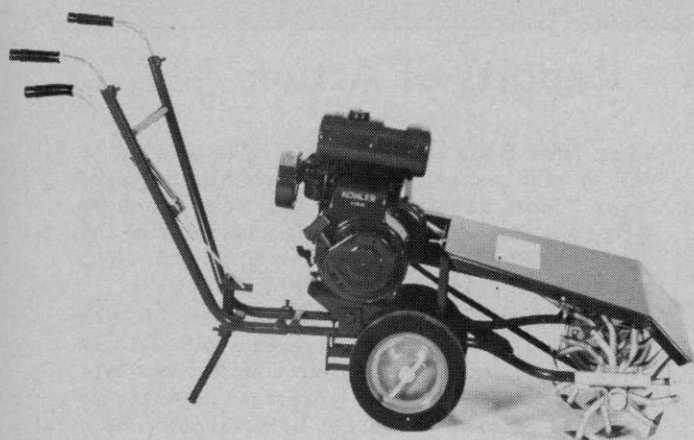
LIVE-WINDING REEL: Nordic International,
Port Credit, Ontario, Canada

Reel handles up to one-inch air, water, oil or chemical hose under pressure while turning, yet is economic enough for a wide range of industrial and maintenance applications. H-70 model has live swing joints and 20-inch diameter, permanent-moulded, high strength aluminum heads that will accommodate up to 100 feet of one-inch hose; double that length of half-inch hose. Model H-71 with 23-inch head will take fifty percent more hose length. Both models have hand rewind by turning the head; finger-tip brake and lock device and crank handles are optional. For more information, circle (707) on the reply card.



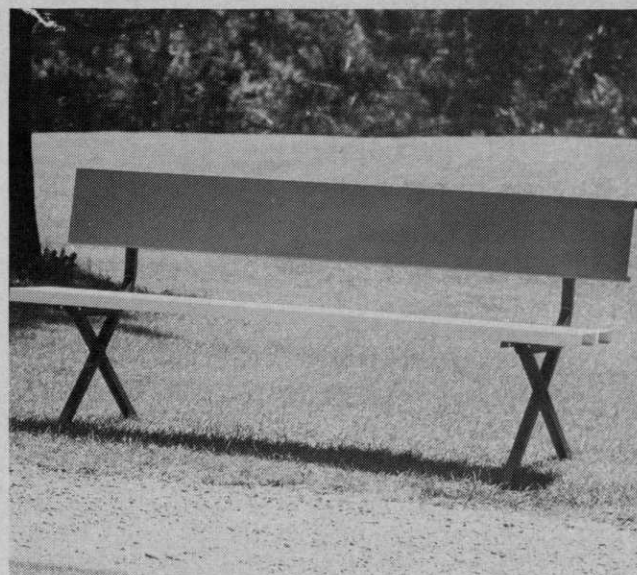
MINI-DUNE BUGGY LAWN MOWER: HEMCO Corporation,
Independence, Mo.

Mini-Dune Buggy has 32" synchronized twin blades for super smooth cutting action (detachable belly mower unit) adjustable cutting heights. Electric key start with headlights, tail lights, cigarette lighter, 12 volt battery, ammeter, voltage regulator and alternator to charge battery. Special 8 HP 4 cycle Briggs & Stratton chrome engine. Engine controls on dash. Heavy duty geared transmission, 3 speed forward, reverse and neutral with a chain drive. Complete line of accessories. For more information, circle (708) on the reply card.



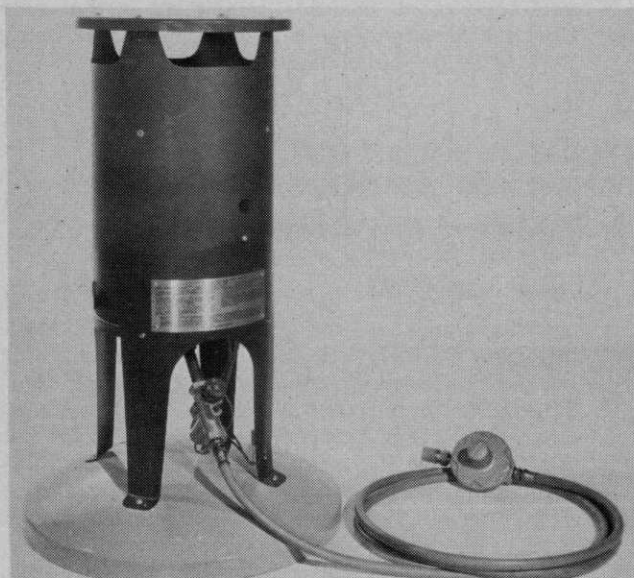
SELF-PROPELLED HOEING MACHINE: Auto Hoe, Inc., DePere, Wis.

"Auto-Hoe" is self-propelled hoeing machine, custom built as a hoe with power and sturdy enough to dig any type soil a pick will, yet simple in its use. Depth adjustable, tills up to 6 inch depth and hoes a minimum of $\frac{1}{4}$ " depth, and can be used to hoe weeds, cultivate, mulch, spade and till the soil. Rugged, perfectly balanced, low to the ground, light in weight, and comes in four models, fully factory warranted. Illustrated is Model 36-C for commercial users. For more information, circle (709) on the reply card.



NEW STEEL BENCH: Standard Mfg. Co., Cedar Falls, Iowa

All-steel tee bench with formed 16-gauge steel backs and seats with a new plastic finish that envelopes the metal parts and is completely bonded to the steel. Plastic coating reduces chipping or peeling. Reflective quality and insulating ability of the coating keeps metal cool in the sun. Steel benches are available in yellow, red or avocado to match the colored ball washers and consoles available from Standard. Unique assemble of the back and seat eliminates any unsightly bolt heads or nuts. Seat and back, 10 inches wide and 72 inches long. Wt. 70 lbs. For more information, circle (710) on the reply card.



LP GAS HEATER: Stone Construction Equipment, Inc., Honeoye, N. Y.

LP Gas Heater model LP-100 with 100,000 BTU/hr. capacity. Rugged unit has all UL listed safety controls and features patented tip-over safety switch. Safety switch automatically shuts off the gas to the heater if accidentally tipped over. Unit shipped completely assembled and ready to use with hose and regulator included. Sells for \$89.50, F.O.B. Honeoye. For more information, circle (711) on the reply card.



PROTECTIVE TREE BANDAGE: Hermell Products, Hartford, Conn.

Revolutionary new protective tree bandage is 36" x 6" roll of adhesive backed foam. Helps to prevent winter damage to the trunk of tree caused by freezing and thawing, as well as preventing sun-scald in the summer and insects such as bores which will attack weakened trees. Maker says a good insurance item for protection of young trees and also aids in protecting wounds on older trees. Adhesive backing allows it to be cut in various shapes to be applied to tree without tie. For more information, circle (712) on the reply card.

INDUSTRY ASSOCIATIONS IN 1972

New Officers, New Programs – Reports of Action

AMERICAN ASSOCIATION OF NURSERYMEN, INC

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

Robert F. Lederer, Executive Vice-President

Officers & Directors for '72: Joseph H. Klupenger, Pres., Klupenger's Nursery, Aurora, Ore.; Kenneth J. Altorfer, v.p., McKay Nursery Co., Waterloo, Wis.; Louis Hillenmeyer, Jr., Treas., Hillenmeyer Nurseries, Lexington, Ky.; Palmer Bigelow, Jr., Bigelow Nurseries, Northboro, Mass.; Harold S. Crawford, Willis Nursery Co., Ottawa, Kan.; L. J. Hilscher, Hilscher Nursery & Gard., Fort Worth, Tex.; Itsuo Uenaka, Cupertino Nursery, Inc., Cupertino, Calif.; Harold R. Nickel, Greenleaf Nursery Co., Muskogee, Okla.

Annual Meeting: July 15-19, 1972, Statler-Hilton Hotel, Washington, D. C.

Highlights of '71: Membership reached 1863, a rise in 5½ years of 520 member firms, a net increase of about 39%. In the area of legislation AAN has prepared at least 20 separate pieces of testimony for both sides of the Hill on agricultural appropriations, Forest Service appropriations, forest management, wage-hour legislation, pesticides legislation, Washington Youth Gardens appropriations, postal rate revisions, patent legislation, and others. A nationwide transportation survey taken of AAN members revealed the different types of transportation used and the order of preference has permitted the AAN to concentrate resources on transportation problems most important to the members. Some highlights of the past year were: an ICC decision forcing cancellation of a proposed surcharge on parcel post parcels over certain dimensions; forestalling action by the trucking industry to make a drastic increase in classification ratings on shipments of trees, shrubs, or vines exceeding a certain length; HRI production of a comprehensive shipping manual; securing a reduced classification rating on impregnated paper pots; successfully opposing proposals by the trucking industry to set a minimum weight of 20 pounds on all articles shipped; and there are others. The Horticulture Research Institute has completed three years work in development of the "Technical Glossary of Horticultural and Landscape Terminology." Pennsylvania State University and nine other associations contributed material. A new 60-page National Landscape Association "Landscape Designer and Estimator's Guide" was published this year. A new group, The National Association of Plant Patent Owners (NAPPO) this year became the fifth industry-related organization to join the AAN umbrella.

The Wholesale Nursery Growers of America continues to grow in membership (now 205) as one of the five, and in services. Newsletters and

"New Idea Bulletins" have kept members up to date on new management and mechanization techniques. Most important step this year has been in helping members gain a new awareness of the need to understand labor unions and their activities.

Green Survival II, the new program for this year, has a great success on which to build. No single effort undertaken by our industry has ever received the enthusiastic coverage the nation's press has given to the Green Survival story. In a number of press conferences and interviews across the nation, Green Survival has been the primary interest for radio, T.V., garden writers, feature editors, and just plain news reporters.

Program Plans for '72 and Forecast: In brief, AAN will continue its major programming; all industry promotions will be stepped up; a cooperative advertising program will be started; a more retail oriented convention will be held; a stepped up landscape awards program is scheduled; and new services are being planned for all umbrella groups. Future for the AAN and associated groups is a "fantastic one" according to Executive Vice-President Lederer. All members have to do to participate in this future is to truly become businessmen, he says, and to study, read, and apply good business principles, at the same time taking advantage of the opportunities being defined by the associations.

AMERICAN SOCIETY OF CONSULTING ARBORISTS

12 Lakeview Ave., Milltown, N.J. 08850
Tel. (201) 821-8948

Dr. Spencer H. Davis, Jr., Executive Director

Officers and Directors for '72: George W. Goodall, pres., Goodall Tree Expert Co., Portland, Me.; Dr. L. C. Chadwick, pres.-elect, Chadwick Consulting, Columbus, O.; Walter P. Morrow, vice-pres., Consulting Arborist, Sewickley, Pa.; W. Roland Shannon, sec.-treas., Shannon Tree Co., Milford, Pa.; and directors, F. Earle Martin, Cedarvale Tree Services, Toronto, Ontario; Edwin E. Irish, Chas. F. Irish Co., Warren, Mich.; O. J. Andersen, Consulting Arborist, Houston, Tex.; and A. Murray Swanson, Consulting Arborist, Tucson, Ariz.

Annual Meeting: Feb. 17-19, International Inn, Tampa, Fla.

Highlights of '71: Shade tree evaluations highlighted and emphasized at annual meeting, after which the Society began an advertising program in national trade journals.

Program for '72: Annual meeting to deal with real estate and land evaluation as related to shade tree evaluations.

INDUSTRY ASSOCIATIONS IN 1972 (contd.)

Forecast for '72: The present interest and emphasis throughout the country on "ecology" and on "environmental control," plus trade magazine advertising should bring about an increase in diagnoses, tree surveys, and tree planning, along with appraisals for the industry.

AMERICAN SOD PRODUCERS ASSOCIATION

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

Dr. Henry W. Indyk, Executive Secretary

Officers and Directors for '72: Tobias Grether, pres., Cal-Turf, Inc., Camarillo, Calif.; Jack Kidwell, vice-pres., J. L. Kidwell Landscape Corp., Culpeper, Va.; William Latta, sec., Latta-Scholes, Princeton Turf, Kansas City, Mo.; George Stewart, treas., Karandrew Turf Farms, Inc., Suffield, Conn.; and directors, Robert Daymon, Emerald Valley Turf Nurseries, Gregory, Mich.; Wiley Miner, Princeton Turf Farms, Hightstown, N.J.; Ben Warren, Warren's Turf Nursery, Palos Park, Ill.; Dale Habenicht, H&E Sod, Tinley Park, Ill.; and John Nunes, Nunes Turfgrass Nurseries, Inc., Patterson, Calif.

Annual Meeting: Late June or July, 1972 at Toronto, Canada to be hosted by the Nursery Sod Growers Association of Canada.

Highlights of '71: Membership up by 25%. Summer program conducted in Michigan consisting of sod farm tours and field day studying Michigan State University's extensive sod research program. National guideline specifications for sodding have been approved and will be printed for distribution. Development of a cost accounting procedure for sod producers has been approved and initiated.

Program for '72: Educational conference and equipment field day, Feb. 22-24. Headquarters will be Disneyland Hotel, Anaheim, Calif. Host site for field day is Cal-Turf Farms, Santa Ana.

Forecast for '72: The predicted housing boom that includes single family dwellings, garden apartments, and condominiums, all mean more lawn areas. The increasing interest in achieving instant results means a lot of activity for the sod business, closely associated with the building industry. The trend toward a shorter work week indicates more leisure time and consequently increased utilization of recreation facilities. Many of these recreational activities depend upon a good turf cover. Sod will play a major role in satisfying the need and demands for a suitable turf on recreation areas. Much of the glamour of synthetic turf as a panacea for natural turf on athletic areas may rapidly dwindle. Now that the synthetic turf covers are being exposed to the test of time, varying environmental conditions and intensive use, many of its problems are becoming increasingly evident. A declining interest in the installation of synthetic turf covers on athletic areas and a swing back to utilization of natural turf, and sod, particularly, is anticipated.

The sod industry must become better represented in its national as well as local sod producer organizations. It is through united effort by means

of such organizations that the individual sod producer can stay abreast of new and rapid developments for the betterment of the sod industry.

GOLF COURSE SUPERINTENDENTS ASSOCIATION OF AMERICA

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

Ben J. Chlevin, Executive Director

Officers and Directors for '72: Richard C. Blake, pres., Mt. Pleasant CC, Boylston, Mass.; Robert V. Mitchell, v.-pres., Portage CC, Akron, Ohio.; Clifford A. Wagoner, sec.-treas., Del Rio G&CC, Modesto, Calif.; Palmer Maples, director, The Standard Club, Atlanta, Ga.; Jerry M. Murphy, director, Somerset CC, St. Paul, Minn.; Charles G. Baskin, director, CC of Waterbury, Waterbury, Conn.; Richard W. Malpass, director, Riverside G & CC, Portland, Ore.; Paul E. Mechling, director, Sylvania CC, Sylvania, Ohio.

Annual Meeting: Feb. 13-18, 1972, Cincinnati Convention Center, Cincinnati, Ohio.

Highlights of '71: Instituted Certification Program for Golf Course Superintendents.

Program for '72: Regional workshops for golf superintendents to be instituted.

Forecast for '72: The "economic crunch" of the last 18 months has put golf course superintendents on their mettle—to produce the same high quality golf playing surfaces their members have grown to expect in the face of some budget cutbacks. They will have their work cut out for them again in 1972 until the Nixon "freeze" produces the expected effect on its overall economy. The golf course traffic is not expected to diminish—in fact it probably will increase—adding to the Superintendents, problems of using less to produce more and better turf. It will be our Association's aim to remind golf club officials and members that temporary "economies" effected by mid-season cutting of budgets are false economics—often producing adverse effects on the golf course turf that must be corrected later at costs that usually exceed the original "saving."

HYACINTH CONTROL SOCIETY

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

Brandt G. Watson, Sec.-Treas.

Officers and Directors for '72: Robert J. Gates, pres., SW Fla. Water Mgmt. Dist., Brooksville, Fla.; Stanley Abramson, v.-pres., Southern Mill Creek Prod., Tampa, Fla.; Brandt G. Watson, sec.-treas., Naples Mosquito Control, Naples, Fla.; David L. Sutton, editor, Agricultural Research Serv., Ft. Lauderdale, Fla.; Robert P. Blakeley, director, Plantation Farms, Inc., Plantation, Fla.; Ray Spirnock, director, Central & Southern Fla. Control Dist. Flood, Miami, Fla.; Al P. Burkhalter, director, Dept. of Natural Resources, Tallahassee, Fla.

Annual Meeting: July 9-13, 1972, Miami Springs Villas & Hotel, Miami Springs, Fla.

Highlights of '71: Membership of the Hyacinth

INDUSTRY ASSOCIATIONS IN 1972 (contd.)

Control Society now over 300 strong. The future of noxious aquatic weed control in the State of Florida will depend on three types of control as follows: (1) Chemical Research. Physiological and Microbiological Investigations of noxious aquatic plants is underway by Dr. W. S. Silver and Dr. R. L. Mansell, University of South Florida; (2) Mechanical Research. This work is being investigated by Dr. Al Burkhalter, Aquatic Plant Research and Control Coordinator, Florida Department of Natural Resources; and (3) Biological. White Amur (grass carp) research will be a co-operative program by the Agricultural Research Station (Robert D. Blackburn, Botanist) and the Game & Fresh Water Fish Commission (John W. Woods, Chief of Fisheries Biologist).

Program for '72: The Society will support the necessary efforts in constructing two pieces of Legislation, in hopes of getting them passed in the next Legislature: (1) License or certify all people using chemicals in the waterways; and (2) Dissolve all Drainage Districts that do not have a maintenance program for their works to be maintained for weed control purposes and engineered design.

Forecast for '72: It will continue about the same, until current research can come along with new methods that are safe for the environment. Conditions of our waterways, as far as weed growth, will likely continue to get worse or will infest more and more water acres of valuable waterfront.

INTERNATIONAL PESTICIDE APPLICATORS ASSOCIATION, INC.

5600 SW Rosewood, Lake Oswego, Ore. 97034
Tel. (503) 636-6443

L. F. (Lew) Sefton, Secretary-Treasurer

Officers and Directors for '72: Charles Seibold, pres., Major Spray Service, Portland, Ore.; Don Mock, vice-pres., Shamrock Spray Service, Seattle, Wash.; L. F. Sefton, sec.-treas., Sefton Spray Service, Lake Oswego, Ore.; and directors, George Harrison, Washington Tree Service, Seattle, Wash., John Behey, Eastside Spray Service, Kirkland, Wash.; Bob Skanes, Crothers Spray Service, Tacoma, Wash.; Bill Owen, General Spray Service, Clackamas, Ore.; Jim Cole, Cole's Spray Service, Portland, Ore.; Ken Thorpe, General Spray Service, Clackamas, Ore.; and alternate directors, Jack Daniels, Greenup Spray Service, Seattle, Wash.; Lewis Crothers, Crothers Spray Service, Tacoma, Wash.; Gary Mulkey, Mulkey Tree & Spray Service, Junction City, Ore.

Annual Meeting: September 14-16, 1972, Jantzen Beach Thunderbird Motel, Portland, Ore.

Highlights of '71: Association fight to slow down action against DDT ban. Actions filed against both Washington State Department of Agriculture and the U.S. Environmental Protection Agency to enable all facts to be considered before a decision on ban. This is only action taken by any pesticide applicators. Cost has exceeded \$10,000 to date.

Name change was made to cover expansion of association from the regional name of Northwest

Pesticide Applicators Association.

Sprayorama, an annual tour and field day along with a 2-day educational program follow-up was held at Seattle, Wash.

A new chapter was formed in October from the San Francisco Bay area of California and admitted to the IPAA. The new group totaled 42 charter members. A similar group from the Los Angeles area has now inquired about forming another chapter group. This latter move came about as a result of an IPAA representative attending the Western Chapter International Shade Tree Conference annual meeting. Other chapter possibilities as a result of attendance at the most recent Sprayorama are New York, Washington D. C., Utah, and British Columbia, Canada.

Program for '72: (1) Continuation of an all-out fight to save Chlorinated Hydrocarbons and restore uses of DDT. Goal: To expose fallacies and bring to light the good done by these chemicals; (2) Strengthen our cause by enlisting all possible new Chapters and personnel in our Organization; (3) Present an Annual Meeting (Sprayorama) in September, 1972 which, hopefully, will bring out still more sane thinking on pesticides; and (4) Continue the upgrading of an already fine industry and assure the public that the safe and efficient way is through the Licensed Pesticide Applicator.

Forecast for '72: The Industry in 1972, and all coming years, must continue to grow. Population increase makes the preservation of all plant life a needed personal contribution of every pesticide applicator. With fewer producing food for more, and vegetation yielding to housing and industry, we are unrecognized benefactors to mankind. Our preservation of existing oxygen-producing vegetation makes us a unique industry in this day of air pollution. Scientists with facts are now defending this necessity and exposing pesticide fallacies. Truth is replacing sensationalism.

INTERNATIONAL SHADE TREE CONFERENCE, INC.

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

E. C. (Cal) Bundy, Executive Secretary

Officers and Directors for '72: H. M. Van Wormer, pres., Van Wormer Tree Service, Richmond, Va.; Dr. John A. Weidhaas, Jr., pres.-elect, Virginia Poly Tech. Institute, Blacksburg, Va.; F. Lewis Dinsmore, vice-pres., Dinsmore Tree Service, St. Louis, Mo.; 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 13-17, 1972, Newporter Inn, Newport Beach, California.

Highlights of 1971: I.S.T.C. processed a total of 263 new members for 1971. Membership is steadily increasing in all seven Chapters thanks to the efforts of many old members; I.S.T.C. publication "Shade Tree Evaluation" was revised and is a very popular item. Requests are averaging twenty per month; I.S.T.C. sponsored a National Committee

INDUSTRY ASSOCIATIONS IN 1972 (contd.)

to formulate Safety Standards for Tree Pruning. This work is now completed and the uniform standards will be published and made available to the separate states for implementation; We increased the size of our monthly magazine "Arborist's News" from 12 pages to 28 pages. This enlarged publication has permitted us to realize more advertisements to offset cost of printing; and total registration of 877 delegates was a record breaker at our 47th convention in Montreal during August.

Program for '72: Will continue the financial support of our research project at the University of Wisconsin titled "Effects of Transplanting on Physiological Responses and Growth of Shade Trees"; Will encourage the Federal Government of the United States and Canada to establish an Annual National Arbor Day during 1972; Will request that the U.S. Postmaster General consider the issuance of an Arbor Day Stamp in commemoration of the 100th Anniversary of Arbor Day in 1972; Will publish and make available our recently revised publication titled "Standard City Tree Ordinance"; and will continue the dissemination of knowledge in the science and art of growing and maintaining shade and ornamental trees via our annual and monthly publications, and our regional and international meetings.

Forecast for '72: The Industry Forecast during 1972 for those who work with shade and ornamental trees looks excellent; Arboriculture research and educational activities are increasing at the universities and the Federal Government. U.S. Forest Service is re-gearing to concentrate more on shade and ornamental tree problems as they relate to the urban population; Public in general is more aware of the need for professional tree service to keep their trees going and growing. There will be more emphasis placed on tree work safety regulations that will soon be enforced. This will up-grade the industry and will help eliminate the poorly equipped operator. Thus the professional approach will be more uniform throughout the industry; and in general trees are receiving more respect as a result of the emphasis placed on our environment.

NATIONAL AGRICULTURAL AVIATION ASSOCIATION

1101 17th St. N.W. Suite 808
Washington D.C. 20036
Tel. (202) 223-2822

F. Farrell Higbee, Executive Director

Officers and Directors for '71 ('72 slate will be elected at December annual convention): Les H. Mills, pres., La Crosse, Wash.; Terry K. Pfeil, vice-pres., Weseca, Minn.; Jack Duke, sec., Tuscaloosa, Ala.; Russell Benson, treas., Sterling, Colo.; and directors, V. Ray Thornton, Cane-Air, Inc., Belle Rose, La.; William O. Marsh, Aerial Application Technology, Inc., Mesa, Ariz.; Robert A. Phillips, Phillips Aero Agric. Ser., Ceres, Calif.; Richard Reade, Mid-Continent Aircraft Co., Hayti, Mo.; R. B. Allison, Allison Ag. Aviation, Connell, Wash.; Robert Bailey, North American Rockwell, Clinton, Miss.; Walter F. Ball, Ball Aero, Huron,

S. Dak.; Richard Carroll, Crop Care, Aledo, Ill.; Gary Coulter, Meeker Airport, Meeker, Colo.; Cecil Dorminey, Dorminey Dusting Service, Doerun, Ga.; Gene Barnes, East Prairie, Mo.; Richard D. Eccles, Calicopters, Stockton, Calif.; Luther Gibbs, Gibbs Aero-Sprays, Inc., Fremont, Ohio; J. H. Henley, Aero Agricultural Service, Inc., McAlester, Okla.; Walter Hensley, Hensley Flying Service, Havre, Mont.; B. L. Hinman, Bee's Airline, Plains, Kan.; Paul E. Hursh, Hursh Brothers, Inc., Amana, Ia.; Byron Hodgkin, Union Carbide Corp., Rolling Meadows, Ill.; Al F. Johnson, Air Enterprises, Inc., Magnolia, Del.; Jack Lenhardt, Lenhardt Airpark, Inc., Hubbard, Ore.; C. R. Lindhoff, Accurate Aero Forms, Des Moines, Ia.; Russell Miller, Cal-Mil Plastic Products, Inc., Carlsbad, Calif.; George F. Mitchell, Jr., M & M Air Service, Beaumont, Tex.; Neal Mitchell, Jacobs-Page Co., Oklahoma City, Okla.; Robert Mueller, Mueller Crop Dust Service, South Haven, Mich.; Joe Pugh, Lakeside Ag. Service, Inc., DeWitt, Ark.; Elmer Plettner, Jr., Plettner Aerial Spray, Sutton, Neb.; Darroll Schroeder, Schroeder Aviation, Davenport, N. Dak.; Dale Steward, Phoenix, Ariz.; Harvey J. Sutton, Helicopter Spray, Inc., Lake Wales, Fla.; Harold Tapley, Tapley Flying Service, Shaw, Miss.; and Bud Darling, South Carolina AAA, Bennettsville, S.C.

Annual Meeting: Dec. 11-14, International Hotel, Las Vegas, Nev.

Highlights of '71: Membership climbed to 500 industry members and 74 allied industry members.

Forecast for '72: This has been a good year except for isolated spots. Industry exceeded average annual growth rate. Next year expected to be better if economy improves.

NATIONAL ARBORIST ASSOCIATION

1750 Old Meadow Road, McLean, Va. 22101
Tel. (703) 893-7347

Allan T. Rains, Jr., Executive Secretary

Officers and Directors for '72: William P. Lanphear, pres., Forest City Tree Protection, Cleveland, Ohio; Glenn Burns, 1st vice-pres., Karl Kuemmerling Assoc., Inc., Canton, Ohio; John A. Shullenbarger, 2nd vice-pres., Gustin Gardens Tree Service, Gaithersburg, Md.; W. Roland Shannon, sec., Shannon Tree Co., Milford, Pa.; Robert Felix, treas., Harder Services, Inc., Hempstead, N. Y.; and directors, William A. Rae, Frost & Higgins, Burlington, Mass.; Thomas A. Morrison, H. A. Morrison Arborist, Wilmette, Ill.; Paul Ramsey, N. G. Gilbert Corp., Muncie, Ind.; and Boyd Haney, B. Haney & Sons, Franklin Park, Ill.

Annual Meeting: Feb. 13-17, 1972, International Inn, Tampa, Fla.

Highlights of 1971: As a major service during 1971, NAA headquarters has strived to keep members informed of important activities in Washington relating to the Occupational Safety and Health Act and the Wage-Price Freeze. This has been done through articles in the Association's monthly newsletter as well as through supplemental mailings.

(continued on page 74)



Early testing of Medicaps was done in 1969. Tree at time of treatment showed mild iron chlorosis. Today it is a thriving specimen.



Tree, used as control in '69 test with tree in above picture, also exhibited mild iron chlorosis. It died in 1970.

New and on the Market

SYSTEMIC TREATMENT VIA TRUNK INJECTION

A new systemic system for treating trees via trunk injection is now on the market. Treatment, at the moment, is limited primarily to use of iron for chlorosis.

The patented system consists of a series of capsules being injected or planted in the tree trunk. Implants are known as "Medicaps" and are placed directly into the cambium layer in the area of active sap flow. Creative Sales, Inc., Fremont, Neb., manufacturer and sales outlet for the process states that use of the capsules is both easy and effective and speeds the use of pre-measured materials into the tree system.

Normally, a 3" to 5" tree will require three Medicaps, placed around the trunk at about 5-inch intervals. Each additional inch of tree diameter will require another Medicap, are then driven into the pre-drilled holes. Each Medicap is 1½-inch long, permitting the capsule to be driven exactly ⅛-inch beyond the surface of the cambium layer. Treatment, according to Wolfe, requires only minutes per tree, using a standard drill and half-inch bit. And, he states, it should be good for 2 to 5 years unless the chlorotic condition is extremely serious in which case re-treatment earlier may be necessary.

Wolfe points to the Medicap technique as simply a plastic cartridge that serves as a container for a premeasured volume of chemical. It serves as its own applicator, has its own antirejection barbs, and provides its own cork to seal the application site. The Medicap is tapered, to allow for easy insertion into the predrilled hole, has four slots on the sides which allow for

release of the contents at a regulated rate. Slots, Wolfe reports, are lined according to Warren D. Wolfe, president of the corporation. Holes, one-half inch in diameter and 1¼ inches deep, are drilled into the tree trunk. The plastic, bullet-shaped Medicaps with a soluble sealant. This sealant retains the contents until contacted by tree sap at which time they are released into the sap stream.

Larger trees are easy to treat with new Super Medicaps. These have over double the iron content of those capsules first introduced. Wolfe also reports a new Mini-Cap is being introduced this season, which is ideal for plantings below 3" in caliper (i.e. field nursery plantings and highway or roadside plantings).

Wolfe, backed by a number of university research projects, believes that there is a great efficiency in trunk injection of iron. Iron compounds, he states, applied to the soil must be used at rates of 2½-4 pounds of product per inch of trunk diameter. With Medicap injection, using the concentrated form of iron, the rate may be as low as two grams or less.

Wolfe also reports that use of iron via the trunk implant system is only the beginning for the systemic method. Tests and research are underway with a number of promising systemic insecticides and fungicides, he continues, and there is reason to believe efficiency will be as great as that with iron. Tests to be made with different sized capsules will allow for rate studies, and possible use of combination ingredients.

A roundup of ornamental tree



Tools for the job consist of small hammer and portable drill and bit. Bulk pack of 100 iron Medicaps will treat 20 average trees, according to Warren D. Wolfe, Creative Sales, Inc.



Jim Elliott, left, production manager for Plumfield Nurseries, Fremont, Neb., and Warren D. Wolfe, president of Creative Sales, Inc., use new Mini-Caps for nursery trees down to 1-inch in size.

problems on which Wolfe reports research is underway or planned includes: (1) Dutch elm disease with systemic insecticides for possible control of the elm bark beetle; and systemic fungicides aimed at controlling the disease; (2) anthracnose which is an increasing disease problem in many sycamore trees; (3) mimosa webworm, a continuing problem; (4) bronze birch borer and other borers for which no acceptable control is currently available; (5) the pine tip moth and elm leaf beetle for which some systemic insecticides appear very promising; and (6) gypsy moth control.

Creative Sales, Inc., believes popularity to date for their new system stems from the fact that it avoids the common public resistance to sprays and dusts, and requires little time and equipment for a serviceman to handle a client problem. The system is also adaptable for the homeowner do-it-yourselfer, according to Wolfe.

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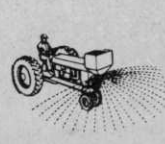
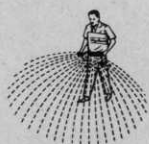
MODEL 99



ELECTRIC MODEL M-3



PTO MODEL S-3



meeting dates

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Indiana Annual Winter Conference, Indiana Association of Nurserymen and Indiana Arborists Assn., Stouffer's Inn, Indianapolis, Ind., Jan. 4-6.

Northeastern Weed Science Society, 1972 Convention, Hotel Commodore, New York, N. Y. Jan. 5-7.

Georgia Golf Course Superintendents Association, Annual Meeting, Augusta Golf Clubs and Holiday Inn, Augusta, Ga., Jan. 9-11.

Western Association of Nurserymen, 82nd Annual Meeting, Plaza Inn, Kansas City, Mo., Jan. 9-11.

Helicopter Association of America, 24th Annual Meeting, Stardust Hotel, Las Vegas, Nev., Jan. 9-12.

Mid-Atlantic Golf Course Superintendents, Annual Conference, Holiday Inn Downtown, Baltimore, Md., Jan. 10-11.

Tennessee Turfgrass Association, Annual Conference, King of the Road Inn, Nashville, Tenn., Jan. 10-11.

Nebraska Turfgrass Conference, Tenth Annual, Kellogg Center, Univ. of Neb., Lincoln, Neb., Jan. 12-14.

New Hampshire Turf Seminar, University of New Hampshire, Durham, Jan. 13-14.

Georgia Nurserymen Short Course, Annual, University of Georgia Center for Continuing Education, Athens, Ga., Jan. 13-14.

California Weed Conference, 24th, Del Webb Towne House, Fresno, Calif., Jan. 17-19.

Southern Weed Science Society, Annual Meeting, Statler Hilton Hotel, Dallas, Tex., Jan. 18-20.

Michigan Turfgrass Conference, Michigan State Uni-

versity, Kellogg Center, East Lansing, Mich., Jan. 19-20.

Ohio Chapter of the International Shade Tree Conference and the Ohio State University short course for arborists, turf managers, landscape contractors, garden center operators, nursery men, and others, at the Sheraton-Columbus Hotel, Columbus, Ohio. Jan. 23-27.

Virginia Turfgrass Conference, Sheraton Motor Lodge, Fredericksburg, Va., Jan. 25-26.

Colorado Farm Show, Community Building, Greeley, Colo., Jan. 25-26.

Pennsylvania Chapter of the International Shade Tree Conference, Marriott Motel, Philadelphia, Pa., Jan. 27-28.

Midwestern Chapter of the International Shade Tree Conference, Pick-Congress Hotel, Chicago, Ill., Feb. 8-10.

Southern Chapter of the International Shade Tree Conference, Marriott Motel, Atlanta, Ga., Feb. 12-16.

International Turfgrass Conference and Show, 43rd Annual, Golf Course Superintendents Association of America, Convention and Exhibit Center, Cincinnati, Ohio, Feb. 13-18.

Maryland Arborists' Day, University of Maryland Center of Adult Education, College Park, Md., Feb. 15.

Maryland Nurserymen's Day, University of Maryland Center of Adult Education, College Park, Md., Feb. 16.

Colorado Agricultural Aviation Assn., 24th Annual Meeting, Continental Motor-Hotel, Valley Highway and Speer Blvd., Denver, Colo. Feb. 28-29.

Williamsburg Garden Symposium, Colonial Williamsburg Gardens, Va., Apr. 9-15.

Canadian Chapter of the International Shade Tree Conference, Holiday Inn, Hamilton, Ont., Canada, Apr. 14-15.

INDUSTRY ASSOCIATIONS IN 1972 (from page 71)

Members have also received the results of an equipment survey conducted by the Association, and will receive complete industry statistics during the fall.

The Association has made its Home Study Program in Arboriculture available to non-members, and Standards on Tree Care have been revised and reprinted and are available for sale.

A membership campaign was launched during September, and will remain in full swing through early 1972.

Program for 1972. During early 1972 the Association's membership campaign will continue, as will such services as the monthly newsletter and other mailings of pertinent material. The industry statistics will be compiled again during 1972. It is hoped that the Association will be able to print a document on running a business, covering such

topics as accounting, personnel, taxes, and general management.

Forecast for 1972: The economic outlook for 1972 as it pertains to the tree business is probably going to relate directly to the success of the new inflation controls. 1972 will be better than 1971 but definitely not a boom year. We will have to pay close attention to the Government regulations such as the new safety law provides. All the help we can get, such as training our men with the National Arborist Association Home Study Program, attending the February Annual Meeting, and learning our responsibilities for safety will add to our ability to compete against the profit squeeze of inflation. To summarize, 1972 will be a good year for the better prepared. It will be very competitive, and costs must be kept down as inflation is not controlled as yet.

SOD FARM/GOLF COURSE COMBO

BOB CLARK converted his corn fields and dairy farm into a thriving public golf course.

Acting on a suggestion 11 years ago, Clark converted the 160-acre family farm on the southern outskirts of Des Moines into an 18-hole public golf course. Later he started growing cultivated sod for market.

"I didn't know the first thing about golf courses or golfing," Clark said. "I had no idea what grass to sow for greens even."

First he went around the area and studied other courses. Then he enlisted the assistance of two Iowa State University professors, Dr. Elliott Roberts, when he was at Iowa State, and Don White. They designed the course and staked it out. Clark tore out fences and plowed up the entire farm. An auction disposed of unneeded equipment and cattle.

Clark also got expert advice on the kind of grass to use from Polk County Extension Agent Grover Hahn.

The first nine was completed in 1961. Clark called in experts to design the second nine which was developed in 1963.

"It was quite a change for the Clark family because we had always been farmers," he said. "My father, who was 77 at the time, agreed to the new venture—quite a change of direction."

The elder Clark still buzzes around



Bob Clark and son, Bob, check daily job schedule.

the course in a golf cart and even shoots a round or two now and then.

The old cow barn now serves as a shed for golf carts. A modern pro shop has been added.

Known as Willow Creek, the bustling course is one of the most attractive in Iowa. A creek that used to be a watering spot for Clark's 24 Holsteins, has been dammed to make lakes and provide hazards for the

linksters. Its also a source of irrigation for the course.

In 1965, Clark took another major step by instituting a sod farm alongside the course.

So successful has the operation been that Clark is searching for more acreage to grow sod.

"We're about at the saturation point for our sod business," he said. "The sod farm came as an offshoot

Clark and son, Dan, review golf course maintenance projects. Course and lake are in background.





Clark's sod business started small, with sales doubling each year. He sold more than 60 acres in '71.

of the golf course and now is coming into its own as another major source of income."

Clark said that the sod business has doubled every year, reaching 40 acres in 1970. He sold more than 60 acres this season.

The sod farm covers 130 acres of Kentucky Bluegrass for sale on both the retail and wholesale levels. His customers are contractors and home-builders as well as individuals who merely want to make repairs in their yards.

"It takes one to three years to grow grass on the sod we sell," Clark said. "The weather is the determining factor because we don't irrigate the sod farm."

Most of the approximately 25 employees are members of the Clark clan.

"It's a family team," said Clark. "We like each other and get along surprisingly well. All live on or near the golf course. I'd be lost without these people."

Clark's wife, Ardis, is his No. 1 assistant. Two daughters, Susan, 22, and Lori, 12, work in the clubhouse. Sons Bob, 24, and Dan, 14, do "anything and everything" around the course and sod farm. Clark's sister, Mrs. Mary Acheson, is the bookkeeper. One of her sons, Kent, manages the sod farm; another, Sam, has worked for Clark since he was eleven and is marrying a girl who used to work at the clubhouse. Two more of Clark's nephews, brothers Bill and Jim Baumberger, have also worked for him. About the only nonrelative is Dale Foster, grounds superintendent.

Of his sod operation, Clark says, "We sell it any way the customer wants it — cut, rolled, delivered and laid. We'll even prepare the ground for laying."

The workhorse machine in his equipment stable is a Massey-Ferguson MF 20 industrial tractor equipped with a scraper. "We do everything with this combination," Clark said. "During the season it goes nearly 12 hours a day. When we get caught up on the sod farm, we put it to work mowing the golf course."

Weather and workers are Clark's biggest problems.

"It's hard to get the kind of help you need — the ones who want to work," he said. "Also, we have a seasonal operation and can't keep a full work force on hand all year. This means we lose a lot of people from year to year and have to spend valuable time training new workers."

Plant diseases and weeds posed an early threat to both operations, but Clark said that experts from Diamond Shamrock Chemical Company recommended application of

Dacthal and Daconil.

"They did the trick," he said.

Clark said he is still looking for new enterprises to be spawned by the golf course.

"The course provides only a fair income," he said. "We need to branch out more. What we have now enables us to hold this high priced land together and possibly get more. We feel we are just scratching the surface of the potential offered here."

Sod operation has been successful. Clark is now seeking more land to expand.



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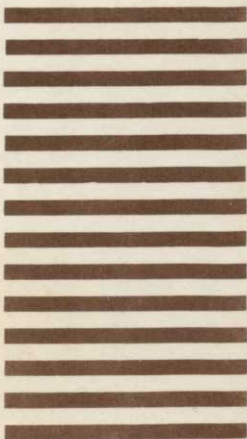
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industry people on the move



James T. Conner, to Chemagro as Washington, D.C. representative in a government, legislative liaison position, from the National Agricultural Chemicals Association position of director of congressional affairs.

* * *

W. Richard Hildreth to director of the Saratoga Horticultural Foundation, Saratoga, Calif., from California Arboretum at Davis. He succeeds **Maunsell Van Rensselaer**, now director emeritus.

* * *

Ambrose DeGidio, named general manager of Toro's Turf Products Division, replacing the late **Dr. Finn J. Larsen**, from director of engineering and manufacturing of the same Division.

* * *

Ernest W. Neben, to Wanye Manufacturing, Pomona, Calif., as vice-president, manufacturing, from general manager's position with Cochran Western Corp.

* * *

James E. Olds, to Toro as patent attorney, from St. Paul, Minn., firm of Kinney, Alexander, Sell, Steldt, and Dela Hunt.

* * *

Einar Jacobsen, elected chairman of the board of

Jacobsen, from position of president, and **Neal D. Crane**, named president and chief operating officer, from American Machine & Foundry where he was vice-president.

* * *

Paul L. Dederich, appointed sales manager of R. E. Chapin Mfg. Works, Inc., Batavia, N.Y., succeeding **William R. Mahrt**, who retired Sept. 1.

* * *

D. W. Clark, appointed media manager, American Cyanamid; and **Dennis McCormick**, named assistant manager, public relations.

* * *

Thomas L. Proctor, appointed sales representative for professional pest control, Velsicol Chemical Corp.

* * *

Dr. John R. Hall, III, named Extension turfgrass management specialist, University of Maryland.

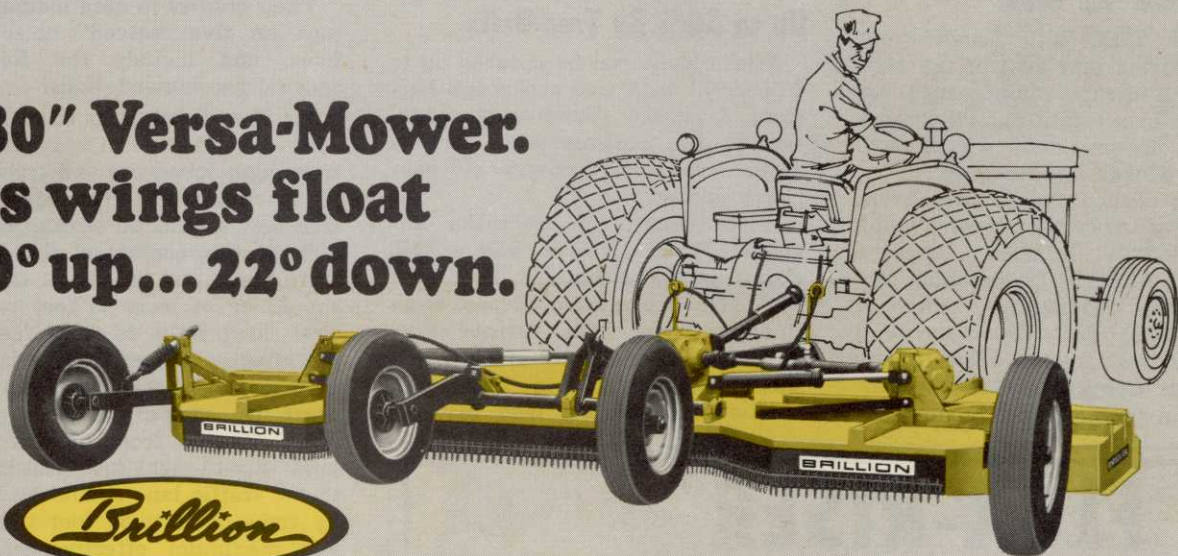
* * *

David H. Kutner, appointed to an executive capacity in office of president for W. R. Grace & Co., from presidency of Hammond Organ Co.; and **Bernard H. Burton** and **O. Ben Hander** elected corporate vice presidents for W. R. Grace. Burton, from vice president's position with Engelhard Mineral and Chemicals Corp., and Hander from vice president of Grace's General Development Group.

* * *

Harry O. Bercher, retires as chairman of the board of International Harvester; **Brooks McCormick**, president, elected chief executive officer in addition to duties as president.

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Roy F. Broyhill

FEMA Elects Broyhill

A manufacturer of speciality spray application equipment, Roy F. Broyhill, was elected president of the Farm Equipment Manufacturers Association at the recent 21st annual convention at Denver.

Broyhill is president of The Broyhill Company, Dakota City, Neb.

The Association membership manufactures "shortline" equipment and accounts for more than a third of the total farm equipment market. Currently, more than 250 of these companies from the U.S. and Canada and from 10 foreign countries hold membership in FEMA.

Minnesota '72 Team

George Lilli, Lilli Landscaping, was reelected president of the Minnesota Landscape Maintenance Association in a recent annual session. Named vice-president was Lowell Rinker, Rinker Landscaping.

Others elected for '72 are: Leonard "Andy" Anderson, Green Thumb Lawn Service, treasurer; Dwayne Albrecht, Albrecht Landscaping secretary; Mel MacFarlane, editor of publications; Earl Halvorson and Ken Simons, special consultants; and Walt Cooper, business coordinator and promotions director.



Representatives of Dow Chemical USA, the Farm and Industrial Equipment Institute (FIEI), and the Future Farmers of America, recently signed a memorandum of understanding for sponsorship of the FFA National Safety Award Program. Representatives of the organizations included: (left to right seated) Lyle Yost, president, FIEI and president of Hesston Corporation; Dan Lehmann, past national FFA president; W. L. Corbin, general sales manager, Kansas City District, Dow Chemical; (standing) Doug Hewitt, executive secretary, FIEI; Fred Stines, publisher and chairman of the National FFA Foundation sponsoring committee; and Jim Hansen, public relations manager, Dow Chemical.

Traffic Noise Reduced Up to 50% By Tree Belts

Traffic noise can be reduced up to 50 percent with tree and shrub barriers. A similar sound level reduction is also possible with barriers around shopping centers or near heavy industry.

A University of Nebraska engineer, David I. Cook, and a U.S. Forest Service researcher, Dr. David F. Van Havebeke, have released these findings. They have further tests underway to study use of trees and shrubs in combination with solid barriers and natural land features

in noise abatement.

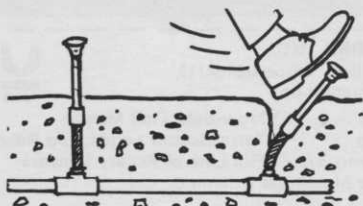
Their studies to date include a report on five "solved" noise problems, and include the following specific recommendations:

(1) Tree-shrub belts 65 to 100 feet wide are effective in reducing noise from high speed car and truck traffic in rural areas. The edge of the tree belt should be within 50 to 80 feet of the center of the nearest traffic lane, and the center tree rows should be at least 45 feet tall; (2) Tree-shrub belts 20 to 50 feet wide are effective in reducing noise from moderate-speed car traffic in urban areas. The edge of the belt should be 20 to 50 feet from nearest traffic lane. Six-to-eight-foot shrubs next to the traffic lane should be backed by rows of 15-to-30 foot trees; (3) For maximum effectiveness, tree-shrub belts should be tall, dense, and located close to the noise source, rather than close to area protected. Evergreen trees and shrubs are most effective where year-round noise screening is desired; and (4) Tree-shrub belts should be about twice as long as the distance from the noise source to the receiver.

The report, "Trees and Shrubs For Noise Abatement," is available at 50 cents from the Department of Information, East Campus, University of Nebraska, Lincoln, Neb. 68503.

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insect report



TURF INSECTS

FALL ARMYWORM

(*Spodoptera frugiperda*)

TEXAS: Second generation increasing on grasses in Erath County. Apparently decreasing in south-central area.

A STINK BUG

(*Edessa florida*)

VIRGINIA: Adults collected in house in Cloucester County October 6. This is a new county record.

GRASSWORMS

(*Mocis* spp.)

FLORIDA: *M. latipes* accounted for 90 percent of populations; damage severe to 10-acre pangola grass pasture at Loxahatchee, Palm Beach County and 0.5 to 1-acre spots in pastures at Belle Glade.

A DELPHACID PLANTHOPPER

(*Delphacodes propinqua*)

ARIZONA: Moderate to heavy in Bermudagrass seed at Yuma, Yuma County.

INSECTS OF ORNAMENTALS

BRONZE BIRCH BORER

(*Agilus anxius*)

OREGON: Survey of ornamental birches in Pendleton, Umatilla County, detected infestation in eastern sector of city. Previously, infestations in southwest sector.

HAWTHORN LACE BUG

(*Corythucha cydoniae*)

PENNSYLVANIA: Adults infested *Crataegus Crataegus phaenopyrum* at Kettanning, Armstrong County, October 1. This is a new county record. Adults infested *Crataegus monogyna stricta* at Gilbraltar, Berks County, September 30.

A LACE BUG

(*Stephanitis takeyai*)

PENNSYLVANIA: Adults moderate on *Pieris japonica* at Kimberton, Chester County, October 1; adults light on *P. japonica* at Media, Delaware County, September 30, for new county records; adults heavy (treated in July) at Audubon, Montgomery County, October 6; heavy on azalea (yellowing) in nursery at Glen Mills, Delaware County, September 30.

CRANBERRY SPANWORM

(*Anavitrinella pampinaria*)

ARIZONA: Controls difficult in many instances in Maricopa County.

TREE INSECTS

BARK BEETLES

(*Dendroctonus* spp.)

SOUTH CAROLINA: Populations of *D. terebrans* (black

turpentine beetle) and *D. frontalis* (southern pine beetle) increasing on pines in Oconee, Aiken, and surrounding counties. NORTH CAROLINA: *D. frontalis* increased in Durham, Person and Granville Counties. In other areas, activity remains about same or less than earlier in 1971. Salvage control continues.

VARIABLE OAKLEAF CATERPILLAR

(*Heterocompa manteo*)

OKLAHOMA: Moderate on oaks in Tulsa County. Light on pin oak in Stillwater area, Payne County. TEXAS: General larval infestations in oaks throughout northeast area. Isolated infestations on oaks in Travis and Montgomery Counties.

A LECANODISPID SCALE

(*Lecanodiaspis prosopidis*)

UTAH: Heavy on ash twigs at Moab, Grand County, September 1.



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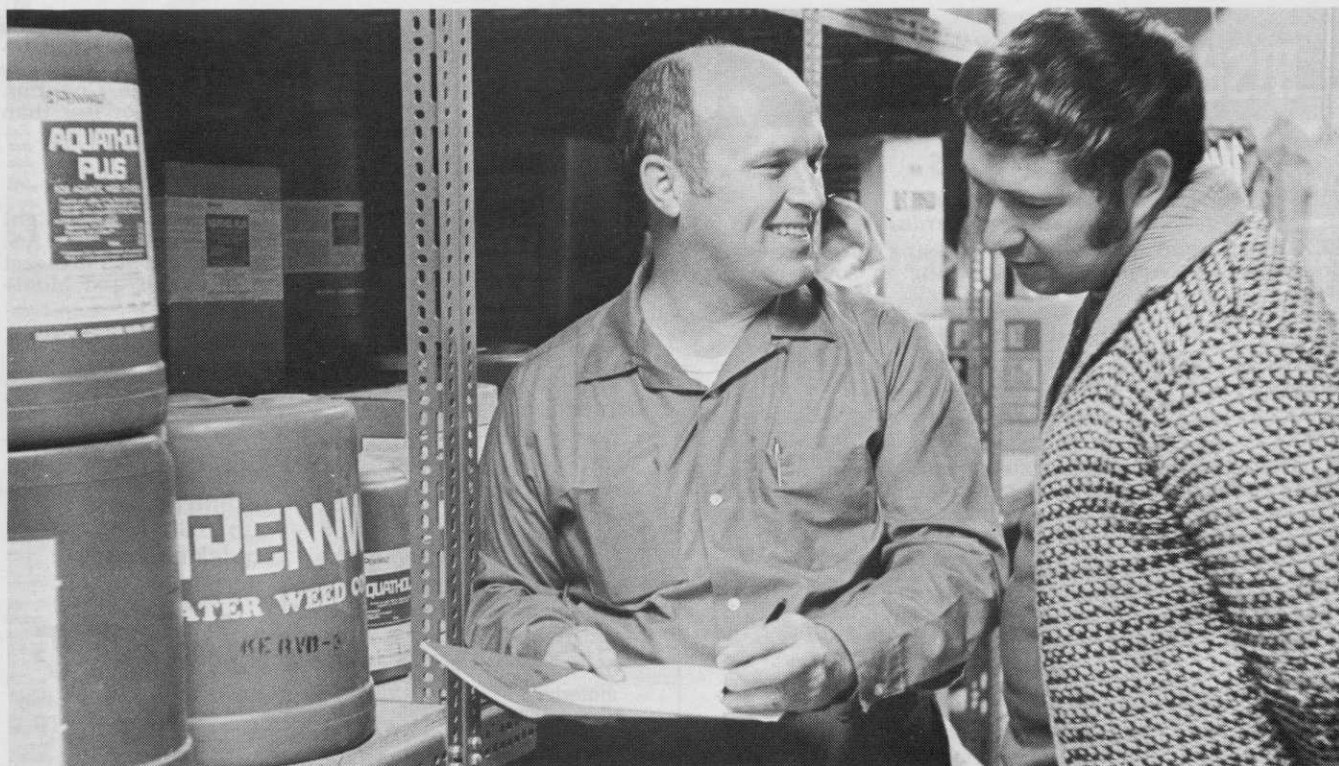
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Jim Burdett, left, and Ross Smith, Burdett's, Inc., discuss scheduling of manufacturer representatives for a 5-month program called "Burdett's Walk-In and Talk."

New System for Customer Orientation

WALK IN AND TALK

"Burdett's Walk In and Talk, 1971-72," a new type promotion, has been scheduled by Burdett's, Inc., Lombard, Ill., dealers in seeds, fertilizers and golf course supplies, as a service for customers. Walk-in sessions began Nov. 1, and will extend through Mar. 27, 1972.

More than 20 companies, plus the state of Illinois will provide representatives for a series of "learning bull-sessions." Each firm presents a day-long program at which their particular product line or service is shown and demonstrated. Held at the Burdett's, Inc. warehouse, programs include sessions from 9 a.m. to 12 noon, and from 1 to 4 p.m.

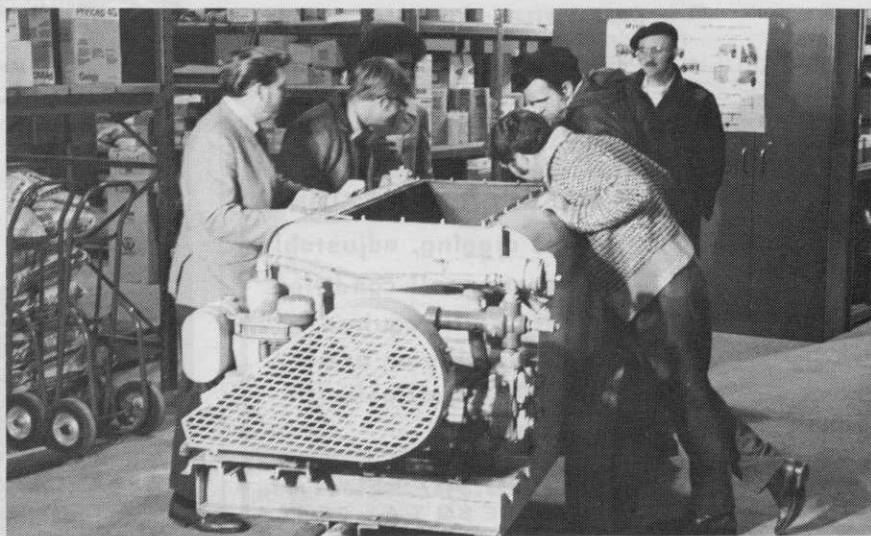
The State of Illinois will be represented by the Horticultural Inspection Supervisor from the Department of Agriculture, division of plant industry.

"Our goal is to give customers first-hand information direct from company representatives," says James R. Burdett, vice-president and general manager of Burdett's, Inc. "We feel that conventions and open houses do not provide everyone with enough time to find out new information, discuss it, and really

nail down the full benefits of new products, or even a better way to use the older ones! At these sessions customers may walk on, question the experts, explain their individual problems, seek a solution and

leave with a new outlook. You can cover a lot of ground when you're face to face discussing something," he continues "and we're looking forward to some enjoyable, informative sessions."

Early in program. Left to right, Art Gerdes, F. E. Myers Co.; Jack Crippan, Crippan Landscaping; Johnnie Naughn, Dept. Mental Health, Ill.; Ross Smith, Burdett's, Inc.; Ron Grundberg, North Shore Spray; and Joe Parch, Dept. Mental Health, Ill.; look over Myers unit prior to Gerdes tearing it down for demonstration.



Florida Nurserymen's Annual

The 1400-member Florida Nurserymen and Growers Association has just completed its largest show and short course. This annual event this year registered \$300,000 in sales at the show itself, held at Hollywood-By-The-Sea.

Important in addition to the show is the short course. Newly featured this year was a presentation by Dr. P. L. Neel. He discussed the pros and cons of staking young trees.

Dr. Neel is a newcomer to the Agricultural Research Center at Fort Lauderdale. A Pennsylvanian, he recently arrived in Florida from California, where he completed the requirements for his Ph.D. For the past four years, Dr. Neel has been the Graduate Research Fellow of the International Shade Tree Conference.

His findings indicate that trees grown with little or no staking have larger trunk diameters close to the ground, but are not as tall as trees rigidly staked.

Dr. Neel doesn't recommend staking when trees are properly grown in a nursery; they may actually become dependent upon the stakes for support, even when later planted in the landscape. Yet, minimal staking at an early age "often prevents vandalism."

A treelet, he said, which is rigid enough to stand upright by itself, and has the ability to give with the wind and later returns to an upright position, can justifiably be called a strong tree. He stressed, however, that the production of such a tree requires disease and pest control, proper fertilization, watering and adequate space for lighting the lower branches. He discouraged pruning; trim only enough to maintain "apical dominance" and tree form.

Dr. Neel described "improperly grown" as can to can, causing serious crowding and shading. Result is, treelets grow tall and spindly and lower branches are shaded out.

He has found, he said, that unstaked, unpruned trees grow less in height but the most in diameter, and with greater taper, vs. trees staked and the lower branches pruned, which tends to make trees grow taller, with less taper and trunk caliper.

In one of his stake-experiments, it was noted that trees supported by 1" x 1" redwood stakes bent away



Honored for his many years of services to Florida's horticultural industry, Jim Griffin, executive vice-president, FNGA, receives award of eminence from Hal Jones, director, Div. of Plant Industry, Gainesville. Griffin's name will be inscribed on the Award of Eminence honor roll in the Doyle Conner Building at Gainesville, Florida.



Spearheading program were, left to right, Joseph Welker, president of FNGA, Duval Landscaping, Jacksonville; Dr. James Strobel, Ornamental Horticulture, University of Florida; and Dr. P. L. Neel, Agricultural Research Center, Fort Lauderdale.

from the trunks when untied. A subsequent experiment was run to determine whether it was the shading of the trunk by the stake or the pressure against the stake which caused the bending. Results indicated that the unilateral shading was the apparent cause of the bending. On the other hand, treelets supported with plexiglass stakes, with sunlight reaching the trunk, stood upright when untied.

Another featured speaker, Julius Richmond, Electronic Data, Inc., of Houston, speaking on inventory control, warned of the cost of stagnant inventory. Every dollar of inventory

must earn at least 5% to 7% each week to pay for its share of fixed expenses, which include overhead, maintenance, lighting, etc., but not the cost of labor and capital investment.

If inventory is stagnant, and fixed expenses are going on, it will cost money to keep an item, plus what you already lost by not allocating its space to another faster moving plant.

Inventory control tells you during periods of demand, the quantity of plants by size, type and quality that can be produced and sold at a profit. Also important, he stressed is to

know the total useable nursery space, as well as the allocated space available for each block of plants. This information permits better and quicker decisions.

Also, by maintaining intelligent inventory levels, a severe problem is bypassed, namely, "Out of Stock." Nothing sours a customer quicker than being told "we're out of hibiscus." Not only is a sale lost, but in many cases competition gains another customer.

Speaking on weed control in nursery cans, Prof. Carl Whitcomb, Dept. of Ornamental Horticulture, University of Florida, stressed that sanitation is the crux of keeping down weeds. "And," he said, "Don't be lulled by size, even the wee ones can go to seed; don't allow it."

Sanitation can be expensive, he pointed out, but not as much as overgrown weeds which compete for food and water. Herbicides are only a tool, and not the ultimate answer in weed control, but when used properly will give good service. One of its values is that it doesn't leach. Container stock needs more water because of the concentrated root system (plants can be stunted), compared with plants in the field.

He warned against uneven distribution of herbicides; spraying is temporarily okay, drenching is best, and granules are poorest. The latter will decompose from light and volatilise, while an irrigation system can carry the chemical too deep, too quickly, and is not the answer because of uneven application and subsequent waste.

The rate of application is important, and a shaded soil surface will protect the chemical from deteriorating and evaporating.

Jim Griffin, Jr., vice president of FNGA, was honored with an Award of Eminence by Hal Jones, director of Florida's Division of Plant Industry. Mr. Griffin's name will be inscribed on the Award of Eminence Honor Roll in the Doyle Conner Building in Gainesville.

More than 2100 persons attended the show and short course, which broke all previous records.

More than \$2,000 in prizes, including cash, weekends at plush resorts, etc., went to lucky exhibitors and attendants. An armed guard presented a \$1,000 bill to Nick Locante, Nick's Garden Center, Boca Raton; and \$500 to George Russell, Russell, Inc. Miami. Also, Bob Plyler, Arvida Nurseries, Miami took home a \$50 bill, and a color TV set went to Ralph Jones of Kerr-McGee Co., (formerly Wilson-Toomer Fertilizer Co.) of Jacksonville.

Threat to Florida's Palms

LETHAL YELLOWING

A new palm tree disease, called lethal yellowing, is slowly killing coconut palms in southern Florida. To date, no cure has been found.

The disease currently is damaging trees in West Africa, has been known in the West Indies for a century, and has been sporadic in attacks in Key West, Fla., for some 35 years. Recently it has been found for the first time at Key Largo and Little Tork Key, Fla. But the first occurrence on the U.S. mainland was some two months ago at both Coral Gables and Miami. First danger sign is dropping of small, premature coconuts.

When attacked, the foliage of trees begins to turn yellow, starting with the lower fronds. No fruit will set. Male flowers will be dead and black. The vegetative bud dies, as do all leaves. Finally, the dead top falls away in the wind, and only the tall, naked tree trunk remains. This is a fatal series of events, and occurs within a three to six-month period after affliction.

Lethal yellowing destroys all coconut palms in its path but moves slowly. It is an infectious disease, presumably restricted to coconut palms in Africa and America. According to Dr. Daniel A. Roberts, Professor of Plant Pathology, Institute of Food and Agricultural Sciences (IFAS), most scientists believe a virus is the agent, though viral particles have not been discovered yet in diseased trees. "We have strong evidence that other known plant pathogenic agents—bacteria, fungi, nematodes—are not associated with lethal yellowing," says Dr. Roberts. "The agent is most likely carried from diseased to healthy palms by insects with piercing-sucking mouthparts."

Scientists working with the Food and Agricultural Organization of the United Nations and with the Coconut Industry Board and Ministry of Agriculture in Jamaica obtained evidence that a species of whitefly may transport the pathogen. Research on transmissibility has been conducted at the U.S. Naval Station in Key West by scientists from the Division of Plant Industry, Florida Department of Agriculture and Consumer Services, and from the Plant

Pathology Department, Institute of Food and Agricultural Sciences, University of Florida.

Many questions concerning the disease are still unanswered. Thorough and immediate research is needed. The best corrective now, according to Dr. Roberts, is to destroy all coconut palms the moment they show symptoms and replace them if possible with resistant lines of Malayan palms. Ordinary coconut palms can be planted in their place on the chance they'll escape infection until after the disease has run its course in the region.

An alert citizenry may be able to check the spread of destruction by learning to recognize lethal yellowing and by making the sometimes hard decision to sacrifice swiftly the already diseased palms in the interest of those that have thus far escaped. Both IFAS and the Division of Plant Industry are prepared to assist in every possible way to get rid of the lethal yellowing already in Florida palms and to check its dreaded distribution to the plants that still enjoy good health.

New Book Features Diseases of Trees

A new and comprehensive book which was 10 years in the making, "Diseases of Forest and Shade Trees," is now available.

Published by the Forest Service of the USDA, the new publication is authored by Dr. George H. Hepting, noted forest pathologist. Until his recent retirement, Dr. Hepting was Chief Plant Pathologist at the S.E. Forest Experiment Station, Asheville, N. C.

The book includes pathology of more than 200 trees, important in the nation. Most are native, but many introduced species used for shade or ornamental use are included, as were some orchard trees. The Forest Service expects the new book to find ready use as a standard text and reference work.

Cost is \$4 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20412.

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

LARGE PROGRESSIVE TREE service company is interested in employing a man capable of assuming the direction of tree, lawn, and garden service to individuals. We are presently engaged in this activity but wish to expand this phase of our service. We can offer a good salary with the opportunity of a bonus, pleasant working conditions, and the normal benefits. We also have an excellent hospital, accident, and life group plan. Write Box 72, Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

SEEKING DYNAMIC professional turf expert to join two MBA's in organization and operation of innovative lawn service company. Individual should be experienced in turf management and 24 to 36 years of age. Great opportunity to help create exciting new service organization. Financial and legal foundation laid for spring start-up in major midwestern city. Send letter describing background and life goals to Box 74, Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

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 73, Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

SOD NURSERY MANAGER. Young, married man for 400 acre operation serving Chicago metropolitan area. Send resume. Box #75, Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

USED EQUIPMENT

69 SKYWORKER 1044-A, 45 ft. mounted on F-600 Ford with hydraulic controls from crow's nest and 14 cut. ft. dump box. Asking \$10,800.00, excellent condition. Also 12" Asplundh chipper, rebuilt 6 cylinder engine. Asking \$1,800.00. 63' Dodge 4-wheel drive ideal for mounting tree spade. Asking \$1,200.00. Wanted: Series #5 truck mounted National crane. Edwards Tree Service, 3190 Cooper Foster Park Rd., Vermilion, Ohio 44089. Call 216 967-6750 or 933-6750.

RECONDITIONED brush chippers, sprayers, log splitters, stump routers, bucket trucks. Let us know your needs. Equipment Sales Company, 5620 Old Sunrise Highway, Massapequa, New York 11758. Phone 516 799-7619.

1968 ASPLUNDH 16" 8 cylinder Chipper, \$3400.00; 1968 5T Alenco Crane with 60' boom extension on Ford Chassis, \$10,500.00. Ohio Chipper & Equipment Co., Mentor, Ohio 44060. Phone 216 255-4355.

1968 ASPLUNDH 16" V8 Brush Chipper, \$2550.00. Very good condition and very clean. Kasik & Sons Landscaping Contractors, Riverside, Illinois 60546. (Div. of KAGO, Inc.) 312/447-7393.

CHIPPERS — Asplundh nine inch, running and in good condition. Jaflo, Inc., P.O. Box 262, Allentown, Pa. Phone AC 215 395-3213.

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.

FARMS FOR SALE—78 acre north- ern Indiana muck sod farm with modern residence and outbuildings. Complete with all equipment. Established business. 140 acres growing sod with lease. Favorable contract sale. Schrader Real Estate, Inc., 209 W. VanBuren, Columbia City, Ind. 46725. Phone 219 244-7606.

SPRAY AND TREE SERVICE—Ill- ness forces sale of fast growing but stable business. Regular four time per year customer route. Very modern equipment. \$34,500.00, terms. Write: George DesBrisay, 333 American Bank Bldg., Portland, Oregon 97201.

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.

MISCELLANEOUS

TREE APPRAISALS AND SUR- VEYS: For names of members of American Society of Consulting Arborists, Inc., nearest you, contact: Executive Director, ASCA, 12 Lakeview Avenue, Milltown, N.J. 08850.

POSITIONS WANTED

GREENS SUPERINTENDENT Class A Member G.C.S.A.A. P.G.A. Class A desires position. Experienced all departments of golf course operations. Best of references. Phone Waterman, Ill. 815 264-3523.

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I don't spray weeds, sir. I stomp 'em to death.

Trimmings

SYNTHETIC TURF promises to become a mainstay in the American life style whether or not it continues to be used extensively for athletic fields. New markets are developing or being developed in both consumer and industrial markets. Indications are that Monsanto's consumer sales this year (including doormats) will exceed commercial sales. New markets for synthetic turf (by American Biltrite, 3M, Ozite, Chevron, Lee & Mohawk and others) include synthetic ground coverings around motels, gas stations, shopping centers, highway medians, and homes. One report even has Astro-Turf being used to cover Hawaiian cemetery plots owned by Chinese whose religion permits them to attend grass on plots only two weeks of the year.

* * *

ROADS AND STREETS in this country now total 3.7 million miles, surprisingly up only slightly in the last 15 years from about 3.4 million. And only about 15 percent of this total is municipal mileage. The balance is rural. Further, the Federal government has jurisdiction only of roads in National Forests, Parks, etc. This amounts to about 5 percent of the total (188,000 miles), the balance being under state or local control.

* * *

SODIUM appears the chief cause of damage to plant growth where plants are subjected to high concentrations of household laundry. Study by two VPI scientists showed other soluble salts along with the sodium delayed emergence of seedlings in corn plants. Abnormal growth was also common including bending, abnormal constrictions across leaves, discoloration, and in some cases death of the corn plants in less than three weeks. Phosphorus was not a factor, apparently because it is a prime fertilizer element which improves plant growth.

* * *

A MOVIE produced by the National Agricultural Chemicals Association entitled "Norman Borlaug: Revolutionary," is gaining popularity. It was selected to receive a Golden Eagle Award by CINE, the Council on International Nontheatrical Events, plus an Award of Merit in the '71 American Horticultural Film Festival. Dr. Borlaug, Iowa-born agronomist, Nobel Peace Prize winner (in 1970 for developing new wheat strains), and director of an international wheat research program at Mexico City, has become a

national news figure of late. His testimony at hearings of the Environmental Protection Agency recently at Washington, D.C. scored all efforts to ban DDT because, he testified, "Without DDT and other important agricultural chemicals, our goals are simply unattainable—and starvation and world chaos will result." He said that we used 290 million acres of farmland last year to produce food for ourselves and other nations. "With the technology used 30 years ago—when most of today's pesticides and fertilizers were nonexistent—we would have required nearly 600 million acres..." Dr. Borlaug also appeared last month before 1000 delegates from 125 countries attending the 16th Governing Conference of the United Nations Food and Agricultural Organization. He literally scored environmentalists for their anti-DDT campaign and won strong support for his position from the world FAO group. Replies can be expected shortly, especially from specific groups including what he termed the "new legal arm of the movement," the Environmental Defense Fund.

* * *

SCIENTISTS IN INDIA are working on a research project to find ways to speed the tree growth, with U.S. funds. A foreign currency grant is for a basic study of dormancy and growth control of Himalayan spruce, similar to U.S. spruces. Conifer seedlings grow continuously for up to 10 months. Then a terminal bud forms and dormancy sets in. When the bud opens, growth begins again for a few weeks; then, another bud is formed and dormancy again occurs. Indian scientists will seek ways to make trees grow for several months each year.

* * *

BOOK REVIEW

THE MODERN GOLF COURSE SUPERINTENDENT, a primer of history and experiences by a veteran golf course superintendent, Richard Viergever.

The book is soft cover, 8½x11 inches in size and has a plastic spiral binding. It is 186 pages in length and contains many illustrations. Price is \$9.50.

The book contains the ideas on golf course management and maintenance gained by Mr. Viergever during many years in the profession. Whether learning to manage a golf course, or already on one, the book is interesting and worthwhile. The publisher

PARATHION was the subject of controversy last year when two deaths and many illnesses in North Carolina were blamed on the chemical used to control aphids and flea beetles on flue cured tobacco. Florida growers of cigar wrapper tobacco, an earlier crop than the northern flue-cured tobacco and one on which six to 10 times more parathion is normally used, had reason for concern and welcomed studies by Florida's Dr. William Tappan, university researcher. He supervised checks of 45 tobacco workers over a 6-week period. Despite contact with parathion residues, no illnesses occurred though one worker did experience slight depression effects. Parathion is a very dangerous material, Tappan reports, and must be used with extreme care. Yet regular blood and urine sample indicated no problems where the chemical was used as recommended.

Barrows Is Named Consulting Arborist

At its recent meeting in Montreal, Canada, the American Society of Consulting Arborists voted Walter J. Barrows into active membership. The Society with members throughout the United States and Canada is composed of men who are recognized for their professional abilities in the care, treatment, and maintenance of trees in the landscape.

These men are particularly skillful in the technical aspects of arborist culture, tree appraisals, tree surveys, and the evaluations of the effects of trees in our environment.

Barrows, Ventura, California, has been employed by the Ventura County Parks Department as Landscape Coordinator for the past three years.

recommends it for classroom instruction. Tips given in this book are directed specifically toward the golf course business.

Segments of the book include superintendent responsibilities, training and administration of workmen, structure of the superintendents crew, educational needs, maintenance of property, communications, how to apply for the position, and even the duties of the superintendent as a citizen.

Available from Tomson Publications, P.O. Box 50160, Indianapolis, Ind. 46250.

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