



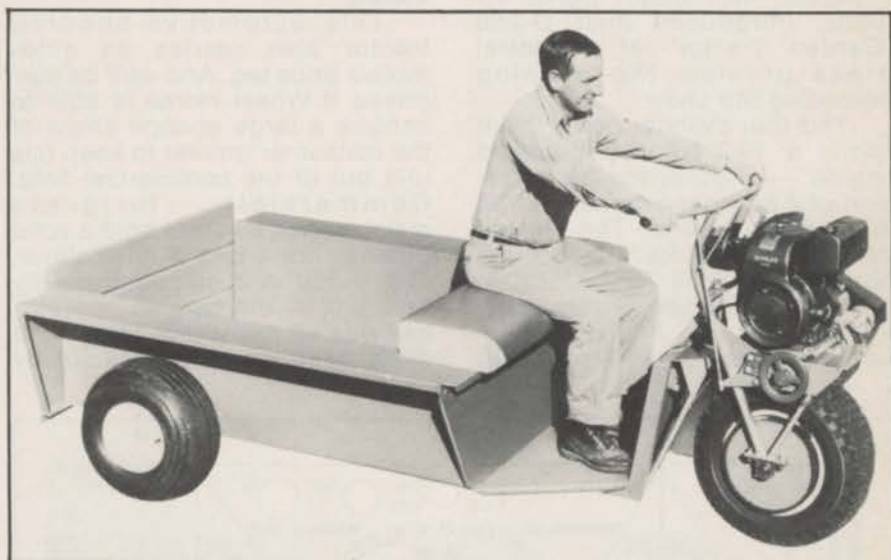
THE MELEX model 102 is an electric car weighing 670 pounds without batteries. It features an automatic seat brake, automotive steering and reverse warning buzzer.



ELECTRIC CADDY from Electric Carrier Corp. has a body made of zinc-grip coated steel and is powered by a traction motor, 36-volt DC.



LAHER's electric MG 470 has seats covered with Duraleather or Nauga-hyde. Floor and platform are covered with matching outdoor carpeting.



RED RIDER, from Smithco, is a work cart with a 56" deck. It is designed for hauling men and materials.



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The nitrogen that can be applied with the least danger of burning. No leaching either. Try it!

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New Products



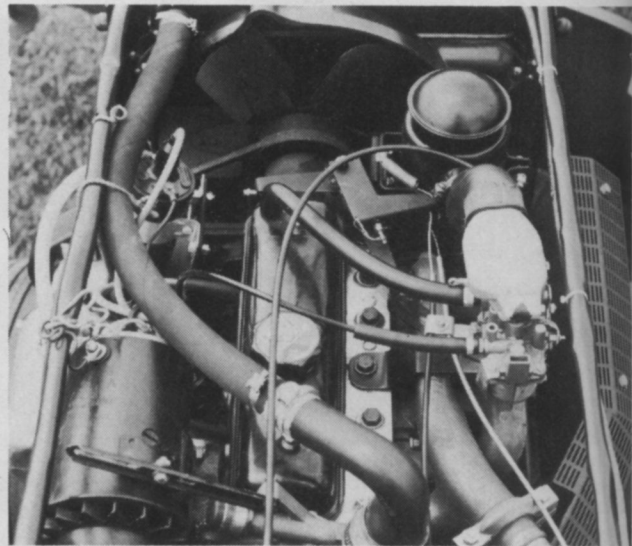
D-250 with 60 in. mid-mounted rotary mower.

One of the new products featured at the Las Vegas Garden Industry of America Show was a different approach to the under-20 HP tractor. Wheel Horse Products, Inc., South Bend, Indiana, introduced their D-250 "Garden Tractor" at a special press preview the evening preceding the show.

This four-cylinder power plant sports a 19.9 HP, liquid-cooled engine — a governed-back version of a European manufactured automotive engine. The engine was originally rated at 40 HP operating a 5000 RPMs. But in order to skirt new safety standards such as ROPS, Wheel Horse dropped the RPMs to 3000

and rated the engine a conservative 19.9 HP. The results, according to the manufacturer, will be longer engine life from less wear and lower operating temperatures.

This automotive-powered tractor also carries an automotive price tag. And we'll be surprised if Wheel Horse is able to capture a large enough share of the consumer market to keep this unit out of the commercial field. Commercial turfgrass maintenance markets hold a solid potential for a unit of this caliber. The D-250 is a compact, solidly built unit — the type an operator can ride all day without fatigue. It even features a hydraulically



Here's the four-cylinder liquid cooled engine.

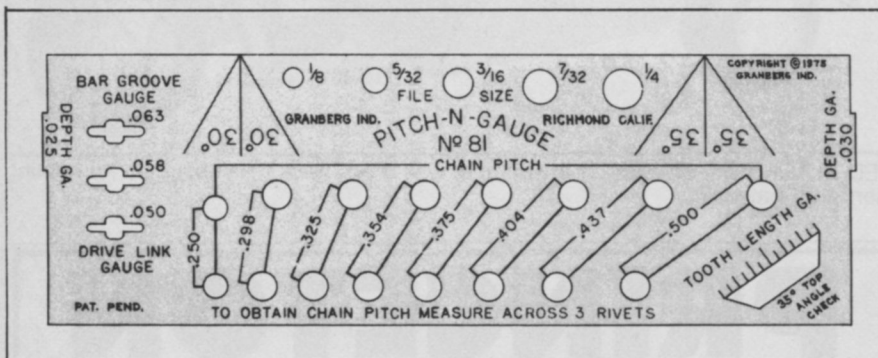
dampened, weight adjustable seat.

Other features of the German-crafted unit are triple PTO's, front, mid and rear, an automotive-type disc clutch coupled to a 10-speed transaxle, and twin headlights and taillights. A mid-mounted 60-inch rotary mower and soon-to-be-available commercial-grade snow thrower and tractor cab should make this versatile unit a natural for the industrial and commercial turf markets.

Circle 701 on free information card.

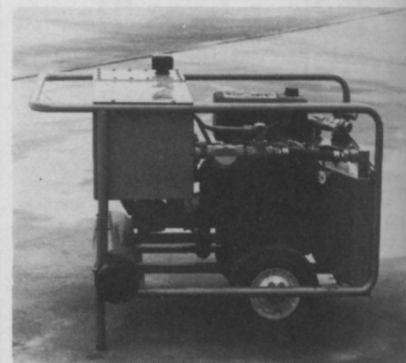
POWER PACK: A portable hydraulic power plant featuring an eight HP, one cylinder, four cycle, air cooled engine. Hydraulically powered pruners and chain saws, circular saws and other tools are easy for one man to handle, according to Causco Inc. The company suggests teaming the power/pack with Stanley Hydraulic Tools and not only keep trees and shrubs in better shape, but complete operations in half the normal time.

Circle 703 on the free information card.



CHECK TOOL: Granberg Industries says this tool measures all you could want to know about any saw chain. There are eight different measurement checks on a single handy tool. Bar groove gauge check, drive link gauge check, eight different chain pitch sizes from one-quarter in. to one-half in., and a tooth length check. There are two different filing angle checks; for 30 degree and 35 degree angles. And there are checks for five file sizes from one-eighth in. to one-quarter in. along with a depth gauge check. The check tool is produced in flexible laminated plastic making calibrations permanent.

Circle 702 on free information card.



WEEDS TREES and TURF



BIG JOHN: May Manufacturing Co. claims that this tree transplanter will move up to 10 in. trees with a 7,000 lb. root ball. The unit opens wide for wide-spread trees and shrubs. Blade travel is reported to be 63 in.

Circle 704 on free information card.



QUARTER HORSE: According to Promark Products Corp., this unit has a sturdy four cycle engine available in either 10 HP or 14 HP and a "Torque Sensitive" type of automatic transmission. It will pull mowers, sprayers, rollers and ball pickers; go up steep hills; carry sand, fertilizer and men.

Circle 705 on free information card.



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The economical organic nitrogen... when you look at your cost per pound of W.I.N. Try it.

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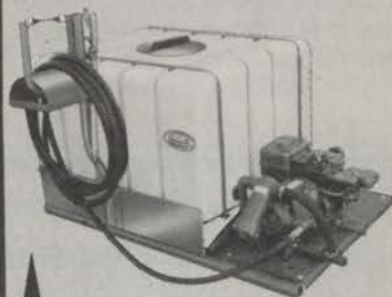


WINDER-UPPER: Pac-Craft Products says their E-Z Roller hose winder-upper has a power train capable of exerting 800 lbs. of pulling strength. The unit can be trailer mounted or truck mounted.

Circle 706 on free information card.



TURF & INDUSTRIAL SPRAYERS



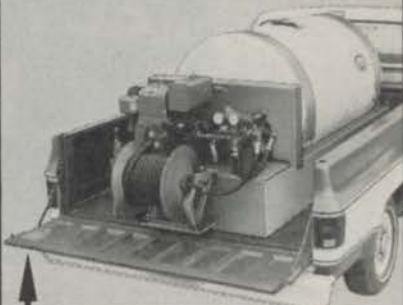
2000 Series Commercial Sprayer

A new compact design with 50 or 100 gal. rectangular polyethylene tank to save space, resist rust. Choose from high or low pressure systems for orchard, turf or pest control.



1950 Series All Purpose Sprayer

The versatile favorite offered in 100, 150 and 200 gal. tank sizes and four job-rated pump systems; features smooth mechanical agitation plus a full line of trailers and accessories.



960 Series Professional Sprayer

High performance equipment to deliver up to 25 GPM at 600 PSI. 200, 300 or 400 gal. capacity with dual stage centrifugal or piston pump systems, trailers and other equipment variations.

THE BROYHILL COMPANY
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GUEST EDITORIAL (from page 28)

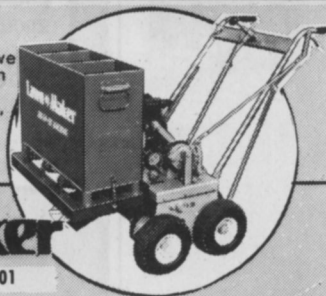
you say, "Price and cost are the same!" Sorry, but that statement could not be farther from the truth. Price and cost are NOT the same.

Price is the dollar amount for which a piece of equipment can be purchased. It is only a small part of the cost. Before we get confused, the cost we are now talking about is not the producers cost or the sellers cost but rather the purchasers' cost. It is the **TOTAL EXPENSE OF OWNING, OPERATING AND MAINTAIN-**

THIS POWER MACHINE AERATES AND PRECISION-DISPENSES THREE TURF MATERIALS SIMULTANEOUSLY.

seed, fertilizer, controls, etc.

If you service lawns, or plan to, we have a complete "automated lawn service" management, training and marketing program available, free with your **LAWN MAKER** combine. This machine is also excellent for Greens.



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ING A PIECE OF EQUIPMENT OVER THE TOTAL PERIOD OF ITS SERVICEABLE LIFE. It should always be expressed as cost per unit of work done. In the case of a mower, total cost is:

1. Price, plus
2. Cost of fuel, plus
3. Cost of operator, plus
4. Cost of repair parts, plus
5. Cost of labor to repair, plus
6. Cost of insurance, plus
7. Cost of interest on investment.

Add these, subtract the resale value at the end of the service life and equate the nest against lifetime productivity. In other words, what will be your total cost — "Dollar per acre mown"?

When dealing with productivity, one must consider: **RELIABILITY** — How much production and operator time will be lost through breakdowns? If it is too much it might become necessary to purchase additional mowers and hire more operators. Now watch your costs soar!

VERSATILITY — Is the mower restricted in its performance capabilities or can it be used on several different applications? Can it mow fine lawn areas? Shred high grass and weeds? Mulch leaves? Renovate — thin, dethatch or scalp turf? Can it mow in rough trashy areas as well as in clean smooth areas? Can it go out and mow in all conditions, wet or dry, or will production time be lost waiting for the dew to evaporate? Is it relatively safe to use when people are around or should the area be cleared first?

CAPACITY — or mowing rate, acres/hour. The Mott Interstater, for instance, carrying (3) cutter units and cutting practically a 19 foot swath has the capacity of (3) single mower units on (3) tractors with (3) operators. Saving — (2) tractors and (2) operators! Higher priced wide swath mowing equipment can and will, where practical to use, pay for itself in cost saving many times over.

DURABILITY — Will the mower be worn out in 5 to 7 years or will it have a serviceable life of 10, 15 or even 20 years? Longevity not only has a great impact on total lifetime productivity but also a direct impact on capital cost. Take for example a \$700 mower with a 7 year life expectancy versus a \$1000 mower with a 15 year life expectancy. For \$300 more (almost a 50% higher bid price) an extra 8 years of service life can be purchased — at a capital cost of less than \$40 per year for the last 8 years!

John Ruskin said it, "There is hardly anything in the world that some man cannot make a little worse and sell a little cheaper, and the people who consider price only are this man's lawful prey".

Lawful perhaps, but not necessarily to the taxpayers or shareholders best interest. □

Perform a death-defying act. Exercise regularly.

Give Heart Fund
American Heart Association



PUMP: Stanley Hydraulic Tools introduces this lightweight sump pump, six in. in diameter. The self-priming pump is 16 in. high, weighs 20 lbs., and is capable of delivering more than 300 gpm with a 10 ft. head, according to the manufacturer.

Circle 707 on free information card.



DUMP BED: Topeka Metal Specialties claims this "Strong Boy" hydraulic dump bed can hoist three tons and haul 52 bushels (65 cu. ft.). Optional side boards increase capacity to 87 bushels. This reinforced unit weighs 700 lbs. The unit features a twin cylinder hydraulic lift, 14 gauge steel body, and double-hinged tail gate. It comes equipped with 9 x 12 in. sliding gate and spreader chains.

Circle 708 on free information card.

PENETRANT: This specialized liquid formulation hastens the downward movement of water, promotes passage of water through thatch, heavily compacted soil, and subsurface layers. Motomco, Inc., product manufacturer, claims that the increased water penetration aids the decomposition of thatch by encouraging microbiological activity which reduces the need for mechanical aerification. According to the manufacturer, it also improves root absorption of systemics by carrying solutions down to the roots faster.

Circle 709 on free information card.



WHOLE TREE CHIPPER: Strong Manufacturing Co., says this unit will take full length trees up to 17 in. in diameter and reduce them to uniform chips. The chipper is 21 ft. long, 8 ft. wide and weighs 15,600 lbs. Powered by a small diesel engine, it can produce approx. 25 tons of chips per hour.

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and Golf
bags it!

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LONG-LASTING FERTILIZER
38% NITROGEN
DESIGNED FOR THE HOMEOWNER
GRANULAR BLUE CHIP
FOR DRY APPLICATION
ONE YEAR - FERTILIZING - RESILIENT
NET WEIGHT 35 LBS.

NITROFORM*

organic nitrogen

The odorless, dust-free, pathogen-free organic nitrogen. Applying Nitroform doesn't interfere with normal use of turf areas.

STH 74-20R



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Remember the name because you're going to hear a lot about it. 0217® Brand Fylking Kentucky bluegrass lawn is something special. It forms a dense, thick turf, more disease and drought resistant. Greens up earlier, stays greener longer. Fylking can be cut low as 3/4 inch, even 1/2 inch for home putting greens. Proven over many years of international certified testing. Ask your seed distributor for Fylking.



FYLKING U.S. Plant Patent 2887
KENTUCKY BLUEGRASS
 Fylking selected as the World's Fair official grass.

Another fine product of Jacklin Seed Company

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People on the Move

Thomas E. Martin, named business manager for Wisconsin and Minnesota area by the Outdoor Power Equipment Division, J I Case Co. **Ken W. Gangwer**, former marketing manager of Davis, an operating division of J I Case, is returning to Davis as general manager of marketing.

* * *

Richard G. Phillips, named manager field sales of the Kohler Co. **Michael W. Littell** appointed area manager reporting to Phillips. Kohler also expanded the market planning staff in its Engine Div. and appointed **Douglas G. S. Cook** to head the staff as manager — market planning. Three companion assignments were also named to the marketing staff — **John T. McCarrier** and **Linda J. Sprecher** as market analysts and **D. Allan Eisentraut** as coordinator — customer services.

* * *

Victor M. Cushing, appointed vice president, marketing for the Jacobsen Manufacturing Co. Prior to joining the Racine-based firm, Cushing had served as manager, food preparation products, Housewares Division of General Electric.

* * *

Dr. John P. Slesman fills the field research representative position in Ohio and Michigan for the Chemagro Co. Slesman succeeds **Dr. Robert A. Fisher**, who is retiring.

* * *

Thomas J. Wallisch, named manager of marketing research and forecasting for the Toro Co. Wallisch comes to the Toro Co. from the Gates Rubber Co., where he was marketing and research manager for the past two years.

* * *

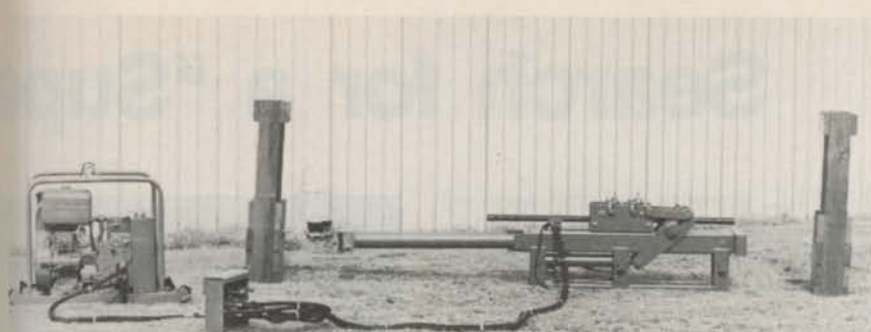
William M. Fluegel, transferred within Elanco Products Co. to manager, market planning responsible for Treflan.

* * *

Joseph F. Ragusa, promoted to branch manager of the Thompson-Hayward distribution center in St. Gabriel, Louisiana. **Beverly Bankston**, also promoted to export manager. In other company moves, **Dr. Robert H. Sparnicht**, named assistant director, field research and development.

* * *

Alfred J. Restaino, named director of corporate research and **Paul Becher**, director of specialty chemicals research for ICI United States, Inc. **Girard T. Smith**, also appointed vice president for administration. Smith will be responsible for the company's administrative services, distribution services, management information services and purchasing and resale departments. ICI also named **Erling D. Schmidt** and **David W. Ryerson** managers of the project team responsible for building and opening the company's new \$70 million paraquat herbicide plant at Bayport, Tex.



PUSHER: Ditch Witch introduces this new soil compression type horizontal tunneling machine with a companion portable hydraulic power unit — the 312 Pusher and Power Pac 12. Ditch Witch claims the Pusher is capable of forming tunnels from 3-12 in. in diameter under roadways and other obstructions where trenching or plowing cannot be done. Its double acting drive rod cylinders provide up to 35,000 lbs. of rod force at its recommended operating pressure of 2,000 psi. When used with the optional Power Pac hydraulic power unit, it does not tie up other expensive hydraulic sources. Power Pac 12 utilizes a 12 HP air-cooled gasoline industrial engine to provide hydraulic power up to 2,000 psi for use with the Pusher or a variety of other hydraulic tools. It is housed in a compact, sturdy steel tube frame on skid mounts for ease of transport. Hydraulic connectors are "quick coupler" type for ease and speed in set-up or dismantling.

Circle 711 on free information card.

IRRIGATION HOSE: Acme-Hamilton Manufacturing Corp., designed the Heliflex L for drip-type application. It is light in weight and rated for moderate pressures, according to the manufacturer. It is available in standard 300 ft. lengths and in sizes up to 6 in. ID. Black Crown hose is designed for use as a flexible supply for travelling irrigation systems. It is black, longitudinally ribbed PVC blended hose reinforced with high tensile polyester yarns. Manufacturer says the reinforcement gives the hose extraordinary end pull strength that allows it to be dragged constantly while under pressure and full of water. Black Crown is rated at 150 psi.

Circle 712 on free information card.



Bandini bags it!
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organic nitrogen



The economical nitrogen that feeds for months because it has different release rates like time-release cold capsules.

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TRACTOR: A new 40 HP Model 5040 manufactured by Allis-Chalmers Corp. is designed as an economical tractor with enough power and versatility to perform the toughest field job successfully. A dual range transmission is standard.

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**Heals
wounds;
prevents
decay**

Cabot's Tree Healing Paint is a carefully prepared bituminous paint for protecting live wood and preventing decay. Leading arborists and foresters have been using it for almost half a century. Here are the reasons why:

- ideal for trees, shrubbery, etc.; seals, heals wounds, cuts, broken limbs, pruning abrasions.
- stimulates growth of new bark
- apply with brush or spray; produces a black, tough, elastic, quick-drying coating.
- excludes moisture; stops rot; prevents evaporation of sap
- may be used in any season

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Ship _____ pints (12 per case) @ 95c each

Ship _____ gallons (4 per case) @ \$5.40

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Pruner's Applicator Jar (4 oz. jar)

Ship _____ cases (24 Applicator Jars per case) @ \$22.80 per case

Aerosol Spray Container (5 oz. can)

Ship _____ cases (12 Aerosol Containers per case) @ \$22.80 per case

Prices f.o.b. Boston less normal trade discounts.

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Search for a "Super"

IF ALL GOES WELL, growers and managers of turf and ornamental plantings soon will have a highly effective new weapon for use against the troublesome and costly soil-borne diseases — cottony blight, damping off and the root rots and stem rots caused by *Pythium* and *Phytophthora*.

By late 1975, Dow Chemical Company hopes to have its new systemic fungicide Nurelle (common name is "pyroxychlor") registered for use on ornamental crops in greenhouses, outdoor nurseries, and in landscape ornamental plantings. Registration for use on turf is anticipated in 1976. And registration for foliar applications may come in 1976 or shortly after.

In dozens of tests, Nurelle consistently has outperformed currently available fungicides being used to combat *Pythium* and *Phytophthora* (the water molds) on such crops as turfgrass, ornamental foliage plants, bedding plants, azaleas, and rhododendrons.

In addition to being more effective against the water molds than any currently available fungicide, or any other experimental compound now being tested, the product has these additional advantages:

1. Used as a foliage spray, it is translocated downward to the roots of plants, instead of upward like most systemic compounds.

2. In proper concentrations, applied correctly, it gives long-lasting control of *Pythium* and *Phytophthora*, eliminating the need for continuous treatments at short intervals.

3. Used correctly, it is nonphytotoxic to plants.

Dr. Herbert Cole, plant pathologist at Penn State University, has been working with Nurelle for two years now for the control of *Pythium* blight on golf course grasses. He has been investigating different dosages, the need for drenching or watering in the chemical, the effect of soil type on disease control and other application techniques.

"Nurelle's unique benefit on golf course grasses is its long-lasting effect," says Cole. "Instead of giving *Pythium* blight control for three to four days like the standard chemicals now available, Nurelle controls the disease for three to four weeks." *Pythium* blight, also known as grease spot or cottony blight, varies in degree from a curiosity to a serious pest. It's worse in hot, humid weather. "When you've got it, you've really got it," Cole adds. Research results so far indicate that for best *Pythium* blight control on golf course grasses, the fungicide should be watered in thoroughly after application.

Many researchers currently are working with the product for the control of *Pythium* and *Phytophthora* on ornamentals. Dr. Harry Hoitink, Department of Plant Pathology, Ohio State University, has been experimenting with the chemical since 1972.

*In many tests, the fungicide has been highly effective both as a drench and as a foliar spray. Close-up views show *Phytophthora* and *Pythium* symptoms on dieffenbachia and ivy.*



fungicide



"We've used Nurelle as a drench to control Phytophthora on azaleas and rhododendrons," says Hoitink. "It also works as a foliar spray against Phytophthora on rhododendrons, azaleas, and pieris — three of the most Phytophthora-susceptible plants known to man.

We're now looking at how Nurelle is translocated through the plant to the roots," Hoitink adds. "We can detect the compound in the roots five days after application as a foliar spray and we can still detect it in the roots a month after application.

"A second foliar spray about a month after the first application increases the concentration in the roots. We're working on chemical concentrations that give good disease control. Sprays of 600 parts per million are helpful, but sprays of 1,200 parts per million are completely effective when applied more than once."

At Apopka, Florida, the "Foliage Plant Capital Of The World," Dr. Jim Knauss, associate professor of plant pathology, has done extensive testing with Nurelle

on many species of foliage plants. "As a group, Phytophthora and Pythium molds are probably the worst disease problems of the ornamental plant industry," Knauss explains. "We already had our disease-control tests underway when we learned about Nurelle. Since then, we have tested the compound extensively both as a drench and as a foliar spray. It has been more effective than any presently available fungicide or any other experimental compound we've tested.

"One of the problems in the beginning was that researchers didn't know how to properly test Nurelle," Knauss believes. "The chemical should be tested on plants in realistic situations at adequate concentrations — not on artificially damaged plants inoculated with unrealistically high levels of disease."

Knauss' work indicates that certain criteria are important for good results with the chemical applications:

1. When the fungicide is used as a drench, foliage plants should be in an active state of growth so they will absorb enough of the chemical.
2. When it is used as a foliar spray, plants also must have actively growing leaves. Foliage sprays should contain about three times as much chemical as drenches. The faster the plants are growing, the more chemical is necessary for good disease control.

Knauss says you can't spray the foliage of plants with Nurelle and then take cuttings and expect to get disease control in the new plants that grow from the cuttings. The product moves out of the leaves and to the roots too fast. He's experimenting now, though, with ways that the chemical might be held in the leaves longer. For instance, he thinks a drench might be used to saturate the roots, followed by a foliar spray. He has used the product this way to control the foliar form of Phytophthora in petunias.

In Knauss' tests, the product has rarely been exceeded in performance. It has given excellent control of Phytophthora without phytotoxicity in repeated tests on dieffen-

bachia, peperomia, petunia, and Christmas cactus and against Pythium on Christmas cactus. Knauss is now experimenting with combination treatments of Nurelle and other disease control compounds.

Growers of foliage plants in the Apopka area have watched Knauss' work and have cooperated in many instances. They are anxious to have the product approved for use in their commercial operations. Herman Englemann, owner of Englemann's Nursery, Apopka, is a good example. "I have seen dieffenbachia plants treated with Nurelle grow well in fully disease infested soil," Englemann says. "We used it on ivy and it was just fantastic. The minute we can use the product commercially, we'll use it on everything as a preventive.

"I'll use the chemical first as a drench," Englemann says. "It should be most effective this way. Then later on we'll probably also use it as a foliar spray. I hope we can mix it with other chemicals, too."

Will Webb, production manager for Johns, Inc., Apopka, is also excited about the fungicide. "We like the potential for using it as a foliar spray," Webb explains. "Foliar sprays would be much cheaper, quicker, and simpler. We would use the chemical as a preventive on all plants that are susceptible to Pythium and Phytophthora."

Dow hopes Nurelle also will prove effective against diseases of many other plants. Research is currently underway with such additional crops as blueberries and Christmas trees, both of which suffer severely at times from root rot diseases.

John Lillich, product manager for Dow, says that if all goes well, the company plans to first launch Nurelle in a limited way in Florida and California. "We're set up to manufacture only a modest amount of the chemical with present facilities," Lillich says, "so supplies will be very limited until about mid-1976." Dow is building a new facility to produce pyroxychlor, however, and should have increased supplies by late 1976. □



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organic nitrogen



The long-lasting, slow-release organic nitrogen that keeps feeding turf for months. Try it.

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