

# WEEDS TREES & TURF

ONE DOLLAR • SEPTEMBER 1976

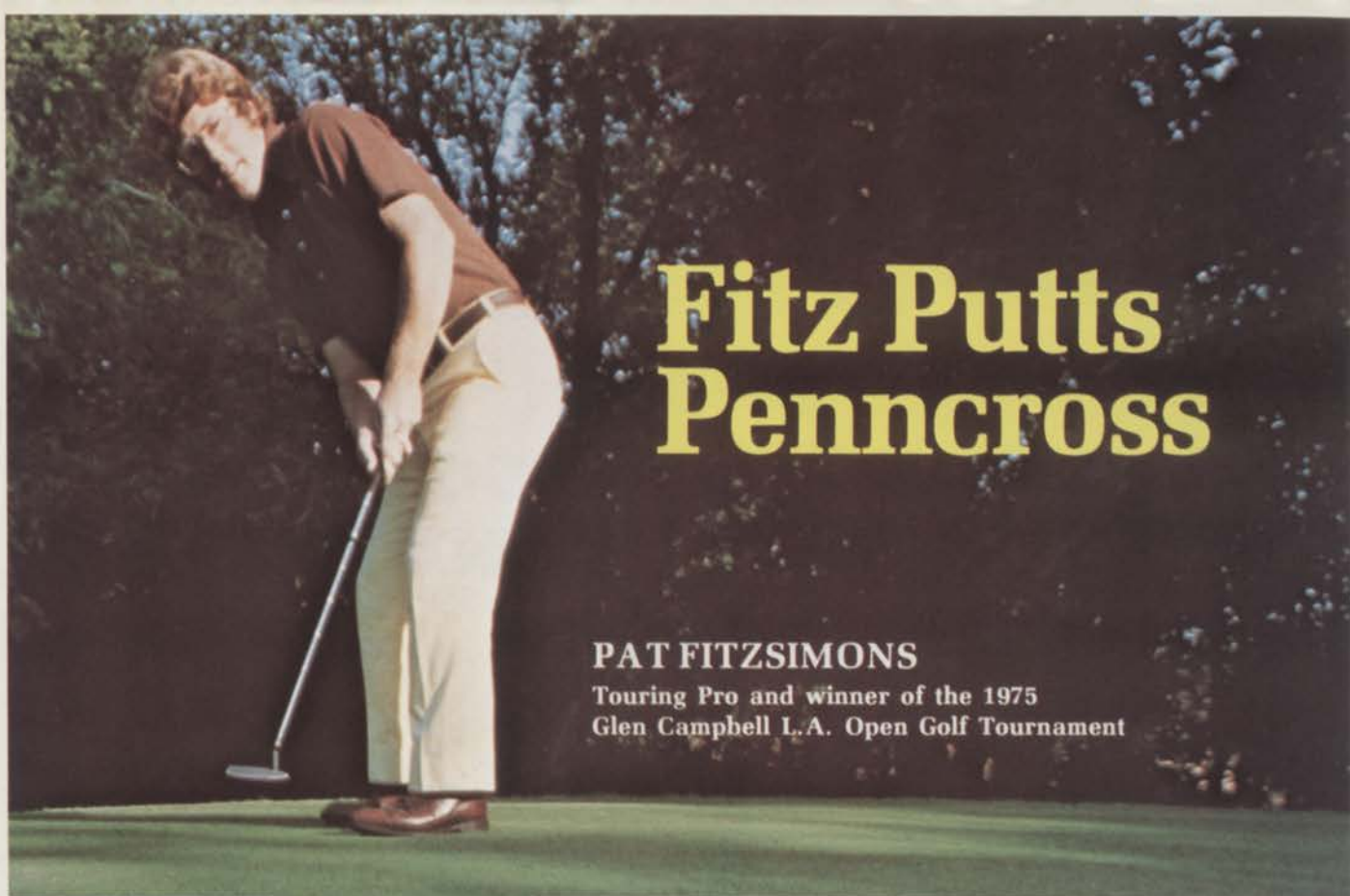
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# WEEDS TREES & TURF®

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# New girl on the block

Meet Gail Hogan, your new editor for WEEDS TREES & TURF.

A native of Marblehead, Massachusetts, Gail was graduated from the University of Massachusetts with a BA in journalism and has done graduate work at Cleveland State University.

She has held numerous positions in advertising and public relations and has worked as a reporter for three Cleveland area newspapers. Most recently she was editor for Chessie System, Inc., Cleveland.

New to the green industries, Gail believes her biggest asset will be you, the readers. "I want to know what interests our readers, what they want covered and what they need to know to keep abreast of their exciting and innovative industries. With their help, WEEDS TREES & TURF will continue to be a viable and necessary information source."

Gail also plans more features about people. "People are the industry," she says. "They are what it's all about." She hopes to meet many readers as she travels throughout the country gathering material for WEEDS TREES & TURF.

Gail lives in North Ridgeville, Ohio, with her husband, Mike, and two children, Sean, 18 months, and Jennifer, nine.



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Weidenfeller, who's sales manager of Agricultural Services, Inc., in Minneapolis, points out that for spraying open areas such as parking lots, storage areas, sub-stations and the like, a different type of boom is needed. A hand or orchard-type sprayer is great for spot treatment. In areas filled with obstructions, OC or flood tips fill the bill.

However, Weidenfeller discovered that a boom for open areas, one that would treat large areas accurately and efficiently without leaving untreated strips and misses, and one man could handle with ease day after day, just wasn't available.

So, he set about designing his own. He came up with what he calls the "T type boom", a rig that applies a 6-foot wide spray strip at a rate of about 50 gallons per acre.

His T type boom is equipped with a quick-coupler, a good shut-off (a 31 gun jet), and is fabricated from 3/4-inch aluminum piping.

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# Government News

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EPA Administrator Russell E. Train has notified 4,100 pesticide producers, formulators, distributors and registrants that EPA will soon be initiating an auditing program to examine selected toxicity test reports. He said it was the industry's responsibility to insure that all data submitted in support of registration are complete, accurate and valid.

The federal quarantine for imported fire ant has been amended to extend regulated areas in parts of Alabama, Arkansas, Georgia, Mississippi, North Carolina, South Carolina, and Texas. James O. Lee, deputy administrator of the USDA's Animal and Plant Health Inspection Service, APHIS, said this action was necessary because the imported fire ant has spread to new areas in the seven states. Pest-risk articles---such as soil and used soil-moving equipment---must be inspected, treated if necessary, and certified free of pests by APHIS or state agricultural inspectors. The amendment puts movement restrictions for the first time on all or part of the following counties: Colbert and Lauderdale, Ala.; Calhoun and Miller, Ark.; Barrow, Burke, Clarke, Forsyth, Greene, and McDuffie, Ga.; Lenoir, N. C.; McCormick and Newberry, S.C.; Bee, Bell, Blanco, Bowie, Camp, Falls, Freestone, Gillespie, Jim Wells, Milam and Refugio, Tex.

Scientists at the Georgia Institute of Technology will study solar heat collectors and storage systems under a cooperative agreement with the USDA. Under the agreement terms, the Georgia scientists will have one year and \$39,499 to design, build and evaluate several solar collector and storage systems using a rock-bed system to store heat for use in heating greenhouses, farm buildings or rural residences. USDA's Agricultural Research Service will sponsor the study with funds from the Energy Research and Development Administration.

EPA has asked for ideas and comments from the public on ways to address the problem posed by contamination of drinking water supplies by organic chemicals. In an Advance Notice of Proposed Rulemaking, EPA says interested people should submit written data, views or arguments to the Agency's Office of Water Supply (WH-550), Criteria and Standards Division, 401 M. Street, SW., Washington, D. C. 20460.

Scientists at Washington State University's Irrigated Agriculture Research and Extension Center, Prosser, will seek controls for the black vine weevil, a serious grape pest, under a cooperative agreement with the U. S. Department of Agriculture. USDA's Agriculture Research Service (ARS) will provide \$5,000 for the 18-month study. The scientists plan to evaluate the effectiveness of carbofuran on the weevils. Several treatments using various strengths of carbofuran will be tested. Samples of treated grapes, juice and pomace will be taken for later evaluation for residues and the effects of flavor. Dr. W. W. Cone, an entomologist at the university, is the principal investigator and Billy A. Butt, ARS entomologist, Yakima, Wash., will represent ARS.



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# **WATER: COLORADO'S SHRINKING COMMODITY**

## **Demands grow, costs soar and availability dwindles**

by eloise ross

"In this country, water is it," explains Dr. J. D. Butler, a full professor of horticulture at Colorado State University (CSU), Ft. Collins. "We talk about water first out here. If you don't have it, you don't have anything. If you don't have the water, you don't do it."

This precious commodity of the semi-arid red stone state has always been a highly volatile and serious issue. Never at a premium in Colorado's history, Dr. Butler says, "In all those movies of the West, you saw men fighting over horses but they were really fighting over water." And the fight continues today.

Colorado's scenic wonder and temperate climate have lured many new people who create a heightening demand upon its water supply. As competition increases for water for food, irrigation, lawns, personal and home uses, new provisions and tactics appear critical.

Currently, almost 42 percent of Denver's municipal and industrial supply enriches the lawns of city residents, according to a 1972 study by Woodward and Dr. Butler says costs for maintaining an 18-hole golf course with water runs between \$30,000 to \$40,000 a year.

The irony is that homeowners who demand lush carpets of lawn are the same people who are creating a water shortage that will make the cost of water prohibitive for turf.

It is not likely that irrigation will change much as a means to replenish agriculture and shrinking turf and croplands except for some grass adaptation but priorities may be necessary for proper use of water.

According to Donald L. Miles, extension irrigation engineer for CSU, agriculture, Colorado's largest industry, has shrunk from a 1970 all time high acreage of 3,380,000 acres to the present 3,100,000 acres. The loss is primarily to subdivision development.

With an increasing flow of new residents, Denver and eastern Colorado are handling greater demands upon water tracts set aside as many as 100 years ago. Denver now imports water from the western slope but has tapped nearly all its available sources. There are no water districts in the state and metering is done in only a few areas.

Individuals and sodfarmers can get water rights, the rights to use one acre flood a year or roughly 327,000 gallons of water. While giving the person the right to use water, water rights don't provide water. That is negotiated through other channels.

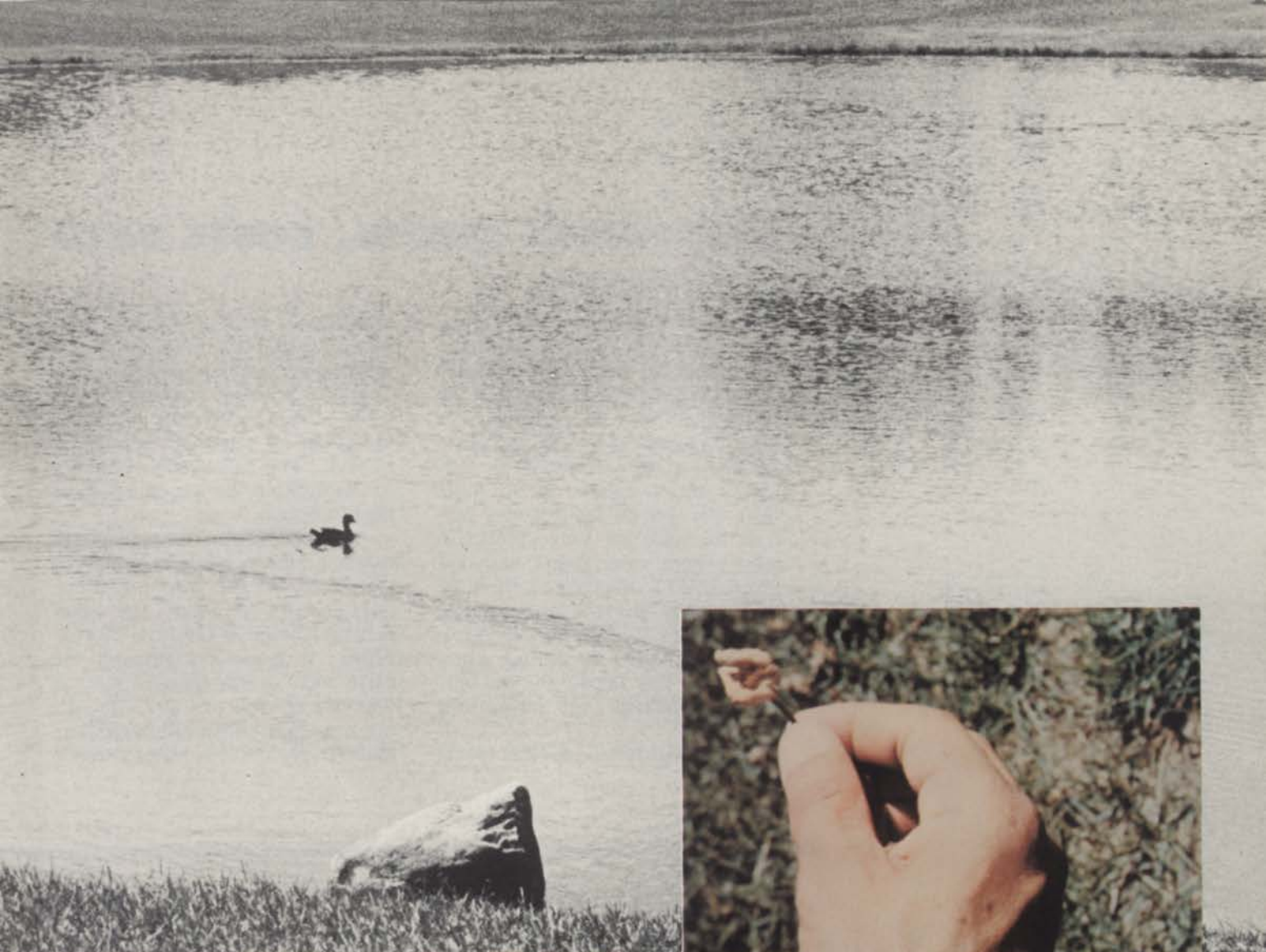
The individual's water right is owned by the city which levies rates as it is charged.

Prices for water rights may vary from \$2500 in Denver, \$600 to \$2500 on the eastern sector to a very low price in the water rich western territory, Miles says. Denver homeowners may pay up to \$10,000 a month for treated water while sodfarmers are charged alike and have a percentage of the cost of water. "It's mostly a matter of who can pay the most," Miles notes. "People pay more to have a little green around them than agriculture thinks it's worth."

Continued on page 14







*Above—This fairy ring fungus offers a challenge to Colorado turf farmers and developers of drought-resistant grasses. Fungi such as this drain precious water from the turf.*

*Left—Experimental Kentucky bluegrasses may provide much needed drought-resistant strains.*





# **Demands grow, costs soar**

Continued from page 12

Some landowners draw water from wells and have faced more restrictions for this practice. In 1965 small domestic wells were granted an exemption from registration if they pumped up to 50 gallons a minute for use in domestic, livestock and irrigation on no more than one acre of land. Today permits for wells are only granted in areas where water hasn't been appropriated for mass use or where the wells don't interfere with existing water rights. It is nearly impossible to get permission for drilling a new well today and some wells can only serve domestic, not irrigation, needs.

Such legislation reaches some

segments of the problem but leaves others uncharted. Miles points to unorthodox housing construction as a major problem. "Many of the areas where subdivisions are placed are going on extremely salty soil," he says. "This as much as anything I see as limiting the use of water for lawn purposes."

Lawn irrigation in such places brightens lawns while burning out the water. "If the grass uses three quarters of the water, the other quarter contains all the salt," he explains. It percolates through the earth and "is four times as salty as that (water) you put on." De-salting is an alternative although costs make it prohibitive, Miles stresses.

---

## **Less thirsty grasses hold possible solution**

If and when Colorado sodgrowers line up for tank rationing of water for their crops, turf management studies at Colorado State University (CSU) in Ft. Collins may provide knowledge to ease the situation.

It is hoped these studies will supply grasses that can live with lower quality of water of effluent, run off wells or even brackish colored water.

As part of the PERC (Plant Environmental Research Center) of the Department of Horticulture at CSU, two open plots resembling football fields are the carefully controlled carpet homes of experimental Kentucky bluegrasses. Some 30 varieties grow there in striped patterned sections measuring 10 feet by 10 feet each.

Now in the second year, the turf plots support Adelphi, Nugget, Merion, Code 95, Arboretum, Chem blue, fescues, perennial ryegrasses, Prado, Park and Windsor grasses, among others.

Dr. J. D. Butler, a full professor of horticulture at CSU, is applying both anatomical and physiological research in the Kentucky bluegrass studies and is borrowing his results from his ongoing altitude studies. He also is experimenting with turfgrass from the western slope and plains of Colorado.

Many factors were judged before choosing the grasses to reflect both the soil of the plot areas and Colorado's soil problems. Types of soils and grasses were major points.

In considering these turfgrasses, Dr. Butler stressed that uniform, good soil is difficult to find in Colorado due to disturbances caused by construction and use of low quality land. Colorado soils often differ in water storage and availability. Poorer quality soils often show a very slow rate of infiltration while



The question is whether building should be permitted on such land and if lawn irrigation should be cut back, if not outlawed, there. Colorado's natural salts are only compounded as a problem because of such practices.

As a step in the right direction, subdividing is now illegal on parcels smaller than 32 acres unless water and sewage services are already available from the outside.

Other alternatives are allowing lawn irrigation only on alternate days for houses having even or odd street numbers. Some cities are using re-used agricultural water. There even is a greater likelihood that dual water systems may spring up in

cities with pipes transporting high quality water into the house for tubs, showers, wash basins and the kitchen sink. A second pipe would bring in reclaimed sewage water for flushing toilets, cars and lawn irrigation. The reclaimed water would be biologically pure but would have a rather high concentration of dissolved salts, Miles speculates.

Miles also views more responsible use of landscaping in housing and population limits and distribution in Colorado as a means to better control for using water.

At present, however, re-developing turfgrasses and re-educating the population seem the most workable alternatives. Fancier and more effi-

cient equipment won't help. There are no plans for allocation of water but Dr. Butler believes economics may well dictate higher priorities of water to food production, slurry transportation of coal and practices such as oil shale processing.

The issue of water is very political, though vital. Legislators shy away from it since an appointment to the Executive Committee of the Joint Water Committee is often followed by their ouster by voters in the next election. Since Colorado's legislature provides the governor the option of delegating topics for the even numbered years, it is not likely that the water issue will appear in 1976. Even though, "water is it," perhaps too much it.

turfgrasses having good root systems add to the best rate of water stored in the lower soil levels.

Where drought is critical, the types of grasses are important. Only a few grasses are able to grow where heavy droughts are severe or where it is impractical or impossible to irrigate. But these are often low quality turfgrasses and may not stay drought tolerant without some irrigation beyond average rainfall. A turfgrass' uses may also be limited by the amount of traffic it can endure.

While drier areas prize a grass' ability to remain alive during drought above its ability to stay green into dry periods, less arid regions place more value upon the grass that stays green into dry periods. In studying the grasses, criteria of the grass' tendencies to stay green into drought, and if its foliage dessicates, dies or returns to normal growth with enough rainfall are evaluated.

Colorado does have hearty native turfgrasses such as grama and buffalograss but these are judged

undesirable because they turn brown and don't give good ground cover. The new Kentucky bluegrasses should provide good cover, color and drought resistance.

The CSU bluegrasses were also chosen for their tolerance of eight to 15 inches of rainfall a year (15 inches being a normal year), how well they stayed green in dry times, if they formed a thick turf, and their texture and overall performance, qualities Dr. Butler and his research team of Peter Dernoeden and Mohammed Ali Harivandi have continued into the program.

Research by Dernoeden showed common bluegrasses are the most drought resistant and that these tolerant cultivars grow fairly quickly. Drought tolerance also figured into stomata size and location and the length of bulliform cells.

Other studies Dernoeden conducted note that mowing can affect drought tolerance. Since more water tends to be applied as if in compensation for low mowing, any good features of turfgrasses are can-

celled. Half of the CSU plots at the horticulture center are trimmed to three quarters of an inch while the rest are cut to one and one-half inch.

In handling the project, the researchers also experiment with the thatch and soil fertility. Thatch is important since it may drive water into useless runoff. The new varieties should help prevent this if they have deep roots.

Although Colorado isn't alone in its water problem since Arizona and California also contend with similar situations, the state does have special problems due to its altitude, cooler nights, light intensity, soil salts and high alkaline content. The effects of soil salts and salty water are now being researched by Harivandi at two Denver golf courses in another project which will affect future Colorado turfgrasses.

Although no specific target date is set for the study, when it ends original grasses, not hybrids or mutations will probably go into commercial production. Production is expected by 1981.



# Where have all the flowers gone?

Some flowering plants may be headed for the fate of the passenger pigeon: extinction. The cause, say biologists at Notre Dame, is Man's alteration of his environment.



A recent study by scientists at Notre Dame University suggests that certain flowering plants may become casualties of "progress."

"More and more flowering plants are falling into the categories of threatened and endangered," said Professor Theodore J. Crovello, chairman of Notre Dame's Department of Biology. "Threatened" is a less severe classification than "endangered."

"As Man moves into new areas and alters the environment, by draining areas for farming, for example, flowers decline and disappear. Orchids that grew in Indiana not many years ago are gone."

The conclusion that certain flowers are disappearing is based on a three-year study that used an IBM computer to analyze 35,000 botanical specimens collected in North America over the last 180 years. The specimens were from collections at 75 museums and universities across the country.

"Our study is helping determine the status of certain plants," said Dr. Crovello. "Research, for example, indicates that relatives of the

mustard are disappearing. On the other hand, we might find that a species thought to be extinct or disappearing had been mislabeled in some collections; or hadn't been collected for some years; or exists in only a few collections, but is still thriving in the wild."

The Notre Dame researchers have supplied endangered species information to scientists in Ohio studying plants of the mustard family there. Preliminary research indicates that while some plant species in Ohio are threatened and endangered, others can be removed from the list. Analysis of certain "spring flora" such as various types of spring watercress shows some are disappearing while others are plentiful. Another part of the study, the Flora Indiana Project (FLIP), is focuses on the 2,500 different species of flowers found in Indiana.

The biologists built their files of information by entering names of plants, when and where found, environmental conditions at time of collection, and other information. The IBM System/370 Model 158 produces reports by states and coun-

ties showing numbers of plants gathered by century and decade since 1800.

"As you look back into history, collectors' records become sketchy," said Dr. Crovello. "A botanist might simply have noted 'picked up by the Missouri River' or 'collected in Indiana territory' and just recorded the year. Today, researchers provide more accurate records, sometimes even the street address. Still, we see plants shrinking in geographic distribution over time — the indication of an endangered species."

"This is more than just an aesthetic loss: Man benefits significantly from certain plant species, particularly those that supply important medicines. Yet most plants have not even begun to be analyzed for products useful to people. Who knows what potentially valuable chemicals we are losing with every species that becomes extinct."

"Urbanization and other activities of Man can irrevocably alter the environment, and this forces us to set priorities."





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## Protect irreplaceable trees from lightning destruction

A blinding flash. An ear-piercing crack. Suddenly, one of your most valuable trees is destroyed by lightning — one of the most destructive forces of nature. In its 70-year history, The Davey Tree Expert Company, Kent, Ohio, has seen the results of countless lightning strikes. And, again this year summer electrical storms have taken their toll of hundreds of trees throughout the country.

According to John W. Joy, Davey vice president, "Tree owners can protect their valued trees by turning them into giant lightning rods." The cost of installing lightning protection is only a fraction of what a fine tree may be worth in terms of actual dollars. Remember, a house can be replaced in every detail, but the grand old trees around it . . . never.

Although it is not possible to prevent a tree from being struck by lightning, it is possible to equip a tree so that lightning will be conducted harmlessly into the soil.

Here is how professionals install a lightning protection system: A copper cable is attached from the highest parts of the tree to the ground, running down the trunk in

as nearly a straight line as possible. Branch conductors also are run from the main limbs in the upper part of the tree and attached to the main trunk connector. (See illustrations.)

Ground cables, buried in narrow trenches, are attached to the main conductor and extend from the base of the tree like the spokes of a wheel. A copper rod, attached to the ground cable, is driven into the ground at the end of each trench. The purpose of the spoke-like ground connection is to pick up or distribute the current beyond and below the roots which are as sensitive to injury as the top of the tree.

Within a clump of trees, terminals should be attached to one or more of the tallest trees in the group. Also, if a tree is close to and taller than your home, permitting the lightning to follow the tree-grounded route might avoid a strike on the house.

Joy pointed out that trees are constantly growing upward and outward each year and changes occur in their structure, character and physical being. Therefore, lightning protection installations should be checked every four or five years.



For lightning protection a special conductor cable is attached to the highest parts of the tree (left) and runs along major branches down the tree trunk. The ground system (right) consists of an extension of the main trunk cable to a point beyond the main root system and is attached to a rod driven to the required depth.

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## People on the Move

W. H. Bricker, president of **Diamond Shamrock Corporation**, has been elected to succeed C. A. Cash as chief executive officer. Cash will continue as chairman of the board. Bricker will be chief operating officer as well as chief executive. Cash has been with the company since 1935. He has held directorships in the Diamond Shamrock Corporation, American Petroleum Institute, First National Bank of Amarillo, and Texas Mid-Continent Oil and Gas Association. Bricker joined the company in 1969 and has held directorships in the Diamond Shamrock Corporation, Society National Bank of Cleveland, National Agricultural Chemicals Association and the Samuel Moore & Co. He is a member of the John Carroll University Board of Trustees, Greater Cleveland Growth Association, and Musical Arts Association.

Ed Felton has been promoted to Western zone manager for **Charles Machine Works, Inc.**, manufacturer of Ditch Witch construction equipment. He will be responsible for Hawaii, Alaska, 13 Western and Midwestern states and western Canada. Felton has been a district representative in the upper Midwest and on the West Coast.

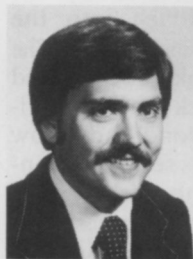
**Ciba-Geigy** announces some new field sales representatives in the Agricultural Division: Jim Fast has a territory covering 18 counties in Missouri, nine counties in Kansas and three in Oklahoma; John Taylor serves 17 counties in northern Mississippi; former administrative secretary Courtenay Benbow Forrester covers 19 counties in North Carolina and four in Virginia; Cheryl Lynn English is responsible for five Illinois counties, and Comfort "Bisi" Komolafe serves 10 counties in western New York.



Felton



Lehman



McKenney



Smith

**ProTurf** has named Doug Smith and Jeff McKenney technical representatives for this Scott's division. Smith has held a similar position in Louisville, Ken., for four years and now takes over the southwestern Ohio territory. McKenney has been an instructor in ProTurf's Professional Turf Institute and now is tech rep in the newly created sales territory encompassing eastern North Carolina.

The **Pennsylvania Turfgrass Council, Inc.** has released its 1976 officers' names: President, Arthur D. Wick; Vice President, C. William Black; Treasurer, David M. Boyd, Jr.; and Executive Director, Fred V. Grau. On the Board of Directors are R. W. Marberger, Jr., Don Pakkala, George J. Morgan, Henry F. Meinert, Jr., Arthur Czarnecki, John M. Bodock, John A. Segui, Bartholomew Cornali, John P. S. O'Connor, Clyde E. Lyons, C. William Black and Arthur D. Wick.

Jim Wickham is the district manager for the Texas and Oklahoma areas of the **Moody Sprinkler Co., Inc.** He has much experience in irrigation and contracting.

Ronald A. Stinson was transferred to Agricultural Sales at **Thompson-Hayward Chemical Company**. He is responsible for agricultural chemicals sales in the Western Oregon territory.


Rowland R. (Dick) Lehman is filling the new position of vice president of marketing at **Wisconsin Marine, Inc.** of Lake Mills, Wis. Addition of Bob-Cat Commercial Mowers and expansion of the Bob-Cat Snow Thrower line prompted creation of the position. Lehman, who has an extensive background in marketing power lawn equipment, is responsible for developing and administering a worldwide market for Bob-Cat outdoor power products.

The **ProTurf Division of O. M. Scott & Sons** has made regional manager changes and formed a new region in the South: Ted Mulcahey is the new Central Regional Manager, serving Ohio, Michigan, West Virginia, Southern Indiana and Northern Kentucky. Mike Kolb is responsible for the newly aligned Southern Region, including Texas, Louisiana, Mississippi, Alabama, Florida and islands in that area. Mid-South Regional Manager Dick Spitler, manages Virginia, North Carolina, South Carolina, Georgia, Arkansas, Tennessee, northern Mississippi and northern Alabama.

Promotions and additions in the **Elanco Products Company**, agricultural marketing division of Eli Lilly and Company, include Becky J. Tilton, E. Sue Hansford and Nicolas R. Herbert, agricultural chemicals sales trainees; David R. Finley and Robert L. Fowler, sales representatives in the Peoria sales district; and a recent addition, Edward J. Sangster, sales representative in Columbia, Missouri.

Milton R. Shapiro was named assistant corporate controller of **Beker Industries Corp.** He is a certified public accountant and has a degree in accounting from Rutgers University.





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Technical tests being conducted on typical aerial lift unit.

## New company tests aerial lifts

A growing number of accidents are being recorded by users of aerial lift equipment. Nine of every ten such mishaps come about because of mechanical failure. Seldom does the insulation which is designed to protect the operator fail when a high voltage line is accidentally contacted. Insulation is more likely to be fail-safe than the mechanical phases of the unit.

Such are the findings of a new company known as American Safety Test at Morrow, Georgia, formed only for testing and inspecting aerial lift equipment. The units, known by such names as bucket trucks, cherry pickers or aerial lifts, need regular checks and service. Russell W. Tupper and Warren E. Tupper founders of the company, have more than 35 years of experience in working with aerial lift units.

They report owners and operators are almost totally concerned with the insulated components of such equipment and many are unaware of the fact that

mechanical failure is responsible for more accidents.

Their new safety testing and inspection program naturally includes what is commonly known as the dielectric test for both insulated aerial lift components and tools. This is basic, however, they go beyond this with five other major steps — one of which is a loading and stability test.

A third test is the complete analysis of hydraulic oil. Many times after a machine has been in service for an extended period or has been used under stress, the oil contains excess moisture, acid or picks up foreign materials which affect the reliability of the aerial equipment.

Another step and probably the most critical in preventing accidents and reducing costly repairs, is a complete professional visual and operational check of the total aerial lift, accessories, tools and safety equipment.

Other steps include a verbal question and answer period with the

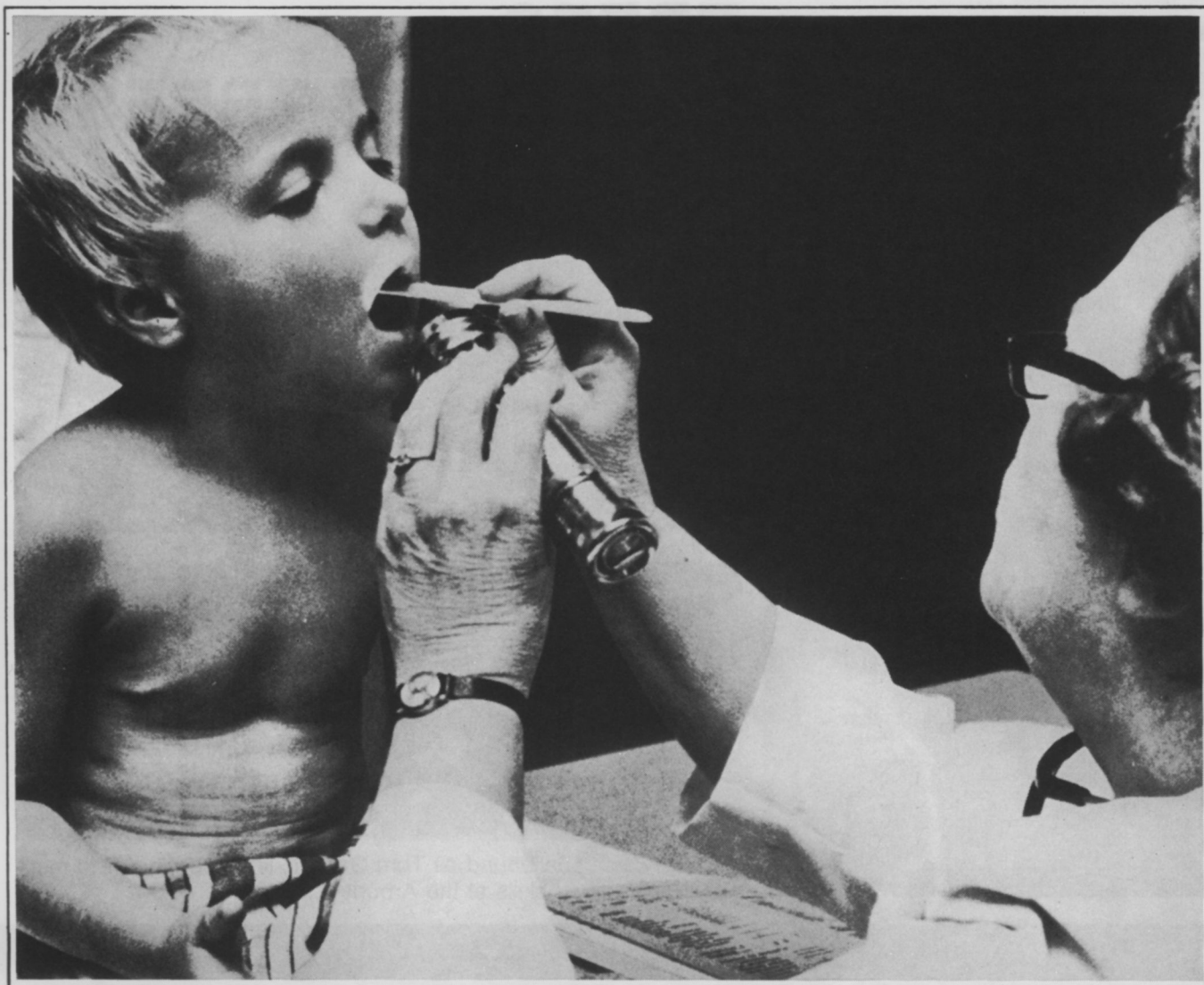
operator and crew which confines discussions to safety instructions and proper operation of the equipment. It is important to point out that during these tests and inspections, the inspectors do not in any way convey the negative items to be reported to the operating crew or any other personnel present at the time of the inspection.

The next and last step is a practical and easy to understand report which is given the owners. This is a confidential report and is broken down into separate listings for safety hazards and mechanical discrepancies.

Safety hazards need to be corrected immediately according to AST. Mechanical discrepancies not considered hazardous immediately can be corrected at the regularly scheduled service. The AST officials also point out that the company does not make mechanical repairs or in any way service equipment. Theirs is a test service only — geared to spot potential problems and prevent accidents.



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## The focus was on **TREES . . . AND MORE TREES**



Crowds watch spellbound as Tom Gosnell, left, and other field men demonstrate their skills at the Arborists' Jamboree.





"Trees Form an Archway to the Future" was the theme and St. Louis was the setting as nearly 1000 members and friends of the International Society of Arboriculture gathered Aug. 8-11 to talk trees.

It was the 52nd annual convention of the group, formerly called the International Shade Tree Conference. Why the new name? "We wanted to have a name that more closely reflected our purposes of promoting and improving the practice of professional arboriculture," explained Cal Bundy, the group's exuberant executive secretary.

But the name change wasn't all that was new. This year there was more emphasis on field techniques. "Too often when professional organizations meet to discuss new products and practices only the owners and managers are in attendance. We wanted to reach the field people too," Bundy explained.

A reflection of this philosophy and a highlight of the conference was the first International Arborists Jamboree held at the beautiful Missouri Botanical Gardens.

Here, the group's members and families watched spellbound as the world's top field men demonstrated their skills in tree work competitions, including a western-style tree climb won by Tom Gosnell of Santa Barbara, currently the world's champion tree climber.

Outstanding educational programs with an emphasis on trees in the modern urban environment, 33 commercial exhibits and 12 educational exhibits formed the basis of this successful conference. WEEDS TREES & TURF will bring you more on the educational programs in a future issue.

Newly elected officers include: Hyland R. Johns Jr., Willow Grove, Pa., president; Yvon Fournier, Trois Rivières, Quebec, president-elect; Roy Gustin Jr., Silver Spring, Md.,

vice president; and Dan Neely, Urbana, Ill., editor.

Recognition awards went to Dr. T. T. Kozlowski, Department of Forestry at the University of

Wisconsin, Dr. Cynthia Wescott, retired plant entomologist, Croton-on-Hudson, N.Y., and Edgar G. Rex, retired plant pathologist, New Tripoli, Pa.



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## FROM THE CAMPUS

# Mulching made easy

The virtues of mulches are more than skin deep, according to Dr. Charles Dunham, extension horticulturist at the University of Delaware. Mulching can control weeds, conserve water and protect plants, as well as add beauty through a variety of available materials.

One benefit provided by mulches is water conservation. They cut evaporation losses by retaining moisture and capture water that would ordinarily run off in hard showers. Plants are protected from splashing mud and dirt that can be a problem to both vegetables and flowers.

There is a diversity of possible mulching materials, mostly organic but also inorganic, such as aluminum foil which is helpful in protecting plants from insect damage. Dunham claims that as long as water can penetrate and the mulch does not pack to exclude air from the soil it should work. Organic mulches break down at different rates and enrich the soil in the process, but if there is a high ratio of carbon to nitrogen a temporary nitrogen shortage can result, necessitating the addition of extra nitrogen. Sawdust and straw will do this.

For flower beds, house and patio, appearance and cost are probably important factors in choosing a mulch. There are some readily available that will enhance the looks of flowers and shrubs.

Bark and wood chips are ideal mulches especially for shrubs and ground covers. They are attractive and long lasting. Use coarser grades for trees and shrubs and finer, smaller sizes for flowers and ground covers. Four to six inches of mulch is needed for long lasting weed control.

Licorice root sold as Right Dress is one of the best mulches for flower beds.

Cocoa bean hulls are available in

some areas. These tend to pack so should not be used more than two inches deep. They also are sometimes toxic to azaleas. However, for many plants they are satisfactory and attractive.

Grass clippings are one of the cheapest and most available mulches. The problem with grass clippings is that used fresh they tend to rot and pack tightly, warns Dunham. This can be overcome by drying the grass first or stirring repeatedly until dry after they are in place. Grass clippings are probably best in the vegetable garden. Straw is also excellent in the garden.

Pine needles are an attractive mulch especially good for azaleas.

## Midges for weed control

University of Idaho scientists have released 25,000 insects in the hope they will destroy some plants.

The insects are skeleton weed midges and are roughly the size of fruit flies. The university has imported thousands of them from the U.S. Department of Agriculture's Biological Weed Control Laboratory at Albany, Cal. to combat skeleton weed, a range pest that competes with forage grasses and crops.

"A few years ago there were just scattered skeleton weed plants found in the Payette River canyons around Banks and Garden Valley," said Dr. William Barr, professor of entomology at the university. "Since

then, that small population has mushroomed out all over the canyons between Banks and Lowman and even over into the Stanley Basin."

"The steep terrain in the canyons makes chemical control of skeleton weed dangerous and expensive," said Barr, "We brought in the midges because they have a definite potential for biological control and they're easy to rear. We don't really expect the insects to control the weed completely. But our plant scientists are working with a strain of rust disease that attacks skeleton weed specifically, and we hope that a combination of the insects and the rust will provide some measure of control."



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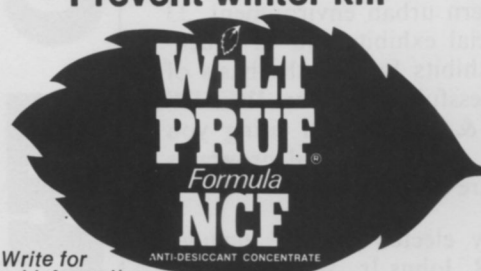
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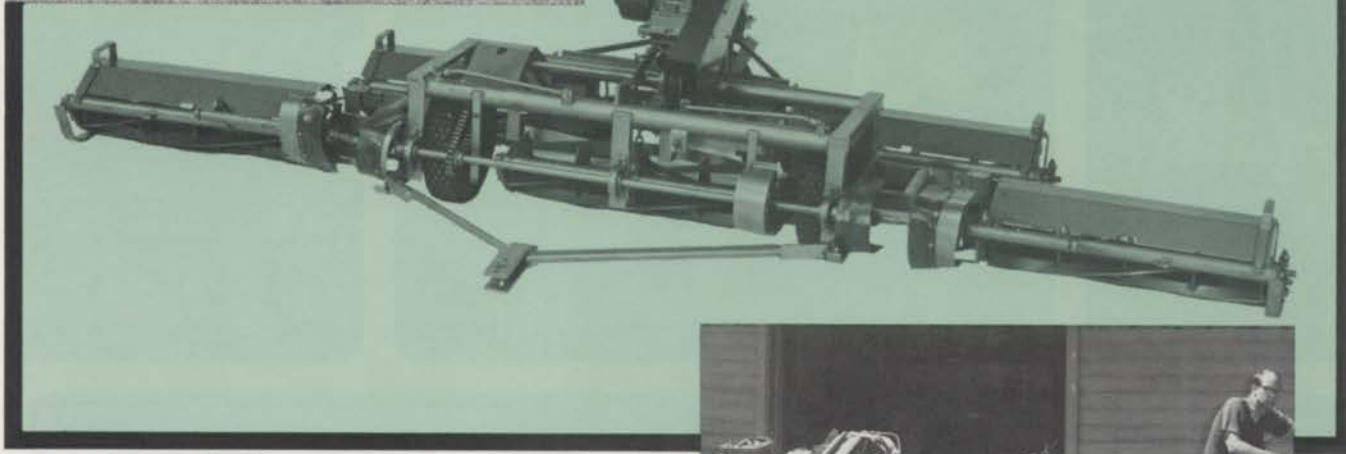
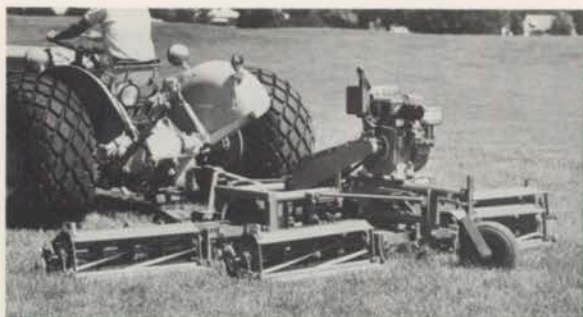
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**1977 MANAGERS GUIDE  
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# 1977 Managers Guide to Equipment and Supplies

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The Guide has two sections. Manufacturers are listed in alphabetical order along with their equipment and supplies in the first section with advertisers in bold type. In the second section, products are grouped alphabetically with the manufacturers listed below.

Because manufacturers add and delete product lines, change names and are generally never static, omissions of certain manufacturers and/or product lines are unavoidable. Your comments and suggestions are welcomed to help us continue to produce and improve this important service.

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Hose and fittings, hydraulic, fuel, air, oil, water; pressure from low to super high

**Agro Care**, 7855-D Gross Point Rd., Shobie, Illinois 60076  
Chemical Applicators (granular and liquid); Erosion control materials; Insect killer; Irrigation, Injection equipment; Soil testers; Spray booms; Spray guns; Spray nozzles; Sprayers (cart or wheelbarrow type, complete power unit); Tanks (spray); Tractor (8-12 hp); Trailers; Tree Injectors; Truck (light hauling, utility turf vehicles)

**AgTronics Mfg. Co.**, 1560 State St., Barstow, Calif. 92311  
Soil moisture meter

**Air-Lec Industries, Inc.**, Outdoor Product Div., 3306 Commercial Ave., Madison, Wisconsin 53714  
Aquatic weed harvester

**Air Rake Mfg. Corp.**, 5 Springfield St., Chicopee, Massachusetts 01013.  
Leaf blowers

**Alcoa Aluminum Co. of America**, Alcoa Building, Pittsburgh, Pa. 15219

Irrigation pipe

**Allis-Chalmers Corp**, Box 512, Milwaukee, Wisconsin 53201

Model 715 backhoe-loader, Allis-Chalmers 65 hp gasoline engine

Model 816 backhoe-loader, Perkins diesel engine 83 hp

Model 540 articulated loader, 57 hp gasoline or diesel Engines (diesel)

Fork lifts & attachments

Generators

Harrow (spring-toothed)

Leaf blowers

Materials (handling)

Mowers (rotary, sickle bar)

Park equipment

Centrifugal pumps

Saws (chain, gasoline)

Hopper-type seeders

Snow thrower

Tractor (from 8-151 and up hp)

Tractor (crawlers)

**Amchem Products, Inc.**, Brookside Avenue, Ambler, Pennsylvania 19002

Meter Miser, liquid spreader gives precision application of Weedone liquid herbicide products without the need for calibration

Directa-Spray, sprayer end unit.

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

Arborist supplies

Chippers

**American Excelsior Corp.**, 850 Ave. H, East Arlington, Tex. 76010

Erosion control products

Soil retention products

**American Hose & Reel Co.**, P.O. Box 639, Marland, Okla. 74644

Thermoplastic spray hose with working pressure of 250, 400 and 800 PSI; ¼, ⅜, ½, ¾-inch sizes

Fertilizer applicator tubing; ¼, ⅜, ½, ¾-inch sizes

Hose reels; small, 300 ft., ½-inch hose, 1000 P.W.P.; large, 300 ft., ¾-inch; adjustable drag

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

**American Optical Corp.**, 14 Mechanic St., Southbridge, Mass.

Respirators, protects against harmful, highly toxic sprays, dusts and vapors in insecticides, fertilizers, etc.

Eye protection goggles, protects against impact or dust & chemicals resulting from spraying, dusting, cutting, etc. Available with clear or sunglass lenses, plain or coated for anti-fogging.

Hard caps and hats, head protection against falling limbs or branches — Meets Amer. Nat'l Std. Z89.1-1970

Hearing protectors, protects hearing from damaging or irritating noises of tractors, sprayers, power saws, etc.

**Ametek, Inc.**, 502 Indiana Ave., Sheboygan, Wisc. 53801

Miscellaneous irrigation

Underground enclosures

**A.M.F. Lawn and Garden**, 3811 McDonald Ave., Des Moines, Iowa 50302

Edgers

Leaf blowers

Mowers (reel, rotary, replacement parts)

Mulch blowers

Snow thrower

Sweepers (lawn)

Tillers

Tractors (8-10 hp)

Lawn vacuums

**Amoco Chemicals Corp.**, Industrial Products Div., 1530



Commerce Dr., Stow, Ohio 44224

Polyethylene pipe and fittings for irrigation  
PVC pipe and fittings for irrigation  
Corrugated plastic drainage tubing

Anchor Post Products, Inc., 6500 Eastern Ave., Baltimore, Maryland 21224.

Fences and gates

Andrasko Engineering Co., P.O. Box 4633, Santa Barbara, Calif. 93103

The Meter Matic, fertilizer injector for irrigation systems

**A.O.A. Research & Development, Inc.**, P.O. Box 6081C, Orlando, Fla. 32803

Underwater weed cutter (manually operated)

Aqua-Dial, P.O. Box 1325 Newport Beach, Calif. 92624

Turf irrigation equipment  
Automatic valves, hydraulic and electric, remote control  
Automatic controllers  
Sprinklers, gear driven, pop up, vandal resistant, lawn and garden

Aquamarine Corp., Box 616, Waukesha, Wisc. 53186

Aquatic weed harvester

Aqua-Mech Co., 2609 Cedar Springs Rd., Dallas, Tex. 75201

Aqua Mech, conversion kit from manual valve and key to automatic timed heads

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

Weedrake, underwater air boat

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

Weedrake, underwater

Aquatrols Corp. of America, 1400 Suckle Hwy., Pennsauken, N.J. 08110

Chemicals for turf management

Arctic Mizer Mfrs., Inc., 2116 E. Norse Ave., Cudahy, Wis. 53110

Arctic Mizer, spreader, self-powered; vacuum-thatcher, self-powered

Ariens Company, 655 W. Ryan Street, Brillion, Wis. 54110

Ariens Emperor, riding mower — 30" rotary; 8 hp  
Ariens Fairway, riding mower — 26" rotary; 5 and 7 hp  
Ariens S-8 Tractor, lawn tractor — 36" rotary; 8 hp  
Ariens Trac-Team, 26" rotary mower, lawn vacuum, rotary broom on one 8 hp tractor

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

Anderson Rock Picker  
Rock windrowers (rock rakes)

Arps Corp., 1711 Wisconsin Ave., New Holstein, Wis. 53061

Arps 728, backhoe, tractor-mounted  
Arps 730, backhoe, tractor-mounted  
Arps blades and rakes, landscaping rakes and utility blades, box scrapers  
Johnson "Work-Horse", front-end loader, garden tractor-mounted  
Arps mini-blades and rakes, blades and rakes for garden tractors

**Asplundh Chipper Co.**, Div. Asplundh Tree Expert Co., 50 East Hamilton St., Chalfont, Penna.

Chipper, high speed, tapered blade  
Forestry truck, Models L-40, 42, 45, 50; dump body, 12-inch chipper, aerial bucket  
Brush hooks

Atlas Tool — Mfg. Co., 5151 Natural Bridge Ave., St. Louis, Mo. 63115

Mowers (rotary)

Shredders  
Snow thrower  
Tillers

Atwater Strong Div., Gougler Indus. Inc., P.O. Box 68, Atwater, Ohio 44201

Blowers  
Sweepers  
Air brooms

Aurora Pump Div., NY Air Brake, 800 Airport Rd., Aurora, Ill. 60542

Aurora pumps, irrigation pumps, centrifugal and turbine pumps

**Austin Products, Inc.**, P.O. Box 1590, Dallas, Texas 75221

Augers (earth)  
Blades (dozer-scraper)  
Brush cutters  
Cranes  
Discs (cultivating)  
Earth augers  
Harrow (spring-toothed)  
Hoists  
Mowers (rotary and replacement parts)  
Post hole digger  
Rakes (landscaping)  
Scrapers  
Shredders

**Auto Hoe, Inc.**, Lost Dauphin Dr., Box W121, De Pere, Wis. 54115

Tillers

Avco Ezee Flow Division, 420 S. First Street, Coldwater, Ohio 45828

Chemical applicators (granular)  
Rakes (all purpose and landscaping)  
Pruners

Avco New Idea, 420 S. First St., Coldwater, Ohio 45828

Blades (dozer-scraper)  
Chemical applicators (granular)  
Mowers (rotary)  
Pruners  
Seeders (hopper-type)  
Snow thrower  
Sweepers (lawn)  
Tractor (8-20 hp)  
Trimmers (hedge and grass parts)

## B

**B.A.G. Corporation**, 9443 Sherwood Glen, P.O. Box 28403, Dallas, Texas 75228

Taicon Container, plastic, collapsible, reusable shipping container for handling bulk shipments  
Super Sack container, one-ton disposable container

Baker Equipment Mfg. Co., 1710 High Point Ave., Richmond, Va. 23230

Aerial towers, mobile equipment  
Derricks, mobile equipment

**Bartlett Mfg. Co.**, 3024 East Grand Blvd., Detroit, Mich. 48202

Saws, tree, combination pruner and saw  
Saw, pruning, hand  
Saw sheaths  
Tree bracing materials

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

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

John Bean Div., FMC Corp., 1305 S. Cedar St., Lansing, Mich.

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



The man to see for the most complete selection of top-quality industrial  
**lawnmower replacement parts!**

"Down-time" on industrial lawn-turf equipment is a costly and bothersome problem. One you can't afford.

That's why, at Lawnmower Parts, we manufacture and stock only the finest quality bed knives, gears, bearings, gaskets, seals, shafts and other replacement parts. To keep your equipment rolling.



Whether you have Toro, Jacobson, Worthington, Locke Devere, Roseman or others, chances are the "professional" at LMP will have the part you need, when you need it.

He also has parts for reel and rotary-type mowers and edgers, ready for immediate shipment to you. Next time, save time and money... contact the "professional" for the LMP distributor nearest you.

**Lawnmower Parts Manufacturing Company**  
 16400 East Truman Rd. ■ Independence, Mo. 64050  
 1-816-833-2000

**CALL TOLL FREE 800-821-2786**



Mistblowers, truck mounted, nozzle parts  
Flamethrowers (sprayers)

Beard-Poulan Division, Emerson Electric Co., 5020 Flournoy-Lucas Rd., Shreveport, Louisiana 71107

Generators  
Pumps (centrifugal)  
Saws (chains, electric and gasoline, chain parts)

Beatty Trailers, Box 1027, Burlington, N.C., 27215  
Beatty trailers, self-contained, hydraulic dump; capacities 2, 3, 5, 9, 13-yard  
Transport trailers, 6 to 30,000 lb. capacity; tag-a-long and goose neck

**Beck Manufacturing Company**, P.O. Box 752, Auburn, Alabama 36830

Lawn-O-Matic, turf grass planter, plugger-sprigger  
Sod-O-Matic sod cutter, sod cutter cuts 3 16" strips at one time  
Sod-O-Matic sod harvester, Beck's big roll-sod harvesting and laying system

Beeco Products Co., Industrial Park, Fort Washington, Pa. 19034

Chemical applicators (liquid)  
Spray nozzles (complete)

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

Bemis Company, Inc., 800 Northstar Center, Box 215, Minneapolis, Minn. 55402

Bags and liners, plastic  
Bags, tree balling, litter, grass catcher  
Twine, tying

Wm. Bergman Co., 1335 M-15, Reese, Mich. 48757  
Service, stone picking, seeding, land preparation

Berkeley Pump Co., 829 Bancroft Way, Berkeley, Calif. 94710  
Pumps (centrifugal)

**Bermuda King, Inc.**, Rte. 1, Okarche, Okla. 73762  
Sprig harvesters, 20", 28", 42", 30 to 60 hp, 500 to 1,000 watt an hour rating  
Sprig planters, 1, 2, 3 and 4-row, large capacity  
Fairway spriggers, 2 to 10' width, large capacity

Bete Fog Nozzle, Inc., Greenfield, Mass.  
Stubbies, nozzles, mini-sized, three cone angles, flow rates from 3 to 300 gpm

Big Brute Turf Cutter, 18035 Georgia Ave., Olney, Md. 20832  
Sod cutter

Big "J" Products, Route 1, Hanna, Ind. 46340  
Sod harvester, dual palleted

Big John Tree Transplanter Mfg. Co., P.O. Box 608, Heber Springs, Ark. 72543  
The world's largest patented tree spade

Billy Goat Industries, Inc., P.O. Box 308, Lee's Summit, Mo. 64063

Indoor/outdoor vacuums  
Shred N Bag  
Winrow Turbo Blast Blower  
Chippit Chippers

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

Battery chargers  
Edgers (electric)  
Mowers (electric and cordless) & replacement parts  
Cordless grass shears  
Electric tillers  
Trimmers (electric and cordless; hedge and grass; parts)

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

Chemical applicators (granular and liquid)  
Dusters (power)  
Irrigation (injection equipment)  
Pumps (centrifugal and complete power unit)  
Spray booms  
Sprayers (complete power unit)

Sprayers (cart or wheelbarrow type)  
Spreaders (hopper-type)  
Tanks (spray)  
Tractor (13-20 hp)

Blue Bird International, Inc., 2778 So. Tejew, Englewood, Colo. 80110

Turf combs  
Cranes  
Hoists  
Hydraulic lifts  
Vertical mowers  
Thatchers

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

Utility, 5' tractor operated rotary mower  
Special, 6' tractor operated rotary mower  
XL and Brute, 5' and 6' tractor operated rotary mower  
Fury, 7' tractor operated rotary mower  
6, 7, 8' med. duty tractor rear blades  
8' and 10' heavy duty tractor rear blades  
Suburban 48, 48" trailing rotary mower w/ 8 hp gas engine  
Suburban 60", 72" tractor mounted belt driven rotary mower  
BMB flail mowers, 72", 90", 144" and 180" tractor operated

Bock Industries Inc., 57540 State Rd. No. 195, Elkhart, Ind. 46514

Trailer for utility vehicles and golf car

Bolens FMC Corp. Ope Division, 215 South Park St., Port Washington, Wisc. 53074

Earth augers  
Backhoes  
Blades (dozer-scraper)  
Tractor loaders  
Rotary mowers and replacement parts  
Post hole digger  
Snow thrower  
Tillers  
Tractors (8-20 hp)

**Bombardier Limited** Valcourt, Quebec, Canada

Brush cutters  
Low PSI tracked vehicles

**Boss Irrigation Div., Consolidated Pipe Mfg.**, P.O. Box 5695, Lubbock, Texas 79417

Irrigation sprinkler

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

Hydro seeding and mulch machines  
Hydraulic seeders  
Sprayers (complete power unit)  
Bowie Rotary Gear Pumps

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

Pixtone, trailer-type—self-powered, picks stone ¾ to 9-inch diameter

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

Engines, 4-cycle, single cylinder, gasoline

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

Erosion control materials  
Backpack mistblowers  
Respirators  
Soil testers  
Fiberglass mulch  
Fiberglass soil separation

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

Swing-cut, rotary mower (60" and 72")  
Turf-Maker, seeder for sod-growers (8' and 10')  
Terra-Scraper, landscape rakes  
Sure-Stand, landscape and agricultural seeders (5', 8', 10', 12')

Brinly Hardy Co., Inc., P.O. Box 1116, Louisville, Ky. 40201  
Aerators  
Blades (dozer-scraper)  
Cultivating discs  
Fork lift (attachment)  
Harrow (spike-toothed and spring-toothed)  
Turf rollers  
Lawn sweepers

**Brouwer Turf Equipment Limited**, R.R. No. 1, Keswick (Don Mills Road), Ontario, Canada L4P 3C8

Reel mowers  
Sod harvesters

The Broyhill Company, No. Mkt. Sq., Dakota City, Nebr. 68731

Chemical applicators (liquid)  
Hose (spray and irrigation)  
Pumps (centrifugal)  
Hose reels  
Spray booms  
Spray guns  
Spray nozzles (complete)  
Sprayers (cart or wheelbarrow type)  
Sprayers (complete power unit)  
Spray tanks  
Power washers

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

Sprayer, mistblower, ULV hand carried, sonic ULV, mistblower, turntable  
Sprayer-duster, mist duster, combination  
Duster, dust only  
Sprayer-duster, back pack, power take-off

Bunton Co., 4304 Poplar Level Rd., Louisville, Ky. 40213

Mowers, rotary  
Lawn and turf equipment

## C

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

Blades (dozer-scraper)  
Brush cutters  
Flail mowers  
Rotary mowers  
Post hole digger  
Dirt scoops (1/3 yd. and 1/2 yd.)

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

Sod  
Stolons  
Vexar® sod netting layer

Campbell-Hausfeld Co., Lombard Chain Saws, Sales Ave., Harrison, Ohio 45030

Gasoline chain saws and parts  
Spray guns  
Spray nozzles (complete)  
Sprayers (cart or wheelbarrow type and complete power unit)

Capital Equipment Company, P.O. Box O, Alexander, Ark. 72002

Aerators  
Blowers  
Chippers  
Edgers  
Gasoline and diesel engines  
Generators  
Harrow (spike-toothed and spring-toothed)  
Hose (spray, irrigation)  
Irrigation (injection equipment)  
Irrigation (components, pipe, risers)

Irrigation sprinklers (above ground)  
Impulse, pop-up, heads  
Spray, pop-up, heads  
Rotary, pop-up, heads  
Stationary  
Valve in head (complete)  
Leaf blowers  
Tractor loaders (mounted)  
Mowers (flail, greens, reel, rotary, sickle bar, vertical)  
Park equipment  
Post hole diggers  
Pruners  
Seeders (disc-type, hopper-type, hydraulic)  
Shredders  
Sod cutters  
Soil testers  
Sprayers (cart or wheelbarrow type)  
Complete power unit sprayers  
Lawn sweepers  
Spray tanks  
Thatchers  
Tillers  
Tractor (at 8-60 hp)  
Hedge and grass parts trimmers  
Turf vehicles  
Vacuums

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

Transplanter, tree transplanter for installation on agricultural or industrial tractors or 4-wheel loaders

J I Case, Outdoor Power Equipment Division, 119 South First Street, Winneconne, Wisconsin 54986

Backhoes  
Blades (dozer-scraper)  
Fork lift attachments  
Tractor loaders (mounted)  
Rotary mowers  
Lawn sweepers  
Tillers  
Tractor (8-20 hp)  
Complete line of lawn and garden tractor attachments including snow-blowers, rotary mowers, tillers, compact loaders and compact loader, backhoes  
Dump carts

Cast Iron Pipe Res. Assoc., 1211 W. 22, Oakbrook Exec. Plaza, Suite 23, Oakbrook, Ill. 60521

Cast iron pipe for irrigation

Causco Inc., P.O. Box 1921, Independence, Mo. 64055

Portable hydraulic power packs  
Hydraulic tools for pruning  
Chain saws  
Pavement breakers  
Clay spades  
Also sell and rent aerial bucket lifts, 24-150 feet.

Cenol-Division Burgess Vibrocrafter Inc., Route 45 and Peterson Rd., P.O. Box 177, Libertyville, Ill. 60048.

Chemical applicators (liquid)  
Foggers  
Insect killers  
Mistblowers (nozzle parts)

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

Sprayers, trailer, tractor, jet or mechanical agitation  
Washers, high pressure  
Heaters, portable oil and gas

**Certain-Teed/Daymond Co.**, 230 Collingwood, Suite 150, Ann Arbor, Mich. 48103

Certa-Flex, corrugated plastic tubings of various diameters for land drainage and trickle irrigation



**Certain-teed Pipe & Plastic Group**, Valley Forge, Pa. 19481  
Certain-teed PVC pipe, irrigation  
Choice of Fluid-Tite™ double gasket joints or solvent-weld joint  
Fittings, irrigation pipe

**Champion Brass Mfg.**, 1460 N. Naud St., Los Angeles, Calif. 90012

Champion 466, 466P, anti syphon valves  
Champion 17, 18, 19, lawn sprinklers, flush, pop-up, shrub  
Champion E.A., C.E.A., electric adapters

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

Trailer

**Champion Heater Company**, 221 4th Ave. SE, Cedar Rapids, Iowa 52401

Heaters (portable oil fired and portable gas fired)  
Washers (portable high pressure)

**R. E. Chapin Mfg. Works, Inc.**, 29 Liberty St., Batavia, New York 14020

Sprayers (compressed air, hose end, hand)  
Dusters (plunger type, rotary)

**Chemagro Agricultural Division of Moray Chemical Corp.**, Box 4913, Kansas City, Mo.

Fungicides  
Insecticides  
Molluscicides

**Clarke Div., Clarke-Gravely Corp.**, 2800 Estes Street, Dept. 17 WT&T, Muskegon, Michigan 49441

Lawn sweepers  
Vacuums  
Automatic scrubber/vacuums for artificial turf maintenance  
Wet/dry vacuum cleaners  
parking lot sweepers

**Clark Equipment Company**, 112 North University, Fargo N.D. 58102

Skid steer loader

**Clark Equipment Trailer Division**, P.O. Box 410, Michigan City, Indiana 46360

Clark equipment mini trailers; 22 and 30 ft. flatbed trailers designed for use with 5th wheel connecting pick-up trucks.

**Clinton Engines Corporation**, Clark & Maple Streets, Maquoketa, Iowa 52060

Engines, gasoline

**Club Car, Inc.**, P.O. Box 897, Augusta, Georgia 30903

Caroche, four-wheel electric golf car (2 passengers)  
Caroche utility truck, four-wheel electric utility truck (2 passenger and 500 lb. load)  
Caroche Personnel Carrier, four-wheel electric (4 passengers)  
Caroche Islander, combination commuter and golf car

**Contree Sales, Inc.**, P.O. Box 129, Columbus, Wis. 53925

Earth augers (soil samplers)  
Chemical applicators (granular and liquid)  
Insect killer;  
Pumps (complete power unit and centrifugal)  
Soil testers (stainless steel sampler)  
Spray boom  
Sprayers (complete power unit)  
Spray tanks  
Boom dye marker  
Wat Sol Oilers  
Rice Paddy Daddy-WAND boom  
Tree injectors

**Conwed Corporation**, 2200 Highcrest Rd., St. Paul, Minn. 55113

Conwed Hydro Mulch, a wood fiber mulch used in hydro seeding  
Conwed Economy Erosion Control Netting, tough plastic net used over loose mulches in high erosion areas

**Cooper Mfg. Co.**, 422 S. First Ave., Mardhaltown, Iowa 50158

Edgers, gasoline powered  
Mowers, reel, walking  
Champion 21, greensmower

**Corona Clipper Co.**, 14200 E. 6th, Corona, Calif. 91720

Pruners  
Manual saws  
Shears  
Trimmers (hedge and grass parts)

**Correct Mfg.**, Hughes Keenan Div., P.O. Box 689, Delaware, Ohio 43015

Sky-Worker, aerial bucket—reaches up to 71 ft., horizontal to 45 ft.

**Coursigns, Inc.**, 6500 N. Clark St., Chicago, Ill. 60626

Stakes, signs rope/plastic stakes and signs to direct golfers and golf carts, and to rope off repair areas of golf courses  
Sand trap rakes, specially designed for golf course use

**Howard S. Crane, Inc.**, P.O. Box 88, Oneida, New York 13421

Augers  
Moisture tester  
All purpose rakes  
Rock pickers  
Trailers  
Sprayers (complete power unit)  
Spreaders (hopper-type)

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

Tree injectors

**Cresline Plastic Pipe Co., Inc.**, 955 Diamond Ave., Evansville, Ind. 47717

Cresline, PVC pipe and fittings

**Crown Chemicals**, 4235 Duncan Ave., St. Louis, Mo. 63110

Arborist supplies  
Chemical applicators (liquid)  
Insect killer  
Dust masks  
Gas masks  
Mistblowers (truck-mounted and nozzle parts)  
Pumps  
Reels (hose)  
Respirators  
Spray guns  
Spray nozzles (complete)  
Sprayers (cart or wheelbarrow type, also complete power unit)  
Spray tanks  
Tree injectors

**Crysteel Mfg. Inc.**, Highway 60 East, Lake Crystal, Minn. 56055

"Lo-Boy" truck hoist, 8 models available to fit any size truck  
Trailer hitches  
Grain bodies

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

Dyna Fogger, thermal fogger  
BP-145, backpack sprayer, duster

**Cyclone Seeder Co., Inc.**, Box 68, Urbana, Ind. 46990

Seeders (hopper-type)  
 Spreaders (hopper-type)  
 All products are of the broadcast type

**D**

Dadco, P.O. Box 2086, Fresno, Calif. 93719  
 Dadco, Battery Clamps

Ross Daniels, Inc., 1720 Fuller Road, Box 430, West Des Moines, Iowa 50265  
 Irrigation injection equipment  
 Root-feeding rods  
 Tree wrappings  
 Ross Garden Net  
 Ross Tree Food Stakes

**Davey Tree Expert Co.**, Kent, Ohio 44240  
 Tree nursery, 150 varieties of shade and ornamentals  
 Tree service, nationwide and Canadian representation

**Davis Mfg. Div. J I Case Co.**, P.O. Box 1801, Wichita, Kansas 67201  
 Backhoes  
 Boring units  
 Articulated loaders  
 Vibratory plows  
 Trencher

**Dedoes Industries Inc.**, 1060 W. Maple Rd., Walled Lake, Mich. 48088  
 Aerator

**Deere and Co.**, John Deere Rd., Moline, Ill. 61265  
 Backhoes  
 Storage batteries  
 Battery chargers  
 Diesel and gasoline engines  
 Fork lifts

Graders  
 Skid steer and tractor loaders  
 Flail, rotary, and sickle bar mowers  
 Hose reels  
 Manual and chain (gasoline) saws  
 Scrapers  
 Snow thrower  
 Spray nozzles (complete)  
 Tillers  
 Tractor (8-151 hp and crawlers)  
 Trailers  
 Trash compactors  
 Trimmers (hedge and grass, parts)

**Delavan Mfg. Co.**, 811 Fourth St., West Des Moines, Iowa 50265

Nozzles, all conceivable types, sizes and spray angles  
 Accessories, boom control valves, pressure relief valves, pumps, roller, turbine, piston

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

Remington gasoline chain saws, electric chain saws, pneumatic chain saws

**Dico Co., Inc.**, P.O. Box 1344, Des Moines, Iowa 50305

Dico Knuckle Boom for log loaders  
 Trolly boom hoists

**Didier Mfg. Co.**, 1652 Phillips Ave., Racine, Wisc. 53403

"Hydra Splitter" log splitter  
 "Hydra Sickle" sickle bar attachment

**Digz-All Trencher Co., Div. Wing King Co.**, Merrill, Iowa 51038

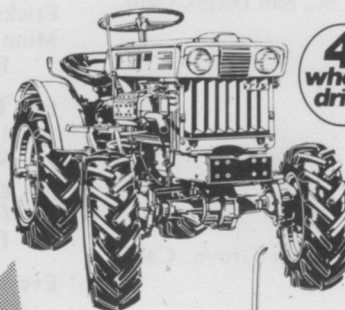
Digz-All, Trenchers

# 'good things come in small packages!'

It's true, good things do come in small packages. And the Kubota is no exception. Larger than the garden type, smaller than the giant-size... Kubota is the in-between tractor that's built for 1001 in-between jobs. All come with these standard features: live hydraulics, PTO's and 3-point hitch. Stop in... let us demonstrate Kubota tractors.

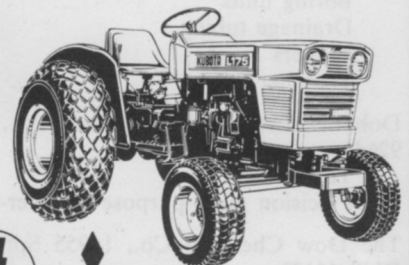
*Many other models and implements available.*

**KUBOTA**<sup>®</sup>  
 85 years of customer satisfaction



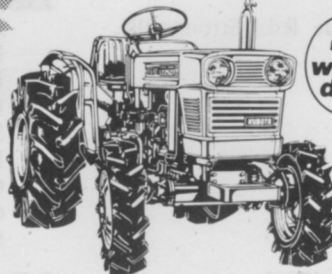
**4  
 wheel  
 drive**

**Model B6000C**... Hard working, liquid-cooled, 2-cylinder diesel that's hard to beat for efficiency and economy of operation.



**4  
 wheel  
 drive**

**Model L175T**... The tough little tractor that doesn't act its size. It can fill your work gap!



**Model L225DT**... 3-cylinder, 4-wheel drive, the powerful, dynamic-looking model with double traction.

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**KUBOTA TRACTOR CORPORATION**  
 300 W. CAROB ST., COMPTON, CA 90220



J. J. Dill Co., P.O. Box 788, 1407 Ravine Rd., Kalamazoo, Mich. 49005

- Blowers
- Chemical applicators (granular and liquid)
- Power dusters
- Foggers
- Hose (spray, irrigation)
- Insect killer
- Leaf blowers
- Dust and gas masks
- Mistblowers (backpack and truck-mounted)
- Pumps
- Centrifugal pumps
- Hose reels
- Respirators
- Safety equipment
- Spray booms
- Spray guns
- Spray nozzles (complete power unit)
- Spreaders (hopper-type)
- Spray tanks

Ditch Witch Division, The Charles Machine Works, Inc., P.O. Box 66, Perry, Okla. 73077

Underground construction equipment — trenchers, vibratory plows, utility backhoes, horizontal boring units and related equipment including trailers. Range of line — 7 hp to 195 hp.

Ditch Witch Equipment Co., P.O. Box 15881, 11662 S. Choctaw Dr., Baton Rouge, La. 70815

- Backhoes
- Boring units
- Hydraulic and air powered T
- Vibratory plows
- Trailers
- Trenchers

Ditch Witch of Columbus Inc., P.O. Box 420, Worthington, Ohio 43085

Distributor of trenchers

Ditch Witch of San Diego, 4661 Ruffner St., San Diego, Calif. 92111.

- Augers
- Earth augers
- Backhoes
- Boring units
- Drainage tubing
- Trailers
- Trencher

Dobbins, Inc., 9371 Chapman Ave., Garden Grove, Calif. 92641

- Turf dresser
- Precision multi-purpose mulcher-spreader

The Dow Chemical Co., 14955 Sprague Rd., Strongsville, Ohio 44136

- Insect killer
- Weed killers
- Grass killers
- Insecticides
- Miticides
- Nematocides
- In general—turf chemicals

DriAll, Inc., P.O. Box 309, Attica, Ind. 47918

- Air curtain destructor, pit incinerator for disposal of trees and wood products—air pollution approved
- Scarifier leveler, leveling device with scarifying teeth for landscapers, sod growers
- Yard leveler, leveling or grading drag

Dunlop Tire & Rubber Corp., Box 1109, Buffalo, N.Y. 14240

Dunlop tires, for cars and trucks, tractors and implements

## E

Eagle Mfg. Co., 24th & Charles St., Wellsburg, W. Va. 26070

Eagle Cans, gasoline cans manufactured to meet OSHA regulations

Earth Packing Industries, 3340 Peachtree Rd., Atlanta, Ga. 30326

Earth compactor, mounts on a backhoe boom

Echo Chain Saw Div., Kioritz Corp. of America, 350 Wainwright Ave., Northbrook, Ill. 60062

- Blowers
- Brush cutters
- Foggers
- Mistblowers (backpack)
- Gasoline chain saws and parts
- Gasoline engines
- Flamethrowers (sprayers)
- Power duster

Edwards Manufacturing Company, Route No. Box 1275, Ponca City, Oklahoma 74601

Edwards sprayers, power sprayers, 50, 100, 200, 300, 400, 500, 1,000 gallons; 3 to 50 hp engines

Energy Mfg. Co., Inc., 100 North Main Street, Monticello, Iowa 52310

- Hoist
- Truck hoists
- Travel lift hoists/truck dumpers
- Bolster hoists
- Hydraulic cylinders
- Hydraulic valves
- Hydraulic pumps and motors

Engineering Products Co., 1515 E. Ellis St., Waukesha, Wis. 53186

- Tractor loaders
- Rotary and sickle bar mowers
- Snow thrower
- Tillers
- Tractor (13-20 hp)

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

Erickson hydrostatic drive compact front end loaders

ESB Brands, Inc., (Willard, Exide), Box 6949, Cleveland, Ohio 44101

- Willard and Exide batteries, 6-volt electric golf car and golf utility vehicle batteries. Lead acid storage batteries for lawn and garden tractors
- ESB battery chargers

Eversman Mfg. Co., Curtis at Fifth St., Denver, Colo. 80204

Eversman Land Leveler

Excel Industries, Inc., P.O. Box 727, Hesston, Kansas 67062

- Blades (dozer-scraper)
- Brooms
- Edgers
- Flail and rotary mowers
- Snow thrower
- Lawn sweepers
- Grass/leaf catcher
- Grass/leaf mulcher
- Slope/hillside mower

E-Z Go Car, Division of Textron, Inc., P.O. Box 388, Augusta, Ga. 30903

- Light-hauling utility truck
- Gasoline and electric golf cars

E-Z Rake, Inc., 1001 S. Ransdell Road, Lebanon, Indiana 46052

- Blowers
- Leaf blowers

Power landscaping rakes  
Lawn sweepers  
Thatchers  
Vacuums

**F**

Fairmont Hydraulics, 332 S. Michigan, Chicago, Ill. 60604  
Post hole diggers  
Pruners  
Hydraulic chain saws and parts  
Tools (hand and hydraulic)  
Winch

**The Fanno Saw Works**, Box 628, 224 W. 8th Ave., Chico, Calif. 95926  
Arborist supplies  
Manual saws  
Hand and hydraulic tools  
Pruning saws and accessories

Fayette Division, Dayton-Walther Corporation, P.O. Box 339, Fayette, Ohio 43521  
Trailers

Ferrari International Inc., 6104 Avenida Encinas, Carlsbad, Ca. 92008  
Sickle bar mowers  
Snow thrower  
Complete power unit sprayers  
Tillers  
Tractors (21-60 hp)  
Rotary harrows  
Cultivators (row crop)  
Rotary and hydraulic tillers

Ferti-Feeder, 3973 Eastlay, Des Moines, Iowa 50306  
Ferti-Feeder, tree deep root fertilizer injector

Fibre Glass Products, Box 147, Swannanoa, N. C. 28778  
Tool boxes—pickup truck, fiberglass construction, paddle locks, built to accommodate B & G sprayer, fits all size trucks

Fimco, Inc., 1st & Court Streets, Sioux City, Iowa 51101  
Big Butch, pressure washer, electric, portable  
Dobbins, sprayer, lawn and garden, gas, mechanical agitation; sprayer, orchard and golf course, gas, mechanical agitation

Finn Equipment Company, 2525 Duck Creek Rd., Cincinnati, Ohio 45208  
Hydraulic seeding and mulch machines  
Mulch blowers  
Hydraulic seeders  
Burner (air curtain)

The Flintkote Co., Pipe Products Div., Box 151, Ravenna, Ohio 44266  
PVC pipe

Flo-Control Inc., 3212 Winona Ave., Burbank, Calif. 91510  
Irrigation valves (flow)  
P.V.C. compression fittings  
Couplings  
Adapters  
Tees  
Check valves

**FMC Corp., Agricultural Machinery Div.**, 5601 E. Highland, Jonesboro Ar. 72401  
Blowers  
Brush cutters  
Chemical applicators (liquid)  
Foggers  
Hose (spray, irrigation)  
Leaf blowers

Mistblowers (truck-mounted and nozzle parts)  
Flail mowers  
Pumps  
Centrifugal pumps  
Hose reels  
Spray booms  
Spray guns  
Spray nozzles (complete)  
Spray boom  
Sprayers (cart or wheelbarrow type, also complete power unit)  
Spray tanks

**FMC Corporation, Outdoor Power Equipment Div.**, 215 South Park Street, Port Washington, Wis. 53074

HT-20, tractor, garden, hydrostatic, twin cylinder, 19.5 hp 54-inch rotary mower, 48-inch two-stage snow thrower  
QT-16, tractor, garden, hydrostatic drive, twin cylinder 16 hp, 48-inch rotary mower  
QS-16, tractor, garden, hydrostatic drive, 48-inch rotary mower, 16 hp.  
H-14, tractor, garden, hydrostatic drive, 14 hp 42-inch rotary mower  
G-14, tractor, garden, 14 hp, 42-inch rotary mower  
G-10, tractor, garden, 10 hp, 38-inch rotary mower  
G-8, tractor, lawn, 8 hp, 32-inch rotary mower  
828, 829, mower, riding, 8 hp, electric and recoil start, 28-inch rotary mowers, mulching type, rotary, two 22-inch self-propelled; 22-inch and 18-inch hand-propelled  
Tillers, 3 1/2 and 5 hp gear drive. 3 and 5 hp chain drive  
Snow throwers, 5 to 8 hp with 24-inch to 32-inch width

**FMC Side-Winder**, P.O. Box 818, Minden, Louisiana 71055  
Side-winder rotary cutters, tractor drawn rotary cutters, lift and pull models, 4 ft. to 16 ft.  
Side-winder flail mowers, tractor drawn flail mowers, 6 ft. and 7 ft. models

**FMC Corporation, Sweeper Division**, 1201 E. Lexington St., Pomona, Calif. 91766  
Brush chipper and Wayne stump cutter

**Flymo**, P.O. Box 939, Elkhart, Ind. 46514  
Flymo air-cushion rotary mower

Foamspray Chemicals, Inc., P.O. Box 20183, 2623 Perth St., Dallas, Texas 75220  
Chemical applicators (liquid)  
Soil conditioners (liquid)  
Growth aids (liquid)  
Surfactants and wetting agents  
Foaming agents (application system)

Foley Mfg. Co., 3300 Fifth St. N.E., Minneapolis, Minn. 55418  
Chain saw sharpeners  
Mowers and cutters sharpeners

**Ford Motor Co., Tractor Operations**, 2500 E. Maple, Troy, Mich. 48084

Earth augers  
Backhoes  
Blades (dozer-scraper)  
Brooms  
Brush cutters  
Cultivating disc  
Diesel and gasoline engines  
Fork lift attachment  
Graders  
Harrow (spike-toothed and spring-toothed)  
Skid steer loader  
Tractor loader  
Handling materials  
Flail mowers  
Greens mowers



- Rotary mowers
- Sickle bar mowers
- Replacement parts for mowers
- Post hole digger
- Landscaping rakes
- Gasoline chain saws
- Scrapers
- Snow thrower
- Lawn sweepers
- Tillers
- Tractors (8-151 hp)

Fore-Par, Inc., 7150 Fenwick Lane, Suite 106, Westminster, Calif. 92683

Fore-Par, tee markers, practice green markers, direction and rules signs, flags, personalized flags, tee monuments

Fox Valley Marking Systems, 31W300 West Bartlett Rd., Bartlett, Ill. 60103

Easy Marker, aerosol paint cane type object to aid in layouts for landscapers, contractors, etc.

Friend Mfg. Corp., 4441 Prospect St., Gasport, N.Y. 14067

- Arborist supplies
- Brush cutters
- Brush hooks
- Chemical applicators (liquid)
- Generators
- Hose
- Hose (spray, irrigation)
- Dust mask
- Mistblowers (truck-mounted and nozzle parts)
- Pruners
- Pumps
- Hose reels
- Respirators
- Manual saws
- Hydraulic chain saws
- Electric circular saws
- Shears
- Spray booms
- Spray guns
- Spray nozzles (complete)
- Spray boom
- Sprayers (complete power unit)
- Spray tanks
- Canvas fruit picking buckets

Fruend Can Co., 143 W. 84th St., Chicago, Ill.

Gasoline cans to meet OSHA specifications

Fuerst Brothers, Inc., P.O. Box 271, Rhinebeck, New York 12572

- Aerators
- Turf combs
- Harrow (spike-toothed)
- Landscaping rakes
- Thatchers

## G

G. & H. Products, Inc., St. Paris, Ohio 43072

Uni-Lift, motorized all-position stand for riding mowers, lifts up to 80 inches, 1,000 lb. loads, in less than 30 sec.

Game Time, Inc., The Toro Company, 903 Anderson Rd., Litchfield, Michigan 49252

Park and playground equipment, half-way houses for golf courses

Gandy Company, 528 Gandrud Road, Owatonna, Minnesota 55060

- Gandy turf tender, for fertilizer, seed or granular chemical; 42-inch width
- Gandy spreader 600 series, for fertilizer, seed or granular chemical; 3, 4, or 5-foot width

Gandy Spreader 10A series, for fertilizer, seed or granular chemical, 6, 8, 10 or 11-foot width, pull-type and tractor mounted

Gandy Spreader 1020A, for fertilizer, seed or granular chemical; 20 foot; folding

Gandy disk mount, granular applicator; 3 to 20 foot, hydraulic or mechanical drive

Gandy Ro-Hi, high clearance granular applicator; 5 to 28-inch band

Gandy line tender, granular applicator; 1 to 21-inch band, handle control

Gandy super/junior, granular applicator; 1 to 21-inch band, implement-mounted

Gandy measuring wheel, one-man land measuring in feet or meters

Garber Seeders, Inc., St. Paris, Ohio

Seeders, hopper-type

General Electric Co., Outdoor Power Equipment Operation, Corporations Park, Bldg. 702, Schenectady, N.Y. 12345

Tractors, electric/battery-powered, full line of attachments

General Scientific Equipment Co., Limekiln Pike & Williams Ave., Philadelphia, Pa. 19150

- Aprons
- Gloves
- First aid kits
- Aerosol burn spray

Giant-Vac Mfg., Inc., Machine Shop Road, South Windham, Conn. 06266

- Leaf blowers
- Chippers
- Log splitters
- Handling materials
- Tillers
- Lawn sweepers
- Thatchers
- Vacuums

Gielow Co., Inc., 3311 Sharpview Dr., Dallas, Texas 75228  
"Trim", a weed cutting-grass trimming machine which cuts with a flexible filament of nylon

Ginther Equipment Corp., 1830 Gird Rd., Fallbrook, Ca. 92028

- Park equipment
- Pruners
- Hand and hydraulic and pneumatic tools
- Trailers
- Light-hauling utility trucks
- Turf vehicles
- Control stakes and guide rope
- Clipping spreaders
- Du-Wipers
- Turf drags
- Hydraulic dump trucks and trailers
- Driving range markers and bag supports, signs and out of bounds markers

Glendale Optical Co., Inc., 130 Crossways Park Dr., Woodbury, L. I., N.Y. 11797

Hard hats, head protection gear

Goodall Div., 1405 Bunton Rd., Louisville, Ky. 40213

Goodall, mower, rotary

Gould Inc., P.O. Box 3140, St. Paul, Minn. 55165

Storage batteries

Granberg Industries, Inc., 200 So. Garrard, Richmond, California 94804

- Chain saw sharpener
- Hedge and grass parts trimmers

# ***The Davis Difference.***

***The Fleetline 20+4's articulation and instant forward/reverse turn tight spots into wide open spaces!***



## ***Even with one hand behind you, the Davis Mono-Stick makes maneuvering no contest!***

There's no better way to take on your underground chores than with the compact, highly maneuverable Fleetline 20+4.

It turns tight spots into wide open spaces to handle your trenching, plowing, backfilling and horizontal boring requirements.

This 18 hp rubber-tired trencher has 4-wheel Hydra-Static drive for instant directional change and equal speeds in either direction.

It trenches from 4" wide, 64" deep to 12" wide, 30" deep at varying speeds to match soil conditions.

The limited-slip differentials deliver equal torque to all wheels while hydraulic articulation provides a neat twist for ground-hugging traction! It handles even the toughest jobs, while you perform all functions from a single control center, where the Mono-Stick makes maneuvering no contest.

See the Fleetline 20+4 at your Davis dealer, or call Davis Manufacturing toll free — 800/835-3016, and get the total scoop on The Davis Difference!

**Davis Manufacturing**  
Division of J I Case

A Tenneco Company  
P.O. Box 1801  
Wichita, Kansas 67201



FL20-2-176R



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MM



**Grass Growers, Inc.**, P.O. Box 584, Plainfield, New Jersey 07061

Terra Tack, for erosion control, straw / hay tack and mulch binder

Gravely, Division Clarke-Gravely Corp., One Gravely Lane, Clemmons, N.C. 27012

816 4-wheel tractor, 8-spd. trans., 16 hp, Onan 2-cylinder engine (rear mounted)

812 4-wheel tractor, 8-spd. trans., 12 hp Kohler single cylinder engine (rear mounted)

810 4-wheel tractor, 8-spd. trans., 10 hp Kohler single cylinder engine (rear mounted)

408 lawn tractor, 34-inch rotary mower, 8 hp Kohler engine

7.6 hp custom 2-wheel tractor, 30" rotary mower, 40" rotary mower, 50" rotary mower

7.6 hp 2-wheel tractor, rotary tiller, rotary plow, rotary cultivator

C-10 hp commercial 2-wheel tractor, 44", 38", 36" snow-blowers, front mount 48" scraper

C-12 hp commercial 2-wheel tractor, blade, center-mount scraper blader, riding sulky for 2-wheel tractors

Greenlawn Sprinkler Co., 2200 South Lipan, Denver, Colorado 80223

Irrigation sprinklers (spray, pop-up, heads; stationary; valve in head)

Irrigation (miscellaneous accessories)

Irrigation valves (automatic, flow control)

Irrigation valves-solenoid

Adjustable risers

Manifold tees

W-W Grinder Corp., 2957 N. Market, Wichita, Kansas 67219

Chippers

Shredders

Magnetic floor, fork and road sweepers for pick-up of metal

Griswold Controls, 124 E. Dyer Road, Santa Ana, Calif. 92707

Irrigation controller/programmers

Irrigation valves (automatic)

Irrigation valves (flow control, pressure activated, and solenoid)

Ground Hog, Inc., 25010 E. 5th St., San Bernardino, Calif. 92410

Ground Hog earth drills, 3 models (portable—gas powered)

Ground Hog trencher, model T-3M (for sprinkler systems)

Grumman Aircraft Corp., S. Oyster Bay Rd., Bethpage, L.I., N.Y.

Aircraft, fixed wing

The Guildsman Co., Harrisburg, Pa.

Sprayer, pneumatic-hydraulic, self-contained

Gulf States Paper Corp., P.O. Box 3199, Tuscaloosa, Ala. 35401

Erosion control material

## H

Hadfield Sod Roller Co., 6443 Sherwood, Oxford, Mich. 48051

Sod roller

**Hahn, Inc., Turf-Ag Division**, 1625 N. Garvin St., Evansville, Indiana 47717

Aerators

Chemical applicators (granular and liquid)

Leaf blowers

Greens mowers

Reel mowers

Rotary mowers

Vertical mowers

Spray booms

Spray booms

Sprayers (complete power unit)

Hopper-type spreaders

Spray tanks

Thatchers

Tillers

W. L. Hamilton Co., 327 Lenter St., Bangor, Mich.

Spray guns

Spray nozzles (complete)

Unloader valves

**Hancor, Inc.**, P.O. Box 1047, Finlay, Ohio 45840

Drainage tubing

**Clifford B. Hannay & Son, Inc.**, 422 Maple St., Westerlo, N.Y. 12193

Hose reels

Harvestall Industries, Inc., 3 North Walnut Ave., New Hampton, Iowa 50659

Truckler, combination forklift trailer

Haynes Mfg. Co., Inc., P.O. Box 191, Livingston, Texas 77351.

Tree girdler, mechanical earth drill, wood and stump drill, brush and pruning tools, power soil sampling tools, brush saws, shredder-mowers, saw grinders, brush rakes.

Hays Mfg. Div., Zurn Industries, Inc., 12th & Plum Sts., Erie, Pennsylvania 16501

Marfaid, automatic solenoid valves

Select-O-Rain, industrial controller

Safe-T-Rain, impact and pop-up sprinklers

Hays Spray Gun Co., 98 N. San Gabriel Blvd., Pasadena, Calif.

Sprayers, hose end

Hemco Corporation, P.O. 111 N. Powell Rd., P.O. Box 210, Independence, Missouri 64051

Spray tanks

Tool box-fiberglass pick-up

Custom work-fiberglass

**Herd Seeder Company, Inc.**, P.O. Box 448, 3600 E. on U.S. 35 SE, Logansport, Indiana 46947

Chemical applicators (granular)

Hopper-type seeders

Hopper-type spreaders

**Hesston Corp.**, Lawn Equipment Division, The Toro Company, P.O. Box 39040, Indianapolis, Ind. 46239

Hesston Front-Runner—grounds maintenance tractors, model 200, 19.8 hp—model 180, 18 hp—Model 160, 16 hp; 48", 60" mowers and 80" batwing mower head, self-contained vacuum pick-up (fits 48" & 60" mower heads only). Other attachments: rotary broom, dozer, snow thrower and tillage equipment; features hydrostatic drive, articulated steering, "up-front", roomy operator cockpit Hesston stump cutter, 8 hp Briggs & Stratton engine, portable, replaceable

Hesston tractor, 16 hp, 18 hp, 20 hp; mower—rotary 48", 60", 80"; vacuum collector, snow-plow dozer blades, rotary broom, cultivators, 42" wide—disc harrow—29"-39" cutting width, aerator, 36" wide, stump cutter, stump removal to 8" below ground level

Highway Equipment Company, 616 D Ave. N.W., Cedar Rapids, Iowa 52405

Hi-Way model P, utility, hopper-type spreader body that is simply set into a truck body to convert pickup, flatbed

or dump body into spreader unit; spreads sand salt or cinders up to 40 ft; used, to spread fertilizer and lime in landscape work

Hiller Aircraft Corp., 1350 Willow Rd., Palo Alto, Calif.  
Aircraft, helicopter

Hills-Liqui System, P.O. Box 1043, Victoria, Texas 74901  
Horticultural service machine, a specialized tool for feeding, spraying, and treating plants, trees and lawn sprayers

HMC, 22131 S. Vermont, Torrance, Calif. 90502  
The Green Machine line  
Nylon cord trimmers  
Brush clearer  
Tree pruning  
Pumps  
Tillers  
Post hole diggers  
2-speed drills  
Hedge trimmers  
Edger trimmers  
Jobber  
Utility vehicle-3 wheel  
Jobmaster, utility vehicle-3 wheel

Hoffco, Inc., 25 Washington Ave., Richmond, Ind. 47374  
Hoffco, P8—power scythe, MP—brush cutter, 973—one-man post hole drill, 1000—2-man (2 cycle) post hole drill, Comet Jac-Lift, 2000 lb. winch hoist, 1100—2-man (4 cycle) post hole drill

W. J. Holland Supply, 191 W. 32nd St., Holland, Mich.  
Trailers

Holsclaw Bros., Inc., 1325 E. Virginia St., Evansville, Indiana 47711  
Trailers

Homelite, A Division of Textron, P.O. Box 7047, Charlotte, N.C. 28217  
Generators  
Pumps  
Centrifugal pumps  
Gasoline chain saws and parts

Hortiscape, Inc., 7866 Second St., Dexter, Michigan  
Hortiscape landscape border edging  
Hortiscape tree guying units

Howard Rotavator Co., Inc., P.O. Box 100, 343 South Division, Harvard, Ill. 60033  
Aerators  
Backhoes  
Tractor loaders  
Tillers

Hub States Chemical, 2000 North Illinois Street, Indianapolis, Ind. 46202  
Power dusters  
Flamethrowers (sprayers)  
Foggers  
Hose  
Insect killer  
Dust and gas masks  
Mistblowers (backpack, self-propelled, truck-mounted, nozzle parts)  
Pumps  
Hose reels  
Respirators  
Spray booms  
Spray guns  
Spray nozzles (complete)  
Spray boom  
Sprayers (cart or wheelbarrow type, and complete power unit)

Spreaders (hopper-type)  
Spray tanks

**H. D. Hudson Manufacturing Company**, 1500 N. Michigan Ave., Chicago, Illinois 60611  
Chemical applicator (granular and liquid)  
Flamethrowers (sprayers)  
Pumps  
Root-feeding rods  
Spray booms  
Spray guns  
Spray nozzles (complete)  
Sprayers (cart or wheelbarrow type, complete power unit)  
Cordless electric sprayers  
Compression sprayers

Husqvarna, Inc., 151 New World Way, South Plainfield, New Jersey 07080  
Reel mowers  
Rotary mowers  
Gasoline chain saws  
Gasoline circular saws  
Chain saws parts

Huss Sales and Service, 1929 Starr Ave., Toledo, Ohio 43605  
Stump cutter

**Hydraulic Products Co., Inc.**, 501 East 42nd, Lubbock, Texas 79404  
HPC submersible and vertical turbine pumps for deep wells and pressure booster applications for irrigation applications

Hydro-Turf, P.O. Box 3, Elk Grove, Ill. 60007  
Hydro Turf spraying equipment, sprinkler systems — above ground, seeders, portable pumps, portable generators, flexible hose and pipe, Hydro seeders and mulchers

**Hypco Division**, Lear Siegler, Inc., 375 Fifth Ave. N.W., New Brighton, Minn. 55112  
Pumps, centrifugal pumps

I

Ideal Crane Div., Bert Parkhurst & Co., 15051 E. Admiral Pl., Tulsa, Okla. 74116  
Ideal Crane, hydraulic truck crane (can be operated both electrically and by hand); 3000 lb. capacity electrically-operated crane is \$799.00; 2500 lb. capacity hand-operated crane is \$349.45; barrel chain and nursery and appliance strap available

Imperial Underground Sprinkler, 705 E. 31st St., Kansas City, Mo. 64109  
Irrigation, spray heads and controllers

Inject-O-Meter Mfg. Co., Inc., 820 Thornton, Clovis, New Mexico 88101  
Irrigation, injection equipment

Instant Shade Tree Inc., P.O. Box 45437, Houston, Texas 77045  
Hydraulic tree spade for transplanting trees

**International Harvester Co.**, 401 N. Michigan Ave., Chicago, Ill. 60611  
Blades (dozer-scraper)  
Brush cutters  
Edgers  
Diesel and gasoline engines  
Fork lifts  
Harrow (spike-toothed and spring toothed)  
Skid steer loader  
Tractor loader  
Flail mowers



Rotary mowers  
Sickle bar mowers  
Scrapers  
Snow thrower  
Lawn sweepers  
Tillers  
Tractor (8-151 and up hp)  
Tractor (crawlers)  
Light-hauling utility trucks  
Complete line of industrial tractor and equipment, truck, construction equipment, turbine engines and agricultural equipment.

**International Spike, Inc.**, 462 East High St., Lexington, Ky. 40508

No. 2000 tree and shrub food spikes  
No. 2001 evergreen food spikes  
No. 2001 fruit tree food spikes

**Irrrometer Company, Inc.**, P.O. Box 2424, Riverside, Calif. 92506

Irrigation (miscellaneous accessories)  
Moisture meters  
Soil moisture sensors  
Hermetically sealed gauge (pressure and vacuum)

**ITT Marlow**, P.O. Box 200, Midland Park, N.J. 07432  
Pumps, irrigation, portable, submersible

## J

**Jacobsen Manufacturing Co.**, 1721 Packard Ave., Racine, Wisconsin 53403

Aerators  
Blades (dozer-scraper)  
Blowers  
Turf combs  
Edgers  
Leaf blowers  
Green mowers  
Reel mowers  
Rotary mowers  
Vertical mowers and replacement parts  
Disk-type seeders  
Snow thrower  
Sod cutters  
Spikes  
Lawn sweepers  
Thatchers  
Top dressers  
Tractor (13-20 hp and 61-151 hp)  
Trailers  
Light-hauling utility truck trap rake vehicle

**Jacobsen Manufacturing Co.**, Sod-Master Div., 3456 N. Washington Ave., Minneapolis, Minn. 55412

Pipe Piper, 10, 14, 18 hp irrigation pipe pullers; bury the pipe without removing the earth—no trenching

**Jameson Corporation**, P.O. Box 15277, Charlotte, N.C. 28210  
Fiberglass "Safe Stick", fiberglass pruner poles—single sections up to 12 ft. long; fiberglass pruner poles—sectional sections up to 12 ft. long which can be locked together for any desired combination of lengths. Poles will accommodate all pruner heads; "safety yellow", color

**Jari Division**, Year A Round Cab Co. Inc., Hwy. 167 North, Mankato, Minn. 56001

Sickle bar mowers

**Jeep Corporation**, 14250 Plymouth Road, Detroit, Michigan 48232

Jeep 4-wheel drive vehicles, Jeep CJ-5/CJ-6 and Jeep Cherokee 4-wheel drive sport/utility vehicles, Jeep Wagoneer 4-wheel drive station wagons and Jeep 4-wheel drive pick-up trucks (light/medium duty)

**JLM Products & Design**, 6805 Boysenberry Way, Colorado, Springs, Colo. 80907

Soil moisture meter, tested to 12-inch depth, deeper depth units available

**Jobu Chain Saws**, P.O. Box 6023, Texarkana, Texas 75501  
Chain saws

**Johns Manville**, Ag. Turf Division (irrigation), P.O. Box 5108, Denver, Colo. 80217

Automatic controllers: Binar® Buckner-central, field and residential controllers. Pipe-P.V.C., Transite® Valves: Buckner-electric Piston, electric diaphragm, manual, Stop-Flo-Matic, quick couples, one and two piece. Sprinklers: Buckner-electric and hydraulic valve-in-head, Stop-Flo-Matic, impact drives, lawn sprays, shrubbery sprays, edger sprays, bubbler heads, drain valves. Hose swivels, hose bibs, adjustable risers. Febco® back flow devices-reduce pressure; double check valve assemblies, pressure vacuum breakers, atmospheric vacuum breakers.

**Johns Manville**, Club Car, P.O. Box 5108, Denver, Colo. 80217.

Golf car-electric and fiberglass body, aluminum frame; 4 wheels

**Johnson Hydraulic Equipment Co.**, 215 W. 78 St., Minneapolis, Minn. 55420.

Work Horse loader, for compact tractors  
Work Horse terra-blade, for compact tractors  
Work Horse forklift, for compact tractors  
Work Horse terra-comb, for compact tractors

**Johnson's Industrial Supply Co. (Jisco)** 1941 Karlin Dr., St. Louis, Mo. 63131

Earth augers

## K

**K-D Manufacturing Company**, P.O. Box 4547, Waco, Texas 76705

Edgers  
Fork lifts and attachments  
Handling materials

**F. D. Kees Mfg. Co.**, 700 Park Avenue, Beatrice, Nebraska 68310

Aerators  
Leaf blowers  
Compactors  
Rotary mowers  
Hopper-type seeders  
Shredders  
Hopper-type spreaders  
Thatchers  
Power rakes  
Travelling sprinklers

**Kemp Shredder Co.**, 1027 E. 26th St., Erie, Pa. 16505  
Shredders

**Kershaw Manufacturing Co., Inc.**, 2205 West Fairview Ave., P.O. Drawer 9328, Montgomery, Ala. 36108

Klearway, a land clearing machine for brush control

**Kinco Mfg.**, 170 North Pascal, St. Paul, Minnesota 55104

Aerators  
Brush cutters  
Turf combs  
Sickle bar and vertical mowers  
Thatchers

**King Bros. Industries**, 251 Powell Rd., Fillmore, Calif. 93015  
Flex-Riser®, flexible riser for sprinkler systems  
Sta-Stake®, sprinkler riser support

**Kirchdorfer Irrigation**, 924 Baxter Ave., Louisville, Ky. 40201  
Preassembled pumping stations for irrigation systems

Knaack Manufacturing Co., 420 East Terra Cotta Ave., Crystal Lake, Ill. 60014

Tool chests

Shelving and ladder racks all for pickup trucks vans and stake body trucks

**Kohler Co.,** Kohler, Wis. 53044

Gasoline engines

Generators

**KPS Manufacturing, Inc.,** P.O. Box 671, Bay City, Mich. 48706

Chippers; in addition to standard, trailer-mounted, engine driven, tree service and line clearing chippers, also make P.T.O. driven, tractor mounted chippers with capacity up to 4" diameter

Kubota, 300 West Caror St., Compton, Calif. 90220

Backhoes

Blades (dozer-scraper)

Tractor loaders

Rotary mowers

Post hole digger

Tillers

Tractor (8-30 hp)

Karl Kuemmerling, Inc., 4536 Lincoln Way, E., Massillon, Ohio 44646

Arborist supplies

Augers

Earth augers

Brooms

Brush cutters

Brush hooks

Chippers

Log splitters

Mistblowers (backpack and self-propelled)

Moisture meters

Pruners

Root-feeding rods

Safety belts and saddles for tree climbers

Safety equipment

Stump cutter/remover

Tree wrappings

Hedge and grass parts trimmers

L

Lakeshore Equipment & Supply Co., 10237 Berea Rd., Cleveland, Ohio 44102

Replacement parts, mowers

Golf accessories, flags, cups, etc.

Lakeside Mfg. Company, Inc., 39 E. Main St., Honeoye, N.Y. 14471

Trailers, industrial, 6 to 15-ton rated capacity

Lakes Supply Co., Inc., P.O. Box 101, Dundee, Ill. 60118

Aerators

Blowers

Boring units

Brooms

Chemical applicators (liquid)

Edgers

Gasoline engines

Hoists

Hydraulic lifts

Leaf blowers

Log splitters

Reel mowers

Rotary mowers

Sickle bar mowers

Replacement parts for mowers

Landscaping rakes

Post hole diggers

Gasoline chain saws

Hopper-type seeders

Snow thrower

Lawn sweepers

Tillers

Tractors (8-20 hp)

Drip weed roller applicator

Lancaster Pump & Mfg. Co., Inc., 1340 Manheim Pike, Lancaster, Pa. 17604

Saws, chain, five models, 8 1/2-15 lbs. weight, 12-24-inch bar lengths, manual and dual system chain oiler

Lansdowne Equipment Co. Inc., 11402 N. Broadway, Wichita, Kansas 67147

Earth augers

Backhoes

Storage batteries

Boring units

Brooms

Gasoline and diesel engines

Fork lifts and attachments

Skid steer loaders

Tractor loaders

Post hole digger

Trailers

Trencher

L. L. Larson Machine, Inc., P.O. Box 308, Princeville, Illinois 61559

Chemical applicator (granular and liquid)

Park equipment

Pumps

Seeders (hopper-type)

Spray booms

Spray guns

Spray nozzles (complete)



## BUILT TO PERFORM !



- Impact Mass Behind Each Knife For More Cutting Power.
- No Blower or Flywheel Required.
- Large Diameter Cutting Cylinder  
Statically & Dynamically Balanced For Long Life, Smooth Operation.
- Self-Locking Tapered Knives.
- Rugged, Durable Construction.

Chipper  
Specialists  
For 13 Years



**MFG. INC.**

P.O. BOX 671  
BAY CITY, MICHIGAN 48706  
(517) 684-6015



Sprayers (cart or wheelbarrow type and complete power unit)  
Spreaders (hopper-type)  
Spray tanks

Lauson Power Products, Engine Div., Tecumseh Prod. Co.,  
900 North St., Grafton, Wisc. 53024

Engines, 2 to 16 hp, vertical and horizontal shaft, trans-  
axles, transmissions, differentials, hydrostatic units

Lawn-Boy, OMC-Lincoln, P.O. Box 82409, Lincoln,  
Nebraska 68501

Lawn-Boy, solid state ignition rotary mowers, deluxe  
model rotary mowers

Lawn Medic, Inc., 10 Gates Street, Bergen, New York 14416  
Aerators

Chemical applicators (granular and liquid)

Lawnmower Parts Mfg. Co., 16400 Truman Rd.,  
Independence, Mo. 64050.

Bed knives, gears, gaskets, rollers, mower blades

**Lehara Equipment Co., Inc.**, 60 East 42nd St., New York, N.Y.  
10017

Lehara Hy-Dro Flail, hydraulic extension mower—for  
mowing behind guard rails, up and down banks

Lehard Equipment Co., Inc., Edgeboro Rd., Box 309, East  
Brunswick, N.J. 08816

Mowers (flail, boom, extension)

**The Lely Corporation**, P.O. Box 1060, Wilson, N.C. 27893

Chemical applicator (granular and liquid)

Hopper-type seeders

Sprayers (complete power unit)

Spreaders (hopper-type)

Spray tanks and tillers

Landscaping machine — Lely Turfshaper

Levco Manufacturers, Inc., P.O. Box 72, Wynne, Arkansas  
72396

Model HD50 stump grinder, a one-man stump removal  
system; operates behind a standard pickup truck (½-ton)  
or small tractor; features include industrial, water-cooled  
power unit and self-contained hydraulic system

Fred A. Lewis Company, 40 Belknap Rd., Medford, Oregon  
97501

Augers

Earth augers

Post hole digger

Electric chain saw

Winch

Chain saw attachments: winch, fair lead, snatch block,  
post hole digger, auger

Electric winch with chain saw attachment

Lewis Systems Inc., 424 Montgomery St., Watertown, Wisc.  
53094

Golf course equipment

**Lifetime Career Schools**, 2251 Barry Ave., Los Angeles, Calif.  
90064

Home study training in landscaping

Lift-Quik Mfg. Co., South Min St., Evans Mills, N. Y. 13637  
Lift-Quik, garden, golf cart, lift

**Limb-Lopper Co., Inc.**, 11845 Burke, Santa Fe Springs, Calif.  
90670

Limb-lopper: pruner, hydraulic and air; saw, chain,  
hydraulic and air

Saw, circular, hydraulic and air

Powe wrench, impact wrench, hydraulic

Powerbore, drill, hydraulic

Tamper, hydraulic

Lindell Industries, Div., of Lindell Pattern Works, 2689 S.  
10th St., Fresno, Calif. 93725

Sweepers, vacuum yard

Blower, leaf blower (windrow)

Edger/trimmer, lawn

**Lindig Manufacturing Corporation**, 1875 West County Rd., St.  
Paul, Minnesota 55113

Lindig, shredders (soil and compost)—manual and trac-  
tor fed, capacity up to 200 yards/hour; screeners  
(powered) for soil and sand; brush chippers, 7 to 160 hp,  
compact and full size for branches up to 8" in diameter,  
also PTO drive; soil treating (sterilization) systems; leaf  
shredders and compost pulverizer/mixers

Lindig Kajan, compact brush chippers, 7 to 10 hp

Lindig Concho, compost shredder/grinder

Lindig Apache, shredder/bagger for leaves and yard  
debris

Lindig log splitter

Locke Mfg. Div., Stellar Lawn Care, 1085 Connecticut Ave.,  
Bridgeport, Conn. 06607

Mowers, reel, self-propelled and riding, 30 inches to 87 in-  
ches; rotary

**Lockwood Corporation**, Box 160, Gering, Nebr. 69341

Pumps

Centrifugal pumps

Rock pickers

Spray booms

Spray guns

Sprayers (complete power unit)

Center pivot irrigation

Potato equipment

Sugar beet equipment

Dry edible bean equipment

Pecan equipment

Orchard sprayer

Loft-Kellogg Seed, Inc., 322 E. Florida St., P.O. Box 684,  
Milwaukee, Wisc. 53201

Chemical applicator (granular and liquid)

Hose

Insect killer

Irrigation sprinklers (above ground)

Landscaping rakes

All purpose rakes

Disc-type seeders

Hopper-type seeders

Soil testers

Hopper-type spreaders

All grass seed varieties and grass seed mixture

Fertilizer, chemicals and mulch products

Loft Pedigreed Seed, Inc., Chimney Rock Rd., P.O. Box 146,  
Bound Brook, N.J. 08805

Proprietary and common turf seed varieties for golf  
courses, parks, municipalities, etc.

Turf herbicides

Turf fungicides

Turf fertilizers

Lombard Power Equipment, Sales Ave., Harrison, Ohio 45030

1500 electric, saw, chain, 12-inch bar; 12 amps

Pony, saw, chain, gasoline, 12-inch bar, 6½ lbs.

Comango, saw, chain, gasoline, 16-inch bar

Super Comango, saw, chain, gasoline, ½ "anti-vibe,"  
automatic oiler

London Fog Company, 505 Brimhall Lane, Long Lake, Minn.  
55356

Foggers

Mistblowers (truck-mounted)

Ultra low volume generators for flying insect control



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30-HP Model V30 — Trenching capabilities to 18" width, to 6' depth



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30-HP Model R30 — Trenching depths to 6' plus Modularmatic versatility



Handlebar Series — Two different models available from 7-HP to 12.5-HP

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CHARLES MACHINE WORKS, INC.  
P.O. Box 66  
Perry, Oklahoma 73077





**Lumenite Electric Co.**, 2331 N. 17th Ave., Franklin Park, Ill. 60131

- Irrigation controller/programmers
- Irrigation components
- Irrigation sprinklers (above ground)
- Irrigation switches
- Liquid level controls and timers

**Lundin-Milner, Inc.**, Los Altos, Calif.

- Chippers, will handle up to 3-inch diameter material, pull-type, stationary, mounted, electric, gas, PTO powered

**Lupton Enterprises**, 32 Martha St., Tiffin, Ohio 44883

- Log splitter

## M

**Maasdam Pow'r Pull, Inc.**, 3130 No. Hollywood Way., Burbank, Calif. 91510

- Hoist
- Winch

**Magline, Inc.**, 500 Mercer St., Pinconning, Mich. 48706

- Handling materials
- Trailers
- Hand trucks
- Platform trucks
- Dockboards
- Hydraulic elevating trailers
- Hydraulic lift gates
- Utility trailers

**Mars Industries, Inc.**, 5209 West Broadway, Minneapolis, Minn. 55429

- Mars Chem-Spray, turf sprayer, 5 gal. capacity
- Suburban angle broom, tractor attachable rotary sweepers
- Suburban pick-up sweepers, tow-type turf pick-up sweepers

**Martindale Electric Co.**, 1375 Hird Ave., Cleveland, Ohio 44107

- Martindale protective mask, respiratory protection against non-toxic dusts
- Martindale protective eyeshield, one-piece eyeshield

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

- Backhoes
- Fork lifts
- Skid steer loaders
- Tractor loaders
- Tractor (8-151 hp)
- Tractor crawlers
- Earth augers
- Blades (dozer-scraper)
- Cultivating discs
- Fork lift attachment
- Rotary mowers
- Sickle bar mowers
- Post hole diggers
- Gasoline chain saws
- Scrapers
- Snow thrower
- Tillers
- Turf vehicles

**Master Mfg. Co.**, 119 Main St., P.O. Box 694, Sioux City, Iowa 51102

- Pumps
- Centrifugal pumps
- Spray booms
- Sprayers (cart or wheelbarrow type)
- Sprayers (complete power unit)

**Mathews Company**, 500 Industrial Ave., Crystal Lake, Ill. 60014

- Turf combs
- Flail mowers
- Thatchers

**Maxey Manufacturing Co., Inc.**, P.O. Box 2001, Ft. Collins, Colo. 80521

- Barela's Roller, turf seed bed prep—crushes, levels, compacts and finished
- Trailers, equipment trailers—medium duty
- Truck bodies, customized truck beds

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

- Brooms
- Chippers
- Handling materials
- Pavement marking equipment
- Self propelled pickup sweepers

**McCabe-Powers Body Co.**, 8900 Frost, St. Louis, Mo. 63134

- Aerial buckets, lifts
- Aerial platforms
- Augers
- Earth augers
- Cranes
- Hydraulic lifts
- Post hole diggers
- Forestry trucks
- Light-hauling utility trucks
- Winch

**McCulloch Corp.**, 5400 Alla Rd., Los Angeles, Calif. 90066

- Chain saws (15 models)
- Hedge trimmer
- Portable earth drill
- Portable electric generators, 1500, 2000 and 3000 watt
- Brush cutter

**McDonough Power Equipment, Inc.**, McDonough, Georgia 30253

- Mower, rotary, push-type and riding; reel, self-propelled

**Ben Meadows Co.**, 3589 Broad St., Atlanta, Ga. 30366

- Arborist supplies
- Augers
- Earth augers
- Brush cutters
- Brush hooks
- Log splitters
- Dust masks
- Backpack mistblowers
- Self-propelled mistblowers
- Moisture meter
- Pruners
- Respirators
- Safety belts and saddles for tree climbers
- Safety equipment
- Shears
- Soil testers
- Tree injectors

**Melnor, Turf Irrigation Div.**, 1 Carol Place, Moonachie, New Jersey 07074

- Shrub nozzle adapters
- Stationary spray heads
- Pop-up spray heads
- Rotary spray heads
- Pulsating spray heads
- Solenoid valves
- Time controls
- Quick coupler valves
- Pipe and fittings

Melroe Division, Gwinner, North Dakota 58040  
Melroe Bobcat, skid turn front end loader

Melroe Division, Clark Equipment Co., 112 N. University Dr., Fargo, N.D. 58102

- Earth augers
- Backhoes
- Compactors
- Fork lift attachments
- Skid steer loaders
- Handling materials
- Post hole digger
- Tree movers

Merritt Equipment Service, Inc., D/B/A Ditch Witch of Georgia, 4891 Clark Howell Hwy., College Park, Ga. 30349

- Aerial Bucket Lifts
- Augers
- Earth augers
- Backhoes
- Blades (dozer-scraper)
- Blowers
- Boring unit
- Brooms
- Brush cutters
- Compactors
- Diesel and gasoline engines
- Generators
- Hose
- Centrifugal pumps
- Gasoline and hydraulic chain saws and parts
- Trailers
- Trencher

Metro-chipper, Vestor Div., Morbark Ind., Winn, Mich. 48996  
Chippers, for large tree chipping

Mid-State Metal Casting and Mfg. Co., 2689 S. 10 St., Fresno, Calif. 93725

- Leaf blowers
- Lawn sweepers
- Vacuums

Miller Tilt Top Trailer, Inc., 450 S. & 2 St., Milwaukee, Wis. 53214

- Tilt Top®, machinery hauling trailer, changes quickly from between the wheel to over the wheel trailer
- Ramp Champ®, over-the-wheel platform trailer; both trailers available with new gooseneck hitches

Minnesota Wanner Co., 5145 Eden Ave. South, Minneapolis, Minn. 55436

- Chemical applicators (liquid)
- Hose
- Pumps
- Root-feeding rods
- Spray guns
- Spray nozzles, complete
- Sprayers (complete power Unit)
- Spray tanks
- 60" Shielded boom spray cart
- Hi-pressure cleaning units
- Mechanical invert sprayers
- Aquatic invert sprayers

Mitts & Merrill, Inc., 109 McCoskry St., Saginaw, Michigan 48601

- Chipper, brush, staggered knife pattern, swing away folding feed chute, positive safety lock pin

Mobile Aerial Towers, Inc., 2314 Bowser Avenue, Fort Wayne, Indiana 46803

- Aerial platforms

Moody Sprinkler Co., Inc., 3020 Pullman St., Costa Mesa, Calif. 92626

Rainmaster, automatic valves, electric and hydraulic  
Automatic controllers electric and hydraulic  
Sprinklers—pop-up and stationary heads

Morbark Industries, Inc., P.O. Box 1000, Winn, Mich. 48896  
Morbark Total Chiparvestor, disc type chipper reduces whole trees, limbs intact, up to 21" diameter in less than a minute

Moridge Mfg. Co., Moundridge, Kansas 67107

- The Grasshopper-riding mower; cutting width 44", 12 hp. Kohler engine, cutting height ½-5"

Mott Corp., 500 Shawmut Ave., LaGrange, Ill. 60525  
Flail mowers

MTD Products, Inc., 5389 W. 130 St., Cleveland, Ohio 44111  
Rotary vacuum shredder bagger, 5 hp, 3-state cutting action blade

Mud Cat, Div. of National Car Rental, 5501 Green Valley Dr., Minneapolis, Minn. 55431  
Weed harvester, aquatic

The F.E. Myers Co., 400 Orange St., Ashland, Ohio 44805  
Pumps  
Centrifugal pumps  
Spray booms  
Spray guns  
Spray nozzles (complete)  
Sprayers (cart or wheelbarrow type)  
Sprayers (complete power unit)

## N

National Chemsearch, 2727 Chemsearch Blvd., Irving, Texas 75062

- Roll-A-Boom sprayer

National Foam System, Inc., Parco Div., 150 Gordon Drive, Lionville, Pa. 19353

- Dragon model 180, back pack 5-gallon sprayer

National Hydro-Ax, Inc., Box 568, Owatonna, Minn. 55060  
Hydro-Ax Brush Cutter, 117 hp 4-wheel drive articulate steering and rough terrain vehicle

National Irrigation Co., 4605 SW 44th Ave., Ft. Lauderdale, Fla. 33314

- Hose (spray, irrigation)
- Centrifugal pumps
- Irrigation controller/programmers
- Irrigation components
- Irrigation pipe, risers
- Irrigation pumping stations, complete
- Irrigation sprinklers (above ground, impact, impulse pop-up heads; shrub and bubbler; spray pop-up heads; rotary pop-up heads; stationary valve in head)
- Irrigation systems, complete
- Irrigation switches
- Irrigation, sand separators
- Irrigation, miscellaneous accessories
- Irrigation valves (automatic, flow control, pressure activated, quick coupling and solenoid)

National Mower Co., 700 Raymond, St. Paul, Minn. 55116  
Reel mowers

Nelco, Inc., 2712 S.W. Freeway, Suite 118, Houston, Texas 77006

- Pipe, irrigation through microporous openings

L. R. Nelson Corp., 7719 N. Pioneer Lane, Peoria, Ill. 61614  
Irrigation controller/programmers

- Irrigation components
- Irrigation sprinkler (impact; impulse, pop-up, heads; above ground; shrub and bubbler; spray, pop-up, heads; rotary, pop-up, heads; stationary)



Irrigation, miscellaneous accessories  
Irrigation valves (automatic, flow control, pressure activated, quick coupling, and solenoid)  
Irrigation traveling sprinklers

New Draulics, Inc., 2252 South 3600 West, Salt Lake City, Utah 84119

Brush cutters  
Hydraulic and air powered tools  
Hydraulic chain saws, circular, hydraulic

Northrup Kind and Co., 1500 Jackson St. NE, Minneapolis, Minn. 55413

Grass seed and grass seed mixtures

Nunes Manufacturing, 2006 Loquot Ave., Patterson, Calif. 95363

Nunes Sod Harvester, complete mechanical sod harvester; mounted on Ford Model 4110 tractor; front cut-off and cutter assembly; will eliminate sod cutter labor; available in styles to: fold, slab, roll, sod  
Nunes Vacuum Sweeper, turf sweeper designed for sod growers; available with PTO drive or motor driven

## O

Oberdorfer Foundries, Inc., Agri, Pump Div., Thompson Rd., Syracuse, N.Y. 13201

Pumps, bronze and aluminum, rotary gear, rubber impeller, rubber cotlar, centrifugal, helical rotor

Olathe Mfg. Inc., 2nd and Mulberry, Paula, Kansas 66071

Chippers  
Log splitters  
Stump cutter/remover

Omark Industries, Inc., Oregon Saw Chain Div., 9701 S.E. McLoughlin Blvd., Portland, Ore. 97222

Oregon saw chain, saw chain and accessory items  
Oregon power mate and super-tronic saw bars  
Oregon power mate, rim and drum sprockets

Onan Division, Onan Corp., 1400 73rd Ave. NE, Minneapolis, Minn 55432

Battery chargers  
Diesel and gasoline engines  
Generators

Otis Elevator Co., Special Vehicle Div., P.O. Box 8600, Stockton, Calif. 95208

Otis Golf Car, electric, 4-wheel, 36 volts  
Otis Turf-Awl, gasoline, 3 and 4-wheel, 18 hp

Otis Materials Handling, 8000 Baker, Cleveland, Ohio  
Forklifts

## P

Pac Craft Products, Inc., 515 Schoenhaar Dr., West Bend, Wisc. 53095

"Heff-T-Herman"-vertical platform lift  
"Pac-A-Boom"-aerial bucket lift  
"Sert-A-Dump"-hydraulic dump bed

Papec Machine Co., Shortsville, N.Y. 14548  
Leaf blower

Par Aide Products Co., 296 No. Pascal St., St. Paul, Minn. 55104

Complete line of greens and tee accessories equipment including: golf ballwashers, flag poles and flags, tee towels, detergent for golf ballwashers, aluminum and plastic putting cups, hole cutters, cup setter, cup puller, rule signs, custom tee plaques, furniture for locker room and tee benches, spike rushes, sand trap rakes, etc.

Pargo, Inc., 4300 Raleigh St., Charlotte, N.C. 28205  
Vehicles; like electric golf carts

Electric personnel carriers  
Electric burden carriers

**Parker Sweeper Company**, Box 720, Springfield, Ohio 45501  
Estate Master, 3-gang sweeper for turf or large area cleanup  
Hurricane blowers, for windrowing leaves etc. for easy collection  
Trail Thatch, a large three-gang Thatch-O-Matic for dethatching large areas

Partner Industries of America, Inc., 2733 W. Fulton, Chicago, Ill. 60612

Saws, chain, six models, 10 1/2-17 lbs. weight, automatic chain oiler

Payline Division, International Harvester, 600 Woodfield, Schaumburg, Ill. 60096

Backhoes  
Blades (dozer-scraper)  
Diesel and gasoline engines  
Fork lifts  
Skid steer loaders  
Tractor loaders  
Scrapers  
Tractors (21-151 and up hp)  
Tractor crawlers

Pennwalt Corp., 3 Parkway, Philadelphia, Pa. 19102

Aquatic herbicides  
Aquathol K (liquid and granular)  
Hydrothol 47 (liquid and granular)  
Hydrothol 191 (liquid and granular)

Perma-Rain Irrigation, Inc., P.O. Box 880, Lindsay, Calif. 93247

Filter, sand, silt, algae, etc. (irrigation)  
Emitter, "E1" for irrigation—trees/shrubs; "Perma-Flo E1"  
Fogger, Perma-Rain, for tree and shrub irrigation and plant cooling

Pioneer, OMC-Lincoln, P.O. Box 82409, Lincoln, Nebraska 68501

Pioneer P 40, 4.0 cu. inch engine chain saw for professional use  
Pioneer P 20, 3.1 cu. inch displacement chain saw for casual use  
Pioneer P25, 3.1 cu. inch displacement chain saw for casual use  
Pioneer 1200 A, 3,546 cu. inch displacement chain saw for professional use  
P 50, 5.0 cu. inch engine chain saw for professional use  
Pioneer 1074, 3.1 cu. inch displacement chain saw for casual use

Piper Aircraft, Bald Eagle Street, Lock Haven, Pa. 17745  
Aircraft, fixed wing

Piqua Engineering, Inc., Box 605, Piqua, Ohio 45356  
Chippers  
Log splitters  
Shredders

Pitman Manufacturing Co., Div. A. B. Chance Co., P.O. Box 120, Grandview, Mo. 64030  
Mobilift, aerial bucket

Plasti Chain Corporation, P.O. Box 267, Hebron, Illinois 60034

Plasti-Chain and accessories

Plastiline, Inc., 1251 N.E. 45 St., Pompano Beach, Fla. 33061  
Polyethylene (plastic) fittings

Plastic Techniques, Inc., New Boston, N.H. 03070  
Plastic Techniques, aerial lift truck accessories

H. K. Porter, Inc., 74 Foley St., Somerville, Mass. 02143  
Cutters, bolt, rod, cable, chain, etc.  
Shears, lopping  
Trimmers, tree  
Shears, pruning  
Cutters, brush and root

Power Spike Mfg. Co., P.O. Box 67, Walters, Okla. 73572  
Aerators  
Spikers

Precision Chipper Corporation, Box 360, Leeds, Ala. 35094  
Chipper, heavy-duty, industrial, feed-through rate of about 125 feet per minute

Princeton Manufacturing Co., 2625 Johnstown Rd., Columbus, Ohio 43219  
Sod harvester  
Tree transplanters

Product Development International, Box 1776, Liberty, S.C. 29657

Tree injectors, complete systemic tree injection kit  
Systemic injection consultation  
Custom ordered systemic injection devices made to customer specs.

Promark Corp., P.O. Box 708, Nowalk, Ohio  
Utility turf vehicles

Proturf Division, O.M. Scott and Sons, Marysville, Ohio 43040

Aerators  
Chemical applicators (granular)  
Spreaders (hopper-type)

Proven Pumps Corp., 1440 N. Spring St., Los Angeles, Calif. 90012

Instant self-priming pumps, AC or DC-move to 300 gph

## R

RainBird Sprinkler Mfg. Corp., 7045 N. Grand, Glendora, Calif. 91724

Hose  
Hose (irrigation, spray)  
Irrigation controllers/programmers  
Irrigation components  
Irrigation pipe (risers)  
Irrigation sprinklers (above ground; impact, impulse, pop-up, heads; shrub and bubbler; spray, pop-up, heads; rotary, pop-up, heads; stationary; valve in head)  
Irrigation systems, complete  
Irrigation (miscellaneous accessories)  
Irrigation valves (automatic; flow control; pressure activated; quick coupling; solenoid)  
Spray nozzles (complete)

Rain Jet Corporation, 301 S. Flower St., Burbank, Calif. 91503

Irrigation components  
Irrigation pipe (risers)  
Irrigation sprinklers (above ground; impulse, pop-up, heads; shrub and bubbler; spray, pop-up, heads; rotary, pop-up heads; stationary)  
Irrigation systems (complete)  
Irrigation sand separators  
Irrigation (miscellaneous accessories)  
Irrigation valves (flow control; quick coupling)  
Spray nozzles (complete)

Rain-O-Mat Sprinklers, Inc., P.O. Box 151, Whittier, Calif. 90608

Rotary pop-up sprinklers  
Impact sprinklers  
Pop-up sprays, shrub sprays  
Electric valves, valve adaptors, hydraulic valves  
Automatic controllers

Valve markers  
Quick coupling valves and couplers  
Mini nozzle emitters

Raven Industries, Inc., Box 1107, Sioux Falls, S.D. 57101

Spray tanks  
Plastic pipe thread fittings  
Plastic hose barb fittings

Reach-All Manufacturing and Engineering Co., 436 Calvary Road, Duluth, Minnesota 55803

Aerial bucket lifts  
Aerial platforms  
Earth augers  
Cranes

Red Ewald Inc., P.O. Box 519, Karnes City, Texas 78118

Chemical applicators (liquid)  
Hose  
Hose (spray, irrigation)  
Mistblowers (truck-mounted and nozzle parts)  
Pumps  
Centrifugal pumps  
Hose reels  
Safety equipment  
Spray booms  
Spray guns  
Spray nozzles (complete)  
Sprayers (cart or wheelbarrow type)  
Sprayers (complete power unit)  
Spray tanks  
Trailers  
Irrigation tanks—fiberglass storage tanks

Reinco, Inc., P.O. Box 584, Plainfield, New Jersey 07061

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The W.A.N.E. Tree Feeder is a 6" long sturdy polyethylene cylinder, 1" in diameter. Placed in a pre-drilled hole through the pavement, it is equipped with a plunger and controlled-release fertilizer. Striking the plunger with a hammer forces the fertilizer into the soil. The cylinder head remains flush with the pavement surface closing the hole and preventing erosion. The controlled release fertilizer, Agriform 16-7-12 + Iron will not dissolve but softens as water penetrates. Nutrients are released in proportion to the tree's seasonal needs.

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**FREE BROCHURE**

**W.A.N.E. TREE SYSTEMS**  
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Ph. (813) 961-1060

Circle 108 on free information card



# Big John Tree Transplanter

"World's Largest Patented Tree Spade"



The Big John moves up to 10" trunk trees with a 7,000 # root ball. Twin screw trunk recommended.

**CALL (501) 362-6223**

**Bill Lindsey,**  
Exec. Vice-President, Gen. Mgr.

For Further Information

**Big John Tree Transplanter Mfg. Co., Inc.**

**P.O. Box 608**

**Heber Springs, Arkansas 72543**



## Specifications

Height closed for transporting...	13' - 13'4½"
Width closed for transporting.....	7' 11 ¾"
Root ball width.....	78"
Root ball depth.....	60"
Blade travel.....	63"

FEATURING . . .

**360° LEVELING**  
**SIMPLE CONSTRUCTION**  
**MOST PARTS STANDARD**

Its curved tracks and spoon shaped blades enable it to excavate this large root ball and remain within legal highway limits.

**U. S. Patent No. 3,775,876**

Circle 154 on free information card



# How The Big John Tree Transplanter Works



**1** The Big John Tree Transplanter is positioned to receive the tree. The spoon shaped spades and automatic locks are in an open position.



**3** The locks are closed and the digging process begins. Notice the stabilizers pictured behind the left rear tire—these stabilizers (on each side) are especially valuable in loading on soft ground.



**5**

The spoon shaped spades of this machine allow the largest amount of dirt to be lifted with the roots of the tree and still be within legal width of highway traveling.

The Big John is able to move widespread trees and shrubs. Its curved tracks open to 12' 8", thus allowing the machine to work in a limited area.



**2** As the lock remains open, the truck is positioned, so the spades surround the tree.



**4** One station operation is an important feature. Since the machine is fully hydraulic, the operator can do all his work from one position. (At this point, the spades dig into the soil.)



**6**

The tree is being removed from the ground. Notice again the one station operation of this machine.



**7**

The tree has been removed from the ground safely and efficiently. It will be lowered parallel to the ground and will be ready for transporting.

**Big John Tree Transplanter Mfg. Co., Inc.**

**CALL (501) 362-6223**

**Heber Springs, Arkansas 72543**

**Delivery in 90 days at present time.**



Mulch blowers  
Hydraulic seeding

Rental Equipment Mfg. Co., 2778 S. Tejon, Englewood, Colo. 801101

Bluebird, lawn combers, A/K/A thatchers, dethatchers, lawn rakes, renovators and vertical mowers, 4hp, 5hp, 7hp.  
Bluebird "1500", engine hoists, knockdown types  
Bluebird "3000", engine hoists, towable type  
Bluebird "Yardbird", utility crane  
Bluebird, engine stands  
Bluebird "F20B", lawn comber, compact type, 5 hp

Ridge Plastics Co., Highway 18 East, P.O. Box 2205, Jonesboro, Arkansas 72401

Biaxially oriented HD plastic pipe, sub-irrigation

Robco, Inc., 2800 Bay Road, P.O. Box 5326, Redwood City, Calif. 94063

Blowers  
Power dusters  
Hose  
Hose (spray, irrigation)  
Pumps  
Centrifugal pumps  
Sprayers (complete power units)  
Spray tanks

Rockwell International, 5001 North Rockwell Ave., Bethany, Oklahoma 73008

Rockwell Thrush Commander, agricultural aircraft, fixed wing

Rogers Bros., 100 Orchard St., Albion, Pa. 16401

Trailers

Roof Mfg., 1011 W. Howard St., Pontiac, Ill. 61764

Ranger, mower, self-propelled, tilt blade for heavy cutting, 5 hp or 7 hp, 24-inch or 26-inch cut  
Roof 400, mower, push, blade clutch, 5 hp, 21-inch or 24-inch cut, belt-driven blade

Root-Lowell Mfg. Corporation, 1000 Foreman Road, Lowell, Michigan 49331

Chemical applicators (granular and liquid)  
Flamethrower (sprayers)  
Foggers  
Pumps  
Sprayers (complete power unit)  
Line striper  
Garden sprayers (compressed air, 2-4 gallon)

Roper Corporation, 1905 W. Court St., Kankakee, Ill. 60901

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Rosco Manufacturing Co., 3118 Snelling Ave. So., Minneapolis, Minn. 55406

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Turf rollers

Roseman Mower Corporation, 2300 Chestnut Avenue, Glenview, Illinois 60025

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Landscaping rakes

Roto-Hoe Co., 100 Auburn Rd., Newberry, Ohio 44065

Shredders  
Snow throwers  
Tillers

Rowco Mfg. Co., Inc., 48 Emerald St., Keene, N.H. 03431

Brushking®, brushcutter, engine-driven

Roxy-Bonner, Inc., 200 Pioneer Rd., Huntingdon Valley, Pa. 19006

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Royer Foundry & Machine Co., 158 Pringle St., Kingston, Pa. 18704

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Chippers  
Shredders

Ryan, OMC-Lincoln, 1401 Cushman Dr., Lincoln, Nebraska 68512

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Edgers  
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Vertical mowers  
Turf rollers  
Sod cutters  
Thatchers  
Top dressers  
Turf vehicles

Joseph T. Ryerson & Son, Inc., P.O. Box 8000-A, Chicago, Ill. 60680

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## S

Sabre Saw Chain, Inc., Third Ave. and Sabre Drive, Niagara Falls, N.Y. 14304

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Rise-N-Rain, impact type pop-up  
GL-67, 2" pop-up spray type  
GL-71, 6" pop-up spray type

Safety Test & Equipment Co., Inc., P.O. Drawer 400, Shelby, North Carolina 28150

Wood/Chuck, manufacturer of Wood/Chipper capable of chipping logs up to 8" in diameter  
Safety Test, manufacturer of complete line of tree trimming and linemen's equipment

Sarlo Power Mowers, P.O. Box 1169, Ft. Meyers, Fla. 33902

High Wheels power mower

Satco-Systems Inc., 1717 Four Mile Rd. NE, Grand Rapids, Mich.

Turf-Vac self-propelled rider vacuum, fairway vacuum sweepers

Satoh Tractor c/o NEDA, P.O. Box 5025, Richmond, Va. 23220

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Schutt's Equipment Co., P.O. Box 412, Birmingham, Mich. 48009

Tree movers

Schwartz Mfg., 129 Pine Street South, Lester Prairie, Minn. 55354

Cranes  
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Selma Trailer & Mfg. Co., P.O. Box 120, Selma, Calif. 93662  
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The Skinner Irrigation Co., 2530 Spring Grove Ave., Cincinnati, Ohio 45214

Irrigation systems

R. & G. Sloane Mfg. Co., 7606 N. Clybourne Ave., Sun Valley, Calif. 91352

GSR Color Guard, PVC fittings for pipelines, sizes include 3/4-inch through 2 inches class 315 and 2 1/2 inches through 8 inches; class 200, press rated

Slope Tractor, Inc., 106 W. Ninth St., Harper, Kansas 67058

Rotary mowers  
Sickle bar mowers  
Tractor (21-150 hp)

Smith & Co., Inc., D.B., 414 Main St., Utica, N.Y. 13503

Sprayers, complete power unit

Smithco, Inc., 11 West Ave., Wayne, Pa. 19087

Red Rider, 3-wheel turf vehicle  
Top Rider, top dresser  
Little Beaver Spiker, spiker  
Easy Rider III, sand trap rake  
Lark, 110-gallon fiberglass sprayer  
Hawk 200, 200-gallon fiberglass sprayer w/Golden Eagle pump  
Hawk 300, 300-gallon fiberglass sprayer w/Golden Eagle pump  
Cardinal, 200-gallon stainless steel sprayer w/Golden Eagle pump

Smith Precision Products Co., 1299 Lawrence Dr., Newbury Park, Calif. 91320

Liquid fertilizer dispersion (measuremix)  
Irrigation, injection equipment

The Snow Company, 4350 McKinley, Omaha, Nebraska 68112

Trailer  
Turf vehicles

Soilmoisture Equipment Corp., P.O. Box 30025, Santa Barbara, Calif. 93105

Earth augers  
Irrigation (miscellaneous accessories)  
Moisture meters  
Soil testers

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

Blowers  
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Leaf blowers  
Mistblowers (backpack, self-propelled, truck-mounted, nozzle parts)  
Rotary mowers  
Sickle bar mowers  
Gasoline chain saws  
Cart or wheelbarrow type sprayers  
Tillers

Speedex Tractor Co., 367 N. Freedom St., Ravenna, Ohio 44266

Speedex tractor, 8hp, 10hp, 4hp  
Mowers rotary 36-inch, 44-inch, 50-inch

Sperry-New Holland, New Holland, Pa. 17557

Skid steer loaders  
Sickle bar mowers  
Trencher

Spray Baby, Inc., 751 N. Edmonds Dr., Carson City, Nev. 89701

Seeders, hydraulic  
Mulchers, hydraulic

Spraying Systems Co., North Avenue at Schmale Road, Wheaton, Illinois 60187

Spray nozzles, complete  
Spray guns

Sprinkler Irrigation Supply Co., 1316 Campbell Rd., Royal Oak, Michigan 48067

Hose spray irrigation  
Irrigation injection equipment  
Irrigation controller/programmers  
Irrigation components  
Irrigation pipe (risers)  
Irrigation pumping stations (complete)  
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Irrigation switches  
Irrigation sand separators  
Irrigation (miscellaneous accessories)  
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Pumps  
Centrifugal pumps

Standard Mfg. Co., 220 E. 4th St., Cedar Falls, Iowa 50613

Standard golf course equipment  
Soil testers  
Landscaping rakes  
Portable bridges

Stanley Hydraulic Tools, 13770 S.E. Ambler Road, Clackamas, Oregon 97015

Brush cutters  
Chain saws  
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Tools (hand, hydraulic)



**Stihl American, Inc.**, 107 Bauer Dr., Oakland, N.J. 07436  
Chain saws, electric and gasoline powered, saw, chain, powered  
Stihl SG-17, blower/sprayer, backpack gasoline powered  
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Stihl Brush-Cutter, brush and weed cutter, gasoline powered  
Stihl Hedge-Trimmer, hedge trimmer, gasoline powered, trim hedges and small brush and trees

**Stone Construction Equipment Co.**, 32 East Main, Honeoye, N.Y. 14471

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**Strong Mfg. Co.**, 498 Eight Mile Rd., Remus, Mich. 49340  
Whole tree chipper

**Sudbury Laboratory, Inc.**, 572 Dutton Rd., Sudbury, Mass. 01776

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Flail shredders

**Superflex Hitches**, P.O. Box 437, St. Marys, Ohio 45885  
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**Swan Hose Div., Amerace Corp.**, P.O. Box 509, Worthington, Ohio 43085

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**Sweepster**, 2810 Baker Road, Dexter, Michigan 48130

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Lawn sweepers

**Swenson Spreader & Mfg. Co.**, P.O. Box 127, Lindenwood, Illinois 61049

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**Tallman Equipment Co., Inc.**, 3825 W. 31st St., Chicago, Illinois 60623

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Chain saw sharpener  
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Winch

**TCI Power Products**, 900 Ferdil, Yankton, S.D. 57078

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Tecumseh Engines, 2 to 18 hp, 4-cycle and 2-cycle, air and liquid cooled, single and twin cylinder  
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**Teledyne Wisconsin Motor**, 1910 South 53rd St., Milwaukee, Wisconsin 53246

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**Tennant Co.**, P.O. Box 1452, 721 North Lilac Dr., Minneapolis, Minn. 55440

Power sweeper for hard surface maintenance—walks, drives, surfaced playgrounds, parking lots, tennis courts, etc.

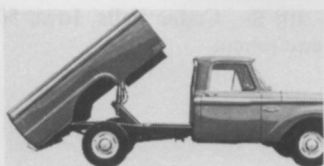
**Terrain King Corp.**, P.O. Drawer 549, Seguin, Texas 78155

Brush cutters  
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Replacement parts for mowers  
Pick-up truck attachments—rear step bumpers, grille guards, auxiliary gasoline tanks, tool or utility boxes, and headache racks  
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 Irrigation (miscellaneous accessories)  
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Tilton Equipment Co., 4612 N. Chatsworth, St. Paul, Minn. 55112

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Time Mfg. Co., 7601 Imperial Dr., Waco, Texas 76710  
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Topeka Metal Specialties Inc., 5600 S. Topeka Blvd., Box 5014, Topeka, Kansas 66605

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Mowers: Hevi-Duty-Walk rotary two 21" 4 hp both hand propelled. One is rearbagging, one has optional side bagging. Two 21" 5 hp heavy duty. One is hand propelled, other is self-propelled. One 6 hp 25" heavy duty.  
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 Turf tractor  
 Gangmowers-30" Spartans 5 or 7 blades  
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 Rake-O-Vac

Workmaster-turf truck  
 Toro Front Runner line  
 80" Batwing mower  
 GMT tractors 18 hp, 19.8 hp, 16 hp  
 Front Runner Turf Truck  
 Front Runner 3 wheeler 16, 19.8 hp.

Toro Irrigation Division, P.O. Box 489, Riverside, Calif. 92502

Irrigation controller/programmer  
 Irrigation components  
 Irrigation sprinklers (impact; shrub and bubbler; spray, pop-up, heads; rotary, pop-up, heads; valve in head)  
 Irrigation (miscellaneous accessories)  
 Irrigation valves (automatic; quick coupling valves; solenoid)  
 Back flow preventers

**Toro Technology Center—A Division of the Toro Company**, 1709 LaCosta Meadows Dr., San Marcos, Calif. 92069

Irrigation controller/programmer  
 Irrigation components  
 Irrigation sprinklers (above ground; impact; impulse, pop-up, heads; shrub and bubbler; spray, pop-up, heads; rotary, pop-up, heads; valve in head)  
 Irrigation systems (complete)  
 Irrigation (miscellaneous accessories)  
 Irrigation valves (automatic; flow control; pressure activated; quick coupling valves; solenoid)  
 Back flow preventers

Towner Mfg. Co., P.O. Box 6096, Santa Ana, Calif. 92706  
 Trenchers and harrows

Tradewinds, Inc., P.O. Box 1191, Tacoma, Washington 98401  
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 Backpack mistblowers  
 Post hole digger  
 Tillers  
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Travelrain Power Sprinkler, traveling sprinkler  
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 Rotary mowers  
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Trojan Battery Company, 9440 Ann St., Santa Fe Springs, Calif. 90670

Trojan, storage batteries—electric golf car, automotive, commercial, truck, bus, and industrial chargers

Tuco, Division of the Upjohn Co., 7000 Portage Rd., Kalamazoo, Mich. 49001

Agricultural chemicals

Turf Service Laboratory, Inc., 11762 Western Ave., Stanton, Calif. 90680

Moisture meters

Turf Vac Corporation, P.O. Box 4339, Long Beach, Calif. 90804

Turf Vac, self-propelled rider vacuum

Fairway Master, sweepers—18-25 hp with hydraulic drive systems, blower attachments, and hand pick-up hose attachments, and hydraulic lift dump available; towed units 4½' to 10' wide, 10½-25 hp or PTO; hydraulic lift dump and hand intake hoses available

## U

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Garden dusters

Flamethrowers (sprayers)

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Complete power unit sprayers

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Universal Motor Division, Medalist Industries, P.O. Box 920, Oshkosh, Wisconsin 54901

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Up-Right Scaffolds, 1013 Pardee St., Berkeley, Calif. 94710

Scaffolds, portable, aluminum for tree trimming

Utility Body Co., 901 Gilmen, Berkeley, Calif. 94710

Buckets—aerial towers

## V

Valley Products Corporation, Box 668, Valley, Nebr. 68064

VPC Stump Cutter, 8 hp one-man tree stump remover

Vandermolen Corp., 119 Dorsa Ave., Livingston, N.J. 07039

Blowers

Chemical applicators (granular and liquid)

Chippers

Power dusters

Insect killer

Leaf blowers

Backpack mistblowers

Sprayers (complete power unit)

Venue Sprinkler Sales, Inc., 3401 Conflans, Irving, Texas 75060

Pump-A-Matic, pre-built pump station for golf course, etc., irrigation

Pressure-Matic, booster pump unit to increase pressure of water in hydraulic system tubing to use potable water

Veri Products, 1252 W. Keats, Fresno, Calif. 93705

Log splitters

Rotary mowers, parts

Electric and gasoline chain saws

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Vermeer Manufacturing Company, P.O. Box 200, Pella, Iowa 50219

Earth augers

Backhoes

Blades (dozer-scraper)

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Chippers

Irrigation sprinklers (above ground)

Irrigation systems (complete)

Log splitter

Vibratory plows

Tree spade

Stump cutter/remover

Trailers

Tree movers

Trencher

Viking Pump Co., 4th and Shutte Sts., Cedar Falls, Iowa  
Pumps

Village Blacksmith, McGraw Edison Portable Electric Tool Division, 1200 East State St., Geneva, Illinois 60134

Village Blacksmith, garden cutting tools, electric chain saws, electric hedge trimmers, electric edger trimmers, electric cultivator, cord reels, "Blitz Fog" insect fogging devices, gas engine fogger, electric tree surgeon, post hole diggers and augers

Vogel Tool & Die Corp., Stone Park, Illinois

Post hole drill

## W

Waco Industries, Inc., 749 Airways Blvd., Jackson, Tenn. 38301

Chain saws

Waldon, Inc., 201 W. Oklahoma Ave., Fairview, Okla. 73737

Tractor loaders

Handling materials

Walsh Manufacturing Co., 1200 Fisher Street, Charles City, Iowa 50616

Trailer model sprayer, exclusive sump trap, exclusive uni-stand, rear safety stand 200, 300, and 500-gallon cap.; built in nylon agitator

RA side mounted sprayer, 400-gallon capacity; each tank valve controlled, 2-200 gallon tanks, custom fit mounting brackets, valve stand

3-point hitch sprayer, 165, 200, or 300-gallon capacity, Cat. II hitch pins

Fiberglass tanks (all above units), 10" x 20" fill hole; bullet-shaped ends; built in agitators, built in steel outlets; 1¼" steel sump outlet; double protection inner lining; lid with snap-over lock; special sump trap and anti-swirl baffles; continuous flow pump; sprays evenly over all terrain

Index-O-Matic Washer, completely portable; semi-pneumatic tires; all-steel frame 5 or 25-gallon tank; 3 gpm pump; 1½ hp motor; fiberglass tank

Tri-Matic II, fiberglass tank; completely portable; all-steel frame 25-gallon tank; 3 gpm pump; 1½ hp motor; semi-pneumatic tires

W.A.N.E. Tree Systems, Rt. 1, P.O. Box 68, Tampa, Florida 33612

Tree feeding system

Warren Turf Nursery, 8400 W. 111 St., Palos Park, Ill. 60464

Sod, seed and lawn food

Waymark, 44 River St., Cortland, N.Y. 13045

Spreaders, disc type

Sprayers, boom; complete power unit

Wayne Engineering Corp., 1st & Iowa Sts., Cedar Falls, Iowa 50613

Honey B, lightweight refuse packer for parks, highway rest stops, etc.

Pup, pickup refuse packer

WD-40 Company, 1061 Cudahy Pl., San Diego, Calif. 92110

WD-40: lubricant, penetrant, rust preventative, moisture displacement

Weather-matic Division/Telsco Industries, P.O. Box 18205, Dallas, Texas 75218

Irrigation controller/programmers

Irrigation components

Irrigation sprinklers (above ground; impact; impulse, pop-up, heads; shrub and bubbler; spray, pop-up, heads; rotary, pop-up, heads)

Irrigation systems complete

Irrigation (miscellaneous accessories)

Irrigation valves (automatic, quick coupling valves; solenoid)

H. N. Webster Mfg., P.O. Box 1628, Sebring, Florida 33870

Quick coupling riser irrigation valves

Rust catchers to fit under sprinklers on tall risers

**Weed Eaters, Inc.**, 5146 Richmond Ave., Houston, Texas 77027

Edgers

Trimmers for grass parts

Welsh Mfg. Co., Magnolia St., Providence, R.I. 02909

Respirators, for use in pesticide application

Ammonia respirators

Dust respirators

Goggles

Safety caps

Westinghouse Electric Vehicles, Westinghouse Bldg., Pittsburg, Pa. 15222

Electric golf cars

Wet Mfg. Co., Inc., 955 Elm St., Orange, Calif. 92667

Sprinkler irrigation equipment

**Wheel Horse Products**, 515 W. Ireland Rd., South Bend, Indiana 46614

Wheel Horse D-200 Automatic, 19.9 hp twin cylinder tractor

Wheel Horse D-180 Automatic, 18 hp twin cylinder tractor

Wheel Horse D-160 Automatic, 16 hp tractor

Wheel Horse C-160 Automatic, 16 hp tractor

Wheel Horse C-160 8-speed, 16 hp tractor

Wheel Horse C-100 8-speed, 10 hp tractor

Wheel Horse D-Series Attachments; for D-1 200 automatic, D-180 automatic and D-160 Automatic: 60" rear mount mower; 48" side discharge mid-mount mower; 56" snow/dozer blade; 50" grader blade; 50" tiller; 36" aerator; 38" or 31" lawn sweeper; 32" lawn roller; 4-wheel wagon; 2-wheel dump cart; and a 48" snowthrower

Wheel Horse C-Series Attachments, for C-160 Automatic, C-160 8-speed, C-120 automatic and C-100 8-speed: 48" side discharge mower; 42" side discharge mower; 36" side discharge mower; 36" rear discharge mower; 42" snowthrower; 56" snow/dozer blade; 42" snow/dozer blade; 40" grader blade; 36" tiller; 36" aerator; 38" or 31" lawn sweeper; 32" roller; 2-section cultivator; harrow; 32" disc; lawn vacuum; 4-wheel wagon; and a 2-wheel dump cart

Wheel Horse B-Series Attachments, for B-100 Automatic and B-80 4-speed: 36" side discharge mower; 36" rear discharge mower; 37" snowthrower; 42" snow/dozer blade; 40" grader blade; 36" aerator; 38" or 31" lawn sweeper; 32" lawn roller; 32" disc; 2-section cultivator; harrow; 36" tiller; 4-wheel wagon; and a 2-wheel dump cart

Wheel Horse A-Series Attachments, for A-800 42" snow blade; 36" aerator; 38" or 31" lawn sweeper; 32" lawn roller; 4-wheel wagon; and a 2-wheel dump cart

Wheel Power Corp., P.O. Box 21227, Phoenix, Ariz. 85036

Wheel Power Truck Tractor, two-passenger, 25 hp gas, 3,000 lb. load capacity, four-wheel drive, center articulated

steering; accessories: hydraulic dump bed can and wind-shield, hyd. blade, 3-point hitch.

White Farm Equipment, 2625 Butterfield Rd., Oak Brook, Ill. 60521

Cultivating discs

Diesel engines

Spring-toothed harrow

Tractor loaders

Gasoline chain saws

Tillers

Tractors 113-20 hp and 61-161 and up hp

Willmar Mfg. Co., Wilmar, Minn.

Spreader, pull-type, floatation tires, spreads up to 1 1/2 tons per load

Willson Products Div., ESB Inc., P.O. Box 622, Reading, Pa. 19603

Masks, gas; dust

Respirators

Safety equipment-ear muffs, ear plugs, blasting helmets, welding goggles, face masks/shields, safety spectacles, and hard hats.

**Wisconsin Marine, Inc.**, Lake Mills, Wisconsin 53551

Mowers (rotary)—21" rear bagger

36"/48" self-propelled (interchangeable mower decks)

61" riding mower

Snowthrowers-20" cutting width, 5 hp; 24" cutting width, 7 hp; 28" cutting width, 8 hp.

Wood Brothers, Inc., Hwy. 2 So., Oregon, Ill. 61061

RM 59, rear mounted rotary lawn mower; three blades cut a 5-foot swath; adapts to any standard 3-point hitch

Woods, Div. of Hesston Corp., Oregon, Ill. 61106

Backhoes

Blades (dozer-scraper)

Hoists

Rotary mowers

Vaccums

## Y

Yazoo Mfg. Co., 3607 Livingston Rd., Jackson, Miss. 39216

Edgers

Rotary mowers

Tillers

Trailers

York Modern Corporation, Mill and Watson St., Unadilla, N.Y. 13849

Graders

Landscaping and all-purpose rakes



# CROSS REFERENCE GUIDE TO MANUFACTURERS BY ITEMS

## AERATORS

Brinly Hardy Co.  
Capital Equipment Co.  
Fuerst Brothers, Inc.  
Hahn Inc., Turf-Ag. Division  
Howard Rotavator Co., Inc.  
Jacobsen Mfg. Co.  
F. D. Kees Mfg. Co.  
Kinco Mfg.  
Lakes Supply Co., Inc.  
Lawn Medic Inc.  
Power Spike Mfg. Co.  
ProTurf Div., O. M. Scott and Sons  
Ryan, OMC-Lincoln

## AERIAL BUCKET LIFTS

Causco Inc.  
Correct Mfg., Hughes Keenan Div.  
McCabe-Powers Body Co.  
Merritt Equipment Service Inc. D/B/A  
Ditch Witch of Georgia  
Pac Craft Products, Inc.  
Pitman Mfg. Co., Div. A. B.  
Chance Co.  
Plastic Techniques, Inc.  
Reach-All Mfg and Engineering Co.  
Selma Trailer & Mfg. Co.  
Time Mfg. Co.  
Utility Body Co.

## AERIAL PLATFORMS

McCabe-Powers Body Co.  
Mobile Aerial Towers, Inc.  
Pac Craft Products, Inc.  
Reach-All Mfg. and Engineering Co.

## AIRCRAFT, FIXED WING

Grumman Aircraft Corp.  
Piper Aircraft  
Rockwell International

## AIRCRAFT, HELICOPTER

Bell Helicopter Co.  
Hiller Aircraft Corp.

## AQUATIC WEED HARVESTER

Air-Lec Industries, Inc. Outdoor  
Product Div.  
A. O. A. Research & Development,  
Inc.  
Aquamarine Corp.  
Mud Cat Div. National Car Rental

## ARBORIST SUPPLIES

American Arborist Supplies  
Crown Chemicals  
The Fanno Saw Works  
Friend Mfg. Corp.  
Karl Kuemmerling, Inc.  
Ben Meadows Co.

## AUGERS

Austin Products  
Howard S. Crane, Inc.  
Ditch Witch of San Diego  
Karl Kuemmerling, Inc.  
Fred A. Lewis Co.  
McCabe-Powers Body Co.

Ben Meadows Co.  
Merritt Equipment Service Inc. D/B/A  
Ditch Witch of Georgia  
Village Blacksmith, McGraw Edison  
Portable Electric Tool Div.

## BACKHOES

Allis-Chalmers Corp.  
Arps Corp.  
Bolens: FMC Corp., OPE Div.  
J I Case, Outdoor Power  
Equipment Division  
Davis Mfg., Div. of J I Case  
John Deere and Company  
Ditch Witch Div. of The  
Charles Machine Works, Inc.  
Ditch Witch Equipment Co.  
Ditch Witch of San Diego  
Ford Tractor Operations  
Howard Rotavator Co., Inc.  
Kubota  
Lansdowne Equipment Co. Inc.  
Massey-Ferguson, Inc.  
Melroe Division, Clark  
Equipment Co.  
Merritt Equipment Service Inc. D/B/A  
Ditch Witch of Georgia  
Payline Division, International  
Harvester  
Vermeer Mfg. Co.  
Woods, Div. of Hesston Corp.

## BARRIER, AQUATIC WEEDS

Sea Guard, Inc.

## BATTERIES, STORAGE

Deere and Company  
Gould Inc.  
Lansdowne Equipment Co., Inc.  
Trojan Battery Co.

## BATTERY CHARGERS

Black and Decker Mfg. Co.  
Deere and Company  
ESB Brands, Inc.  
Onan Division of Onan Corp.

## BLADES, DOZER-SCRAPER

Austin Products  
Avco New Idea  
Bolens: FMC Corp., OPE Div.  
Brinly Hardy Co., Inc.  
E. L. Caldwell & Sons, Inc.  
J. I. Case, Outdoor Power  
Equipment Division  
Excel Industries, Inc.  
Ford Tractor Operations  
International Harvester  
Jacobsen Mfg. Co.  
Kubota  
Massey-Ferguson, Inc.  
Merritt Equipment Service Inc., D/B/A  
Ditch Witch of Georgia  
Payline Division, International  
Harvester  
Vermeer Mfg. Co.  
Woods, Div. of Hesston Corp.

## BLOWERS

Atwater Strong Div. Gougler  
Industries, Inc.  
Billy Goat Industries Inc.  
Capital Equipment Co.  
J. J. Dill Co.  
Echo Chain Saw Div., Kioritz Corp.  
of America  
E-Z Rake Inc.  
FMC Corp., Agricultural  
Machinery Div.  
Jacobsen Mfg. Co.  
Lakes Supply Co., Inc.

Merritt Equipment Service, Inc.  
Parker Sweeper Company  
Robco, Inc.  
Solo Motors, Inc.  
Stanley Hydraulic Tools  
Stihl American Inc.  
T.R.E.S., Inc.  
Vandermolen Corp.

## BORING UNIT

Davis Mfg. Div. of J I Case  
Ditch Witch Div., The Charles  
Machine Works, Inc.  
Ditch With Equipment Co.  
Ditch Witch of San Diego  
Lakes Supply Co., Inc.  
Lansdowne Equipment Co., Inc.  
Merritt Equipment Service Inc., D/B/A  
Ditch Witch of Georgia  
Vermeer Mfg. Co.

## BRIDGES, PORTABLE

Standard Mfg. Co.

## BROOMS

Ariens Co.  
Atwater Strong Div.  
Excel Industries, Inc.  
Ford Tractor Operations  
Karl Kuemmerling, Inc.  
Lakes Supply Co., Inc.  
Lansdowne Equipment Co., Inc.  
Mars Industries, Inc.  
MB Company Inc. of Wisconsin  
Merritt Equipment Services, Inc. D/B/A  
Ditch Witch of Georgia  
Rosco Mfg. Co.  
Solo Inc.  
Sweepster, Inc.

## BRUSH CUTTERS

Austin Products  
Bombardier Limited  
E. L. Caldwell & Sons, Inc.  
Echo Chain Saw Div., Kioritz Corp.  
of America  
FMC Corp., Agricultural  
Machinery Division  
Ford Tractor Operations  
Friend Mfg. Corp.  
Hoffco, Inc.  
International Harvester Co.  
Kershaw Mfg. Co., Inc.  
Kinco Mfg.  
Karl Kuemmerling, Inc.  
McCulloch Corp.  
Ben Meadows Co.  
Merritt Equipment Service Inc. D/B/A  
Ditch Witch of Georgia  
National Hydro-Ax Inc.  
New Draulics, Inc.  
H. K. Porter, Inc.  
Rowco Mfg. Co., Inc.  
Royer Foundry and Machine Co.  
Stanley Hydraulic Tools  
Stihl American, Inc.  
Stone Construction Equipment  
Sun Master Corp.  
Terrain King Corp.  
Tilton Equipment Co.

## CHEMICAL APPLICATORS, GRANULAR

Agro Care  
Avco New Idea  
John Blue Co.  
Contree Sales, Inc.  
J. J. Dill Co.  
Gandy Co.  
Hahn Inc., Turf-Ag. Div.  
Herd Seeder Company, Inc.  
H. D. Hudson Mfg. Co.

L. L. Larson Machine Inc.  
Lawn Medic, Inc.  
Lely  
Loft-Kellogg Seed, Inc.  
ProTurf Div., O. M. Scott and Sons  
Root-Lowell Corp.  
Simplex Mfg. Co.  
Vandermolen Corp.

#### CHEMICAL APPLICATORS, LIQUID

Agro Care  
Beeco Products Co.  
John Blue Co.  
The Broyhill Co.  
Cenol-Division Burgess  
Vibrocrafters Inc.  
Contree Sales, Inc.  
Crown Chemicals  
J. J. Dill Co.  
FMC Corp., Agricultural  
Machinery Division  
Foamspray Chemicals, Inc.  
Friend Mfg. Corp.  
Hahn Inc., Turf-Ag. Div.  
H. D. Hudson Mfg. Co.  
Lakes Supply Co., Inc.  
L. L. Larson Machine, Inc.  
Lawn Medic Inc.  
Lely  
Loft-Kellogg Seed, Inc.  
Minnesota Wanner Co.  
Red Ewald Inc.  
Root-Lowell Corp.  
Simplex Mfg. Co.  
Smith Precision Products Co.  
The Vandermolen Co.

#### CHIPPERS

American Arborist Supplies  
Asplundh Chipper Co. Div.  
Asplundh Tree Expert Co.  
Billy Goat Industries Inc.  
Capital Equipment Co.  
FMC Corp., Sweeper Div.  
Giant Vac Mfg. Inc.  
W-W Grinder Corp.  
KPS Mfg. Inc.  
Karl Kuemmerling, Inc.  
M-B Company Inc. of Wisconsin  
Metro-Chipper, Vestar Div.,  
Morbark Ind.  
Mitts & Merrill Inc.  
Morbark Industries, Inc.  
Olathe Mfg., Inc.  
Piqua Engineering Inc.  
Precision Chipper Corp.  
Royer Foundry & Machine Co.  
Safety Test & Equipment Co., Inc.  
Strong Mfg. Co.  
Vandermolen Corp.  
Vermeer Mfg. Co.

#### COMPACTORS

Earth Packing Industries  
F. D. Kees Mfg. Co.  
Melroe Division,  
Clark Equipment Co.  
Merritt Equipment Service, Inc.  
D/B/A Ditch Witch of Georgia  
Stone Construction Equipment Co.

#### COMBS, TURF

Fuerst Brothers, Inc.  
Jacobsen Mfg. Co.  
Johnson Hydraulic Equipment Co.,  
Kinco Mfg.  
Mathew Company  
Rental Equipment Mfg. Co.

#### CRANES

Adventure Line Mfg. Co.  
Austin Products  
Blue Bird International, Inc.

Ideal Crane Div., Bert Parkhurst  
& Co.  
McCabe-Powers Body Co.  
Reach-All Manufacturing &  
Engineering Co.  
Rental Equip. Mfg. Co.  
Schwartz Mfg. Co.

#### DISCS, CULTIVATING

Austin Products  
Brinly Hardy Co., Inc.  
Ford Tractor Operations  
Massey-Ferguson Inc.  
White Farm Equipment

#### DRAINAGE TUBING

Advanced Drainage Systems, Inc.  
Amoco Chemicals Corp.  
Industrial Products Div.  
Certain-Teed Daymond Co.  
Ditch Witch of San Diego  
Hancor, Inc.

#### DRILLS, FIELD

Ground Hog, Inc.  
Haynes Mfg. Co., Inc.  
HMC  
Limb-Lopper Co., Inc.  
McCulloch Corp.  
Tallman Equipment Co., Inc.

#### DUSTERS, POWER

John Blue Co.  
Buffalo Turbine Ag. Equip. Co.  
R. E. Chapin Mfg. Wks. Inc.  
Curtis Dyna Products Corp.  
J. J. Dill Co.  
Echo Chain Saw Division-Kioritz  
Corp. of America  
Hub States Chemical  
Robeco, Inc.  
Simplex Mfg. Co.  
T.R.E.E.S., Inc.  
Universal-Gerwin Div.,  
Leigh Products, Inc.  
Evandermolen Co.

#### EARTH AUGERS

Austin Products  
Bolens: FMC Corp.,  
OPE Division  
Contree Sales  
Ditch Witch of San Diego  
Ford Tractor Operations  
Johnson's Industrial Supply Co.  
—JISCO  
Karl Kuemmerling, Inc.  
Landsdowne Equip. Co., Inc.  
Fred A Lewis Co.  
Massey-Ferguson Inc.  
McCabe-Powers Body Co.  
Ben Meadows Co.  
Melroe Division, Clark  
Equipment Co.  
Merritt Equipment Service, Inc.  
D/B/A Ditch Witch of Georgia  
Reach-All Mfg. and  
Engineering Co.  
Soilmoisture Equipment Co.  
Stihl American Inc.  
Tallman Equipment Co., Inc.  
Tradewinds, Inc.  
T.R.E.E.S., Inc.  
Vermeer Mfg. Co.

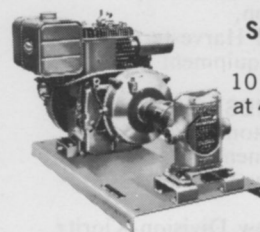
#### EDGERS

A.M.F. Lawn and Garden  
Black & Decker Mfg. Co.  
Capital Equipment Co.  
Cooper Mfg. Co.  
Excel Industries, Inc.

# Hyprow sprayer pumps

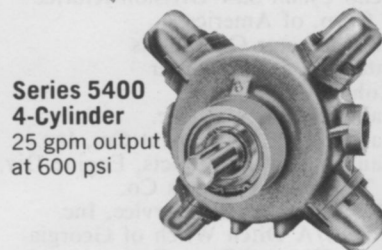
Choose from a wide range of pump designs and materials to suit your requirements: cast-iron, Ni-Resist and bronze pump housings... even nickel plating on piston pumps.

## PISTON PUMPS



**Series 5200  
Big Twin**

10 gpm output  
at 400 psi with  
6 hp engine



**Series 5400  
4-Cylinder**

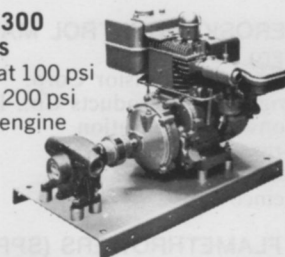
25 gpm output  
at 600 psi

## ROLLER PUMPS

Choice of rubber or nylon rollers

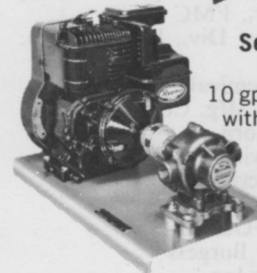
**Series 6300  
6-Rollers**

6.9 gpm at 100 psi  
6 gpm at 200 psi  
4 hp gas engine



**Series 7560C  
8-Rollers**

10 gpm at 200 psi  
with 4 hp engine



Write for complete pump catalog or request pump recommendation for your need.

**Hyprow** / **Isi**

A division of Lear Siegler, Inc.

347 Fifth Avenue NW, St. Paul, Minnesota 55112

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HMC  
Hortiscape, Inc.  
International Harvesters  
Jacobsen Mfg. Co.  
K-D Mfg. Co.  
Lakes Supply Co. Inc.  
Lindell Industries, Div. of  
Lindell Pattern Works  
Ryan, OMC-Lincoln  
Joseph T. Ryerson & Son, Inc.  
T.R.E.E.S., Inc.  
Village Blacksmith, McGraw Edison  
Portable Electric Tool Div.  
Weed Eater, Inc.  
Yazoo Mfg. Co.

#### ENGINES, DIESEL

Allis-Chalmers Corp.  
Capital Equipment Co.  
Deere and Co.  
Ford Tractor Operations  
International Harvester  
Landsdowne Equipment Co. Inc.  
Merritt Equipment Service, Inc.  
D/B/A Ditch Witch of Georgia  
Onan Division-Onan Corp.  
Payline Division,  
International Harvester  
White Farm Equipment

#### ENGINES, GASOLINE

Briggs & Stratton Corp.  
Capital Equipment Co.  
Clinton Engines Corp.  
Deere and Co.  
Echo Chain Saw Division-Kioritz  
Corp. of America  
Ford Tractor Operations  
International Harvester  
Kohler Co.  
Lakes Supply Co., Inc.  
Landsdowne Equipment Co., Inc.  
Lauson Power Products, Engine Div.  
Tecumseh Products Co.  
Merritt Equipment Service, Inc.  
D/B/A Ditch Witch of Georgia  
Onan Div., of Onan Corp.  
Payline Div. International Harvester  
Tecumseh Products  
Teledyne Wisconsin Motor

#### EROSION CONTROL MATERIALS

Agro Care  
American Excelsior Corp.  
Brighton By-Products Co., Inc.  
Conwed Corporation  
Grass Growers, Inc.  
Gulf States Paper Corp.  
Reinco Inc.

#### FLAMETHROWERS (SPRAYERS)

John Bean Div., FMC Corp.  
Echo Chain Saw Div., Kioritz Corp.  
of America  
Hub States Chemical  
H. D. Hudson Mfg. Co.  
Root-Lowell Corp.  
Universal-Gerwin Div.,  
Leigh Products, Inc.

#### FOGGERS

Cenol-Division Burgess  
Vibrocrafter Inc.  
Curtis Dyna Products Corp.  
J. J. Dill Co.  
Echo Chain Saw Div., Kioritz Corp.  
of America  
FMC Corp., Agricultural  
Machinery Div.  
Hub States Chemical  
London Fog Company

Perma-Rain Irrigation, Inc.  
Root-Lowell Corp.  
Village Blacksmith, McGraw Edison  
Portable Tool Div.

#### FORK LIFTS

Allis-Chalmers Corp.  
Deere and Company  
Harvestall Industries, Inc.  
International Harvester  
Johnson Hydraulic Equipment Co.  
K-D Mfg. Co.  
Landsdowne Equipment Co., Inc.  
Massey-Ferguson, Inc.  
Otis Materials Handling  
Payline Division,  
International Harvester  
TCI, Power Products

#### FORK LIFT (ATTACHMENT)

Allis-Chalmers Corp.  
J I Case, Outdoor Power  
Equipment Div.  
Ford Tractor Operations  
K-D Mfg. Co.  
Landsdowne Equipment Co. Inc.  
Massey-Ferguson Inc.  
Melroe Div., Clark Equipment Co.  
T. C. I. Power Products

#### GENERATORS

Allis-Chalmers Corp.  
Beard-Poulan Div.,  
Emerson Electric Co.  
Capital Equipment Co.  
Friend Mfg. Corp.  
Homelite, Division of Textron  
Kohler Co.  
London Fog Co.  
McCulloch Corp.  
Merritt Equipment Service, Inc.  
D/B/A Ditch Witch of Georgia  
Onan Div. of Onan Corp.  
Tallman Equipment Co., Inc.

#### GRADERS

Deer and Company  
DriAll, Inc.  
Ford Tractor Operations  
York Modern Corp.

#### GOLF SUPPLIES

Club Car, Inc.  
Coursigns, Inc.  
E-Z-Go Car Division Textron Inc.  
Fore-Par, Inc.  
Game Time, Inc.  
Ginther Equipment Corp.  
Johns Manville, Club Car  
Lakeshore Equipment & Supply Co.  
Lewis Systems Inc.  
Lift-Quik Mfg. Co.  
Otis Elevator Co.,  
Special Vehicle Div.  
Par Aide Products Co.  
Pargo, Inc.  
Standard Mfg. Co.  
Westinghouse Electric Vehicles

#### HARROW, SPIKE-TOOTHED

Brinly Hardy Co., Inc.  
Capital Equipment Co.  
Ford Tractor Operations  
Fuerst Brothers Inc.  
International Harvester  
Towner Mfg. Co.

#### HARROW, SPRING-TOOTHED

Allis-Chalmers  
Austin Products  
Brinly Hardy Co., Inc.

**Dedoes Industries, Inc.**  
1060 W. WEST MAPLE WALLED LAKE, MICH. 48088  
(313) 624-7710

#### DEDOES AERATOR DISTRIBUTOR LIST

<b>Alabama</b> Birmingham Montgomery	Tieco Tieco
<b>Arizona</b> Phoenix Tucson	Lawn & Garden Supply Co. Lawn & Garden Supply Co.
<b>California</b> Burlingame Sacramento San Diego	Toro Pacific Distributing Brady-Holmes Co. Toro Pacific Distributing
<b>Colorado</b> Denver	The Barteldes Co.
<b>Connecticut</b> South Windsor	Turf Products Corp.
<b>Florida</b> Hollywood Jacksonville Tampa Pensacola	Debra Turf Equipment Zaun Equipment, Inc. Debra Turf Equipment Gulf Shore Turf Supply, Inc.
<b>Georgia</b> Conyers	Lawn & Turf, Inc.
<b>Idaho</b> Boise	Cliff Carlson Co.
<b>Illinois</b> Evanston Itasca	Roseman Tractor Equipment Co. Toro Distributing
<b>Indiana</b> Fort Wayne Indianapolis	Summit Power Equipment Dist. Kenney Machinery Corp.
<b>Iowa</b> Iowa City	Little Wheels, Ltd.
<b>Kansas</b> Wichita	Champion Turf Equipment, Inc.
<b>Kentucky</b> Nashville, TN	Central South Turf, Dist., Inc.
<b>Maine</b> South Portland	Yerxa's, Inc.
<b>Maryland</b> Baltimore Silver Spring	Adams Equipment, Inc. Adams Equipment, Inc.
<b>Massachusetts</b> West Newton	The Clapper Co.
<b>Michigan</b> Birmingham Grand Rapids	W. F. Miller Garden & Lawn Equip. W. F. Miller Garden & Lawn Equip.
<b>Minnesota</b> Minneapolis	Minnesota Toro, Inc.
<b>Missouri</b> Chesterfield Kansas City Springfield	Beckmann Turf & Irrigation Supply Champion Turf Equipment, Inc. Champion Turf Equipment, Inc.
<b>Montana</b> Billings	Turf-Aid, Inc.
<b>Nebraska</b> Omaha	Midwest Toro
<b>New Jersey</b> Westfield	Storr Tractor
<b>New York</b> Brewster Hamburg Latham Syracuse	The Powerhouse Eaton Equipment Corp. Grassland Equipment & Irrigation Haverstick Golf & Tractor, Inc.
<b>North Carolina</b> Shelby	Porter Brothers
<b>Ohio</b> Tiffin	Earl J. Crane, Inc.
<b>Oklahoma</b> Oklahoma City	Paul Blakeney Company
<b>Oregon</b> Portland	Baltz & Son Co.
<b>Pennsylvania</b> Philadelphia Pittsburgh	Farm & Golf Course Supply Co. E. H. Griffith, Inc.
<b>Tennessee</b> Memphis Nashville	Turfaid, Inc. Tieco
<b>Texas</b> Dallas Houston San Antonio	Watson Distributing Co., Inc. Watson Distributing Co., Inc. Watson Distributing Co., Inc.
<b>Utah</b> Salt Lake City	Cliff Carlson Co.
<b>Virginia</b> Richmond	Richmond Power Equipment Co., Inc.
<b>Wisconsin</b> Chilton Pardeeville	Horst Distributors, Inc. Northern Turf Equipment, Inc.
<b>OUTSIDE THE U.S.</b>	
<b>Ontario</b> Burlington	Duke Lawn Equipment, Limited
<b>Quebec</b> Quebec	Spramotor, Limited
<b>Sweden</b> Rimbo	Industri Belos, AB

# **DEDOES TAKES THE WORK OUT OF AERATING**



- Aerates any green or tee in less than 20 minutes
- Collects cores to save you costly cleanup
- Adapts and quickly mounts to your all-purpose vehicle

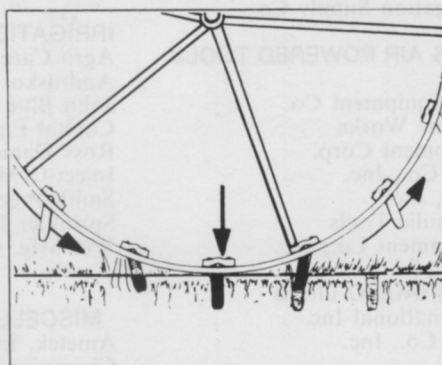
The self-contained hydraulic system lowers the unit and transfers the vehicle's weight to create the down force for necessary penetration.

- Rugged construction and engineering design saves you maintenance costs

The DEDOES Pro-TCA (Total Course Aeration) aerator replaces a team of men.

DEDOES also has a Fairways unit with the same hinged door and/or removable side plate features.

The DEDOES TCA 501 and TCA 601 give you Total Course Aeration.



## **PATENTED HINGE**

The Dedoes patented hinge principle provides near-perfect perpendicular penetration, which gives you clean 1/2" holes without the slightest tear.

**Your Turf Pro Distributor Has Details on the DEDOES TCA Line**

**DEDOES INDUSTRIES, INC.**

1060 W. WEST MAPLE RD. • WALLED LAKE, MICH. 48088 • (313) 624-7710



Capital Equipment Co.  
Ford Tractor Operations  
International Harvester  
Towner Mfg. Co.  
White Farm Equipment

#### HOISTS

Austin Products  
Bluebird International, Inc.  
Crysteel Mfg. Inc.  
Dico. Co., Inc.  
Energy Mfg. Co., Inc.  
Hoffco, Inc.  
Lakes Supply Co., Inc.  
Maasdam Pow'r Pull Inc.  
Rental Equipment Mfg. Co.  
Schwartz Mfg.  
Tallman Equipment Co., Inc.  
Terrain King Corp.  
Woods, Div. of Hesston Corp.

#### HOSE

Aeroquip Corporation  
Friend Mfg. Corp.  
Hub States Chemical  
Loft-Kellogg Seed, Inc.  
Merritt Equipment Service, Inc. D/B/A.  
Ditch Witch of Georgia  
Minnesota Wanner Co.  
Rain Bird Sprinkler Mfg. Co.  
Red Ewald, Inc.  
Robco, Inc.  
Swan Hose Div., Amerace Corp.

#### HOSE, SPRAY, IRRIGATION

American Hose & Reel Co.  
The Broyhill Co.  
Capital Equipment Co.  
J. J. Dill Co.  
FMC Corp., Agricultural  
Machinery Div.  
Friend Mfg. Co.  
Hydro-Turf  
National Irrigation Co.  
Rain Bird Sprinkler Mfg. Corp.  
Red Ewald Inc.  
Robco, Inc.  
Sprinkler Irrigation Supply Co.

#### HYDRAULIC & AIR POWERED TOOLS

Causco Inc.  
Ditch Witch Equipment Co.  
The Fanno Saw Works  
Ginther Equipment Corp.  
Limb-Lopper Co., Inc.  
New Draulics, Inc.  
Stanley Hydraulic Tools  
Tallman Equipment Co., Inc.

#### HYDRAULIC LIFTS

Bluebird International Inc.  
Lakes Supply Co., Inc.  
Magline, Inc.  
McCabe-Powers Body Co.  
Turf Vac Corp.

#### HYDRAULIC SEEDING & MULCHING MACHINES

Bowie Industries, Inc.  
Rinn Equipment Co.  
Hydro Turf  
Reinco, Inc.  
Spray Baby, Inc.

#### INSECT KILLER

Agro Care  
Cenol-Division Burgess  
Vibrocrafters, Inc.  
Contree Sales  
Crown Chemicals  
J. J. Dill Co.

The Dow Chemical Co.  
Hub States Chemical  
Loft-Kellogg Seed Inc.  
Vandermolen Corp.

#### IRRIGATION, COMPONENTS

Capital Equipment Co.  
Johns Manville-Ag Turf  
Div. (irrigation)  
Lumenite Electronic Co.  
National Irrigation Co.  
L. R. Nelson Corp.  
RainBird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
Sprinkler Irrigation Supply Co.  
Thompson Mfg. Co.  
Toro Irrigation Div.  
Toro Technology Center-Div.  
of the Toro Company  
Weather-matic Div., Telsco  
Industries  
Wet Mfg. Co., Inc.

#### IRRIGATION CONTROLLER/PROGRAMMERS

Aqua-Dial  
Griswold Controls  
Hays Mfg. Div., Zurn Industries Inc.  
Imperial Underground Sprinkler  
John Manville-Ag. Turf  
Div. (irrigation)  
Lumenite Electronic Co.  
Melnor, Turf Irrigation Div.  
Moody Sprinkler Co., Inc.  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Rain-O-Mat Sprinklers, Inc.  
Sprinkler Irrigation Supply Co.  
Superior Controls Co., Inc.  
Tork Time Controls, Inc.  
Toro Irrigation Division  
Toro Technology Center-Div.  
of the Toro Company  
Weather-Matic Div., Telsco  
Industries  
Wet Mfg. Co.

#### IRRIGATION, INJECTION EQUIPMENT

Agro Care  
Andrasko Engineering Co.  
John Blue Company  
Capital Equipment Co.  
Ross Daniels Inc.  
Inject-O-Meter Mfg. Co., Inc.  
Smith Precision Products Co.  
Sprinkler Irrigation Supply Co.  
Wet Mfg. Co., Inc.

#### IRRIGATION

##### MISCELLANEOUS ACCESSORIES

Ametek, Inc.  
Champion Brass Mfg.  
Greenlawn Sprinkler Co.  
Irrrometer Co., Inc.  
Johns Manville-Ag. Turf  
Division (irrigation)  
Melnor, Turf Irrigation Div.  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
Soilmoisture Equipment Corp.  
Sprinkler Irrigation Supply Co.  
Thompson Mfg. Co.  
Toro Irrigation Division  
Toro Technology Center-Division  
of the Toro Company  
Weather-Matic Div./Telsco  
Industries  
West Mfg. Co., Inc.

#### IRRIGATION PIPE, RISERS

Alcoa Aluminum Co. of  
America  
Amoco Chemicals Corp., Industries  
Products Div.  
Capital Equipment Co.  
Cast Iron Pipe Res. Assoc.  
Certain-Teed/Daymond Co.  
Certain-Teed Pipe &  
Plastics Group  
Cresline Plastic Pipe, Inc.  
Flintkote Co., The Pipe Products  
Div.  
Flo-Control Inc.  
Greenlawn Sprinkler Co.  
Hydro-Turf  
Jacobsen Manufacturing Co.,  
Sod-Master Div.  
Johns Manville-Ag Turf  
Div. (irrigation)  
King Bros. Industries  
Melnor, Turf Irrigation Div.  
National Irrigation Co.  
Nelco, Inc.  
Plastiline, Inc.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
Raven Industries Inc.  
Ridge Plastics Co.  
R. & G. Sloane Mfg. Co.  
Sprinkler Irrigation Supply Co.

#### IRRIGATION, PUMPING STATIONS, COMPLETE

Kirchdorfer Irrigation  
National Irrigation Co.  
Sprinkler Irrigation Supply Co.  
Venable Sprinkler Sales, Inc.  
Wet Mfg. Co., Inc.

#### IRRIGATION SPRINKLERS, ABOVE GROUND

Capital Equipment Co.  
Hydro-Turf  
Loft-Kellogg Seed, Inc.  
Lumenite Electronic Co.  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
Sprinkler Irrigation Supply Co.  
Thompson Mfg. Co.  
Toro Technology Center-Division  
of the Toro Co.  
Travelrain Power Sprinkler Co.  
Vermeer Mfg. Co.  
Weather-matic Div., Telsco Ind.  
Wet Mfg. Co., Inc.

#### IRRIGATION SPRINKLERS, IMPACT

Hays Mfg. Div., Zurn  
Industries, Inc.  
Johns Manville-Ag Turf  
Div. (irrigation)  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Rain-O-Mat Sprinklers, Inc.  
Safe-T-Lawn, Inc.  
Sprinkler Irrigation Supply Co.  
Thompson Mfg. Co.  
Toro Irrigation Division  
Toro Technology Center-Division  
of the Toro Co.  
Weather-matic Div., Telsco Ind.  
Wet Mfg. Co., Inc.

#### IRRIGATION SPRINKLERS, IMPULSE, POP-UP, HEADS

Aqua-Dial  
Capital Equipment Co.

Hays Mfg. Div. Zurn Industries, Inc.  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
Sprinkler Irrigation Supply Co.  
Thompson Mfg. Co.  
Toro Technology Center-Div. of the Toro Co.  
Weather-matic Div., Telsco Ind.  
Wet Mfg. Co., Inc.

#### **IRRIGATION SPRINKLERS ROTARY, POP-UP, HEADS**

Aqua-Dial  
Capital Equipment Co.  
Hays Mfg. Div., Zurn Industries, Inc.  
Johns Manville-Ag. Turf Div. (irrigation)  
Melnor, Turf Irrigation Div.  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
Rain-O-Mat Sprinklers, Inc.  
Safe-T-Lawn, Inc.  
Sprinkler Irrigation Supply Co.  
Thompson Manufacturing  
Toro Irrigation Division  
Toro Technology Center-Div. of the Toro Co.  
Weather-matic Div., Telsco Ind.  
Wet Mfg. Co., Inc.

#### **IRRIGATION SPRINKLERS, SHRUB AND BUBBLER**

Champion Brass Mfg.  
Johns Manville-Ag. Turf Div. (irrigation)  
National Irrigation Co.  
L. R. Nelson Mfg. Co., Inc.  
Perma-Rain Irrigation, Inc.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
Rain-O-Mat Sprinklers, Inc.  
Sprinkler Irrigation Supply Co.  
Thompson Mfg. Co.  
Toro Irrigation Division  
Toro Technology Center-Div. of the Toro Co.  
Weather-matic Div., Telsco Ind.  
Wet Mfg. Co., Inc.

#### **IRRIGATION SPRINKLERS, SPRAY, POP-UP, HEADS**

Aqua-Dial  
Capital Equipment Co.  
Greenlawn Sprinkler Co.  
Hays Mfg. Div., Zurn Industries, Inc.  
Imperial Underground Sprinkler  
Johns Manville-Ag. Turf Div. (irrigation)  
Melnor, Turf Irrigation Div.  
Moody Sprinkler Co., Inc.  
National Irrigation Co.  
L. R. Nelson Corporation  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corporation  
Rain-O-Mat Sprinklers, Inc.  
Safe-T-Lawn, Inc.  
Sprinkler Irrigation Supply Co.  
Thompson Manufacturing  
Toro Irrigation Division  
Toro Technology Center-Division of the Toro Co.  
Weather-matic Div., Telsco Ind.  
Wet Mfg. Co., Inc.

#### **IRRIGATION SPRINKLERS, STATIONARY**

Capital Equipment Co.  
Greenlawn Sprinkler Co.  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corporation  
Sprinkler Irrigation Supply Co.  
Thompson Mfg. Co.  
Toro Technology Center-Div. of the Toro Co.  
Wet Mfg. Co., Inc.

#### **IRRIGATION SPRINKLERS, VALVE IN HEAD**

Capital Equipment Co.  
Greenlawn Sprinkler Co.  
Johns Manville-Ag. Turf Div. (irrigation)  
National Irrigation Co.  
Rain Bird Sprinkler Mfg. Corp.  
Sprinkler Irrigation Supply Co.  
Toro Irrigation Div.  
Toro Technology Center-Div. of the Toro Co.  
Wet Mfg. Co., Inc.

#### **IRRIGATION, SAND SEPARATORS**

National Irrigation Co.  
Rain Jet Corp.  
Sprinkler Irrigation Supply Co.  
Wet Mfg. Co., Inc.

#### **IRRIGATION, SWITCHES**

Lumenite Electronic Co.  
National Irrigation Co.  
Sprinkler Irrigation Supply Co.  
Wet Mfg. Co., Inc.

#### **IRRIGATION SYSTEMS, COMPLETE**

Boss Irrigation Div. Consolidated Pipe Mfg.  
W. J. Holland Supply  
National Irrigation Co.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
The Skinner Irrigation Co.  
Sprinkler Irrigation Supply Co.  
Toro Technology Center-Div. of the Toro Co.  
Vermeer Mfg. Co.  
Weather-Matic Div., Telsco Ind.  
Wet Mfg. Co., Inc.

#### **IRRIGATION VALVES, AUTOMATIC**

Aqua-Dial  
Greenlawn Sprinkler Co.  
Griswold Controls  
Hays Mfg. Div., Zurn Industries, Inc.  
Moody Sprinkler Co., Inc.  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Sprinkler Irrigation Supply Co.  
Toro Irrigation Div.  
Toro Technology Center-Div. of the Toro Co.  
Weather-matic Div./Telsco Industries  
Wet Mfg. Co., Inc.

#### **IRRIGATION VALVES, FLOW CONTROL**

Flo-Control Inc.  
Greenlawn Sprinkler Co.  
Griswold Controls  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
Sprinkler Irrigation Supply Co.

Toro Technology Center-Division of the Toro Co.  
Wet Mfg. Co., Inc.

#### **IRRIGATION VALVES, PRESSURE ACTIVATED**

Griswold Controls  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Sprinkler Irrigation Supply Co.  
Toro Technology Center-Division of the Toro Co.  
Wet Mfg. Co., Inc.

#### **IRRIGATION, VALVES QUICK COUPLING**

Flo-Control Inc.  
Melnor, Turf Irrigation Div.  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
Rain-O-Mat Sprinklers, Inc.  
Sprinkler Irrigation Supply Co.  
Thompson Mfg. Co.  
Toro Irrigation Division  
Toro Technology Center-Div. of the Toro Co.  
Weather-Matic Div., Telsco Ind.  
H. N. Webster Mfg.

#### **IRRIGATION VALVES, SOLENOID**

Greenlawn Sprinkler Co.  
Griswold Controls  
Hays Mfg. Div., Zurn Industries, Inc.  
Melnor, Turf Irrigation Div.  
National Irrigation Co.  
L. R. Nelson Corp.  
Rain Bird Sprinkler Mfg. Corp.  
Sprinkler Irrigation Supply Co.  
Toro Irrigation Division  
Toro Technology Center-Div. of the Toro Co.  
Weather-Matic Div., Telsco Ind.  
Wet Mfg. Co., Inc.

#### **LEAF BLOWERS**

Air Rake Mfg. Corp.  
Allis-Chalmers Corp.  
A.M.F. Lawn and Garden  
Capital Equipment Co.  
J. J. Dill Co.  
E-Z Rake, Inc.  
FMC Corp., Agriculture Machinery Div.  
Giant-Vac Mfg. Inc.  
Hahn Inc. Turf-Ag. Div.  
Jacobsen Mfg. Co.  
F. D. Kees Mfg. Co.  
Lakes Supply Co., Inc.  
Lindell Industries, Div. of Lindell Pattern Works  
Papec Machine Co.  
Solo, Inc.  
Vandermolen Co.

#### **LEVELERS**

DriAll, Inc.  
Eversman Mfg. Co.  
York Modern Corp.

#### **LOADERS, BOOM**

Dico Co., Inc.  
T. C. I. Power Products

#### **LOADER, SKID STEER**

Clark Equipment Co.  
Davis Mfg.-Div. of J I Case  
Deere and Co.



Ford Tractor Operations  
International Harvester  
Lansdowne Equipment Co., Inc.  
Massey Ferguson Inc.  
Melroe Div., Clark Equipment Co.  
Payline Div., International  
Harvester  
Sperry-New Holland  
T. C. I. Power Products

#### **LOADERS, TRACTOR MOUNTED**

Arps Corp.  
Bolens: FMC Corp., OPE Div.  
Capital Equipment Co.  
J I Case, Outdoor Power  
Equipment Div.  
Deere and Co.  
Engineering Products Co.  
Erickson Corp.  
Ford Tractor Operations  
Howard Rotavator Co., Inc. International  
Harvester  
Johnson Hydraulic Equip. Co.  
Kubota  
Lansdowne Equipment Co., Inc.  
Massey-Ferguson, Inc.  
Melroe Div.  
Payline Div., International  
Harvester  
Schwartz Mfg.  
T. C. I. Power Products  
Waldon Inc.  
White Farm Equipment

#### **LOG SPLITTERS**

Didier Mfg. Co.  
Giant-Vac Mfg. Inc.  
Karl Kuemmerling, Inc.  
Lakes Supply Co., Inc.  
Lindig Mfg. Corp.  
Lupton Enterprises  
Ben Meadows Co.  
Olathe Mfg., Inc.  
Piqua Engineering, Inc.  
Ve-ri Products  
Vermeer Mfg. Co.

#### **MASKS, DUST**

Crown Chemicals  
J. J. Dill Co.  
Friend Mfg. Corp.  
Hub States Chemical  
Ben Meadows Co.  
Tallman Equipment Co., Inc.  
Willson Products Div., ESB Inc.

#### **MASKS, GAS**

Crown Chemicals  
J. J. Dill Co.  
Hub States Chemical  
Tallman Equipment Co., Inc.  
Willson Products Div., ESB Inc.

#### **MATERIALS, HANDLING**

Allis-Chalmers Corp.  
B.A.G. Corp.  
Ford Tractor Operations  
Giant-Vac Mfg. Inc.  
K-D Mfg. Co.  
Magline Inc.  
MB Company Inc. of  
Wisconsin  
Melroe Div., Clark Equipment Co.  
Tallman Equipment Co., Inc.  
Waldon, Inc.

#### **MISTBLOWERS, BACKPACK**

Brighton By-Products Co., Inc.  
J. J. Dill Co.  
Echo Chain Saw Div., Kioritz Corp.  
of America

Hub States Chemical  
Karl Kuemmerling Inc.  
Ben Meadows Co.  
Solo, Inc.  
Tradewinds, Inc.  
T.R.E.E.S., Inc.  
Vandermolen Corp.

#### **MISTBLOWERS, NOZZLE PARTS**

John Bean Div., FMC Corp.  
Cenol-Div., Burgess Vibro-  
crafters Inc.  
Crown Chemicals  
FMC Corp., Agricultural  
Machinery Div.  
Friend Mfg. Corp.  
Hub States Chemical  
Red Ewald Inc.  
Solo, Inc.

#### **MISTBLOWERS, SELF-PROPELLED**

Buffalo Turbine Ag.  
Equipment Co.  
Hub States Chemical  
Karl Kuemmerling, Inc.  
Bean Meadows Co.  
Solo Motors, Inc.

#### **MISTBLOWERS, TRUCK-MOUNTED**

John Beam Div., FMC Corp.  
Crown Chemicals  
J. J. Dill Co.  
FMC Corp., Ag. Machinery Div.  
Friend Mfg. Corp.  
Hub States Chemical  
London Fog Co.  
Red Ewald Inc.  
Solo, Inc.

#### **MOISTURE METERS**

AgTronics Mfg. Co.  
Howard S. Crane, Inc.  
Irrrometer Co. Inc.  
JLM Products & Design  
Karl Kuemmerling, Inc.  
Ben Meadows Co.  
Soilmoisture Equipment Corp.  
Sprinkler Irrigation Supply Co.  
Turf Service Laboratory, Inc.

#### **MOWERS, FLAIL**

BMB Company  
E. L. Caldwell & Sons, Inc.  
Capital Equipment Co.  
Deere and Co.  
Excel Industries, Inc.  
FMC Corp., Ag. Machinery Div.  
FMC Side-Winder  
Ford Tractor Operations  
International Harvester  
Lehara Equipment Co., Inc.  
Lehard Equipment Co., Inc.  
Mathews Company  
Mott Corporation  
Sun-Master, Corp.  
Terrain King Corp.

#### **MOWERS, GREENS**

Capital Equipment Co.  
Cooper Mfg. Co.  
Ford Tractor Operations  
Hahn, Inc., Turf Ag. Div.  
Jacobsen Mfg. Co.  
The Toro Company

#### **MOWERS, REEL**

A. M. F. Lawn and Garden  
Brouwer Turf Equipment Limited  
Capital Equipment Co.  
Cooper Mfg. Co.  
Hahn, Inc., Turf-Ag. Div.

Husqvarna, Inc.  
Jacobsen Mfg. Co.  
Lakes Supply Co., Inc.  
Locke Mfg. Div. Stellar Lawn Care  
McDonough Power Equipment, Inc.  
National Mower Co.  
Roseman Mower Corp.  
Roxy-Bonner, Inc.  
Sarlo Power Mowers  
Simplicity Mfg. Co.

#### **MOWERS, REPLACEMENT PARTS**

A.M.F. Lawn and Garden  
Austin Products  
Black and Decker Mfg., Co.  
Bolens: FMC Corp., OPE Div.  
Ford Tractor Operations  
Jacobsen Mfg. Co.  
Lakeshore Equipment & Supply Co.  
Lakes Supply Co., Inc.  
Lawnmower Parts Mfg. Co.  
Terrain King Corp.  
Ve-ri Products

#### **MOWERS, ROTARY**

Allis-Chalmers Corp.  
A.M.F. Lawn and Garden  
Ariens Co.  
Atlas Tool & Mfg. Co.  
Austin Products, Inc.  
Avco New Idea  
BMB Co. Inc.  
The Black & Decker Mfg. Co.  
Bolens: FMC Corp., OPE Div.  
Brillion Iron Works  
Buntion Co.  
E. L. Caldwell & Sons, Inc.  
Capital Equipment Co.  
J. I. Case Co., Outdoor Power  
Equip. Div.  
Deere and Co.  
Engineering Products Co.  
Excel Industries, Inc.  
Flymo  
FMC Corp., Outdoor Power Equip.  
Division  
FMC Corp., Side-Winder  
Ford Tractor Operations  
Goodall Div.  
Gravely Corp., Div. Clarke-Gravely  
Hahn Inc., Turf-Ag. Division  
Husqvarna, Inc.  
International Harvester  
Jacobsen Mfg. Co.  
F. D. Kees Mfg. Co.  
Kubota  
Lakes Supply Co., Inc.  
Lawn-Boy, OMC-Lincoln  
Massey-Ferguson, Inc.  
McDonough Power Equipment, Inc.  
Moridge Mfg. Co.  
Roof Mfg.  
Ryan, OMC-Lincoln  
Simplicity Mfg. Co.  
Slope Tractor, Inc.  
Solo, Inc.  
Speedex Tractor Co.  
Sun-Master Corp.  
Terrain King Corp.  
The Toro Co.  
Triumph Machinery Co.  
Wisconsin Marine, Inc.  
Wood Brothers, Inc.  
Woods, Div. of Hesston Corp.  
Yazoo Mfg. Co.

#### **MOWERS, SICKLE BAR**

Allis-Chalmers Corp.  
Capital Equipment Co.  
Deere and Co.  
Didier Mfg. Co.

# Servis machines are built with one simple idea in mind.

If you're familiar with the name, Servis, you know that we've been manufacturing rotary mowers, cutters and shredders, box scrapers, landscape rakes and rear-mounted blades for a long time. Since 1946 to be exact.

Interestingly enough, some of the first equipment we put in the field is still being used today. That's dependability.

And that kind of dependability is no accident. Servis equipment is designed to do specific jobs. And to do them better than anything else. It's also designed to last.

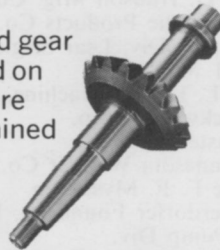
Take construction. Servis frameworks are unibody constructed to provide extra frame strength. And the high-stress areas are reinforced with heavy gauge tubing.



## To be the best.

In addition, all of our rotary cutters feature safety devices to protect the tractor and cutter drive trains.

The gears and gear box shafts used on our machines are precision machined to increase strength and durability, and reduce noise.



And Servis is one of the few lines of equipment that offers you an option of blade carriers on rotary cutters. The Cyclone (dish-pan type) for cutting up to 3" brush. And the Gyro ("A" frame type) for cutting heavy 4" brush.

Of course, this is only part of our story. The point is that Servis builds a complete line of equipment with one simple idea in mind. To be the best.

So whether you've got 4" brush to cut, stalks to shred, ditches to dig, soil to move or land to level, see your Servis dealer. He's got the equipment you need.

For more information about the Servis line, contact your nearest authorized Servis dealer, or write: Austin Products, Inc., Dept. 2-75 S, P.O. Box 1590, Dallas, Texas 75221.

**SERVIS**

**We build equipment the way we do because you wouldn't settle for less.**



AUSTIN PRODUCTS, INC. An Austin Industries Company



Engineering Products Co.  
Ferrari International Inc.  
Ford Tractor Operations  
International Harvester  
Jari Div. Year A Round  
Cab Co., Inc.  
Kinco Mfg.  
Lakes Supply Co., Inc.  
Massey-Ferguson, Inc.  
Simplicity Mfg. Co.  
Slope Tractor, Inc.  
Solo, Inc.  
Sperry-New Holland  
Thomas Equipment Ltd.  
Triumph Machinery Co.

#### **MOWERS, VERTICAL (Also See Thatcher)**

BlueBird International, Inc.  
Capital Equipment Co.  
Hahn, Inc., Turf-Ag Div.  
Jacobsen Mfg. Co.  
Kinco Mfg.  
Ryan, OMC-Lincoln

#### **MULCH BLOWERS**

A. M. F. Lawn and Garden  
Brighton By-Products Co., Inc.  
Finn Equipment Co.  
Reinco

#### **PARK EQUIPMENT**

Allis-Chalmers Corp.  
Capital Equipment Co.  
Game Time, Inc. Div. of  
the Toro Co.  
Ginther Equipment Corp.  
L. L. Larson Machine Inc.

#### **PLOWS, VIBRATORY**

Davis Mfg. Div. of J I Case  
Ditch Witch Div., the  
Charles Machine Works, Inc.  
Ditch Witch Equipment Co.  
Vermeer Mfg. Co.

#### **POST HOLE DIGGER**

Austin Products, Inc.  
Bolens: FMC Corp., OPE Div.  
E. L. Caldwell & Sons, Inc.  
Capital Equipment Co.  
Fairmont Hydraulics  
Ford Tractor Operations  
HMC  
Hoffco, Inc.  
Kubota  
Lakes Supply Co., Inc.  
Lansdowne Equipment Co., Inc.  
Fred A. Lewis Co.  
Massey-Ferguson Inc.  
McCabe-Powers Body Co.  
Melroe Div., Clark Equipment Co.  
Tallman Equipment Co., Inc.  
Tradewinds, Inc.  
Vogel Tool & Die Corp.

#### **PRUNERS**

Avco Ezee Flow Div.  
Avco New Idea  
Bartlett Mfg. Co.  
Capital Equipment Co.  
Causeco Inc.  
Corona Clipper Co.  
Fairmont Hydraulics  
The Fanno Saw Works  
Friend Mfg. Co.  
Ginther Equipment Corp.  
HMC  
Haynes Mfg. Co., Inc.  
Karl Kuemmerling, Inc.  
Limb-Lopper Co., Inc.

Ben Meadows Co.  
New Draulics, Inc.  
H. K. Porter, Inc.  
Seymour Smith & Son, Inc.  
Tallman Equipment Co., Inc.

#### **PUMPS (Also See Sprayers, Complete Power Unit)**

Ace Pump Corp.  
Aurora Pump Div., NY Air Brake  
John Blue Co.  
Contree Sales  
Crown Chemicals  
J. J. Dill Co.  
FMC Corp., Ag. Machinery Div.  
Friend Mfg. Corp.  
Hahn, Inc., Turf-Ag. Div.  
HMC  
Homelite, A Div. of Textron  
Hub States Chemical  
H. D. Hudson Mfg. Co.  
Hydraulic Products Co., Inc.  
Hypro, Div. Lear Siegler, Inc.  
ITT Marlow  
L. L. Larson Machine, Inc.  
Lockwood Corp.  
Master Mfg. Co.  
Minnesota Wanner Co.  
The F. E. Myers Co.  
Oberdorfer Foundries, Inc., Agri.  
Pump Div.  
Proven Pumps Corp.  
Red Ewald Inc.  
Robco, Inc.  
Root-Lowell Corp.  
Simplex Mfg. Co.  
Sprinkler Irrigation Supply Co.  
Tallman Equipment Co., Inc.  
Universal Motor Division  
Viking Pump Co.

#### **PUMPS, CENTRIFUGAL**

Allis-Chalmers Corp.  
Aurora Pump Div., NY Air Brake  
Beard-Poulan Div., Emerson  
Electric Co.  
Berkley Pump Co.  
John Blue Co.  
The Broyhill Co.  
Contree Sales  
J. J. Dill Co.  
FMC Corp. Agricultural  
Machinery Div.  
Homelite, A Div. of Textron  
Hypro Div./Lear Siegler, Inc.  
Lockwood Corp.  
Master Mfg. Co.  
Merritt Equipment Service, Inc. D/B/A  
Ditch Witch of Georgia  
The F. E. Myers Co.  
Oberdorfer Foundries Inc.,  
Agri. Pump Div.  
Red Ewald Inc.  
Robco, Inc.  
Simplex Mfg. Co.  
Sprinkler Irrigation Supply Co.  
Stanley Hydraulic Tools  
Tallman Equipment Co., Inc.  
Universal Motor Div., Medalist Ind.  
Viking Pump Co.

#### **RAKES, ALL PURPOSE**

Avco Ezee Flow Div.  
Howard S. Crane Inc.  
Haynes Mfg. Co., Inc.  
F. D. Kees Mfg. Co.  
Loft-Kellogg Seed, Inc.  
Tallman Equipment Co., Inc.  
York Modern Corp.

#### **RAKES, LANDSCAPING**

Arps Corp.  
Austin Products, Inc.  
Brillion Iron Works  
E-Z Rake, Inc.  
Ford Tractor Operations  
Fuerst Brothers, Inc.  
Lakes Supply Co., Inc.  
Loft-Kellogg Seed Inc.  
Roseman Mower Corporation  
Smithco, Inc.  
Standard Golf Co.  
Tallman Equipment Co., Inc.  
Triumph Machinery Co.  
York Modern Corp.

#### **REELS, HOSE**

American Hose & Reel Co.  
The Broyhill Co.  
Crown Chemicals  
Deere and Co.  
J. J. Dill Co.  
FMC Corp., Ag. Machinery Div.  
Friend Mfg. Corp.  
Clifford B. Hannay & Son, Inc.  
Hub States Chemical  
Red Ewald, Inc.

#### **RESPIRATORS**

American Optical Co.  
Brighton By-Products Co., Inc.  
Crown Chemical  
J. J. Dill Co.  
Friend Mfg. Co.  
Hub States Chemical  
Ben Meadows Co.  
Safeline Products  
Welsh Mfg. Co.  
Willson Products Div., EBS Inc.

#### **ROCK PICKERS**

Armor Metal Products  
William Bergman Co.  
Bridgeport Imple. Works, Inc.  
Howard S. Crane, Inc.  
Lockwood Corp.

#### **ROLLERS, TURF**

Brinly Hardy Co., Inc.  
Hadfield Sod Roller Co.  
Maxey Mfg. Co., Inc.  
Rosco Mfg. Co.  
Ryan, OMC-Lincoln  
Simplicity Mfg. Co.

#### **ROOT-FEEDING RODS**

Ross Daniels, Inc.  
Ferti-Feeder  
H. D. Hudson Mfg. Co.  
Karl Kuemmerling, Inc.  
Minnesota Wanner Co.

#### **SAFETY BELTS AND SADDLES, TREE CLIMBERS**

Karl Kuemmerling, Inc.  
Ben Meadows Co.  
Safety Test & Equipment Co., Inc.

#### **SAFETY EQUIPMENT**

American Optical Corp.  
J. J. Dill Co.  
General Scientific Equip. Co.  
Glendale Optical Co., Inc.  
Karl Kuemmerling, Inc.  
Martindale Electric Co.  
Ben Meadows Co.  
Red Ewald Inc.  
Safeline Products  
Tallman Equipment Co., Inc.  
Welsh Mfg. Co.  
Willson Products Div., ESB, Inc.

### SAWS, CHAIN, ELECTRIC

Beaird-Poulán Div., Emerson  
Electric Co.  
DESA Industries, Inc.  
Karl Kuemmerling, Inc.  
Jobu Chain Saws  
Fred A. Lewis Co.  
Lombard Power Equipment  
McCulloch Corp.  
Omark Industries, Inc. Oregon  
Saw Chain Div.  
Partner Industries of America Inc.  
Pioneer, OMC-Lincoln  
Roper Corp.  
Sabre Saw Chain, Inc.  
Skil Corp.  
Stihl American, Inc.  
Tallman Equipment Co., Inc.  
Tilton Equipment Co.  
Ve-ri Products  
Village Blacksmith, McGraw Edison  
Portable Electric Tool Div.  
Waco Industries, Inc.

### SAWS, CHAIN, GASOLINE

Allis-Chalmers Corp.  
Beaird-Poulán Div., Emerson  
Electric Co.  
Campbell-Hausfeld Co., Lombard  
Chain Saws  
Deere & Co.  
DESA Industries, Inc.  
Echo Chain Saw Div., Kioritz Corp.  
of America  
Ford Tractor Operations  
Homelite, Div. of Textron  
Husqvarna, Inc.  
Jobu Chain Saws  
Karl Kuemmerling, Inc.  
Lakes Supply Co., Inc.  
Landcaster Pump & Mfg. Co., Inc.  
Lombard Power Equipment  
Massey-Ferguson Inc.  
McCulloch Corp.  
Merritt Equipment Service, Inc. D/B/A  
Ditch Witch of Georgia  
Omark Industries, Inc., Oregon  
Saw Chain Div.  
Partner Industries of America Inc.  
Pioneer, OMC-Lincoln  
Roper Corp.  
Sabre Saw Chain, Inc.  
Skil Corp.  
Solo, Inc.  
Stihl American, Inc.  
Tallman Equipment Co., Inc.  
Tilton Equipment Co.  
T.R.E.E.S., Inc.  
Ve-ri Products  
Waco Industries, Inc.  
White Farm Equipment

### SAWS, CHAIN, HYDRAULIC

Causco, Inc.  
Fairmont Hydraulics  
Friend Mfg. Corp.  
Jobu Chain Saws  
Limb Lopper Co., Inc.  
McCulloch Corp.  
Merritt Equipment Service, Inc. D/B/A  
Ditch Witch of Georgia  
New Draulics, Inc.  
Omark Industries, Inc. Oregon  
Saw Chain Div.  
Partner Industries of America Inc.  
Pioneer, OMC-Lincoln  
Roper Corp.  
Sabre Saw Chain, Inc.  
Stanley Hydraulic Tools

Tilton Equipment Co.  
Waco Industries, Inc.

### SAWS, CHAIN, PARTS

Beaird-Poulán Div., Emerson  
Electric Co.  
Campbell-Hausfeld Co., Lombard  
Chain Saws  
Echo Chain Saw Div., Kioritz  
Corp. of America  
Fairmont Hydraulics  
Homelite, Div. of Textron  
Husqvarna Inc.  
Merritt Equipment Service, Inc. D/B/A  
Ditch Witch of Georgia  
Tallman Equipment Co., Inc.  
T.R.E.E.S., Inc.  
Waco Industries, Inc.

### SAWS, CIRCULAR, ELECTRIC

Friend Mfg. Corp.  
Skil Corp.  
Stihl American, Inc.  
Tallman Equipment Co., Inc.

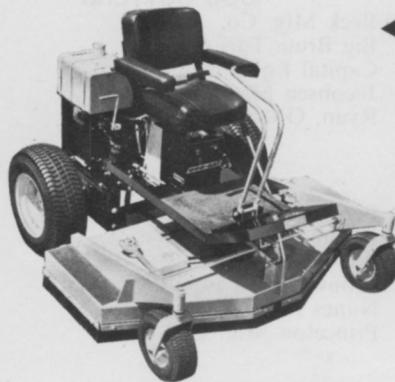
### SAWS, CIRCULAR, GASOLINE

Husqvarna Inc.  
Stihl American, Inc.  
Tallman Equipment Co., Inc.

### SAWS, MANUAL

Corona Clipper Co.  
Deere and Co.  
The Fanno Saw Works  
Friend Mfg. Corp.  
Karl Kuemmerling Inc.  
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International Harvester  
Massey-Ferguson, Inc.  
Payline Division, International  
Harvester

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Capital Equipment Co.  
Jacobsen Mfg. Co.  
Loft-Kellogg Seed, Inc.  
Simplex Mfg. Co.

## SEEDERS, HOPPER-TYPE

Allis-Chalmers Corp.  
Avco New Idea  
Brillion Iron Works  
Capital Equipment Co.  
Cyclone Seeder Co., Inc.  
Garber Seeders, Inc.  
Herd Seeder Co., Inc.  
F. D. Kees Mfg. Co.  
Lakes Supply Co., Inc.  
Lely  
L. L. Larson Machine, Inc.  
Loft-Kellogg Seed, Inc.  
Simplex Mfg. Co.

## SEEDERS, HYDRAULIC

Bowie Industries, Inc.  
Capital Equipment Co.  
Finn Equipment Co.  
Reinco, Inc.  
Simplex Mfg. Co.  
Spray Baby, Inc.

## SHARPENER, CHAIN SAW

Foley Mfg. Co.  
Granberg Industries Inc.  
Karl Kuemmerling, Inc.  
Tallman Equipment Co., Inc.  
Travelrain Power Sprinkler Co.  
T.R.E.E.S., Inc.  
Ve-ri Products

## SHARPENER, MOWERS & CUTTERS

Foley Mfg. Co.  
Tallman Equipment Co., Inc.  
Travelrain Power Sprinkler Co.

## SHEARS

Black & Decker  
Corona Clipper Co.  
Friend Mfg. Co.  
Karl Kuemmerling, Inc.  
Ben Meadows Co.  
H. K. Porter, Inc.  
Seymour Smith & Son, Inc.

## SHREDDERS

(Also See Chippers)

Atlas Tool and Mfg. Co.  
Austin Products  
Capital Equipment Co.  
W-W Grinder Corp.  
Haynes Mfg. Co., Inc.  
F. D. Kees Mfg. Co.  
Kemp Shredder Co.  
Lindig Mfg. Co.  
MTD Products, Inc.  
Piqua Engineering Inc.  
The Roto-Hoe Co.

Royer Foundry & Machine Co.  
Sun Master Corp.

## SNOW THROWER

Allis-Chalmers Corp.  
A.M.F. Lawn and Garden  
Atlas Tool and Mfg. Co.  
Avco New Idea  
Bolens: FMC Corp., OPE Div.  
J. I. Case Co., Outdoor Power  
Equip. Div.  
Deere & Co.  
Engineering Products Co.  
Excel Industries Inc.  
Ferrari International Inc.  
FMC Corp., Outdoor Power  
Equip. Div.  
Ford Tractor Operations  
Gravely Corp., Div. Clarke-Gravely  
International Harvester  
Jacobsen Mfg. Co.  
Lakes Supply Co., Inc.  
Massey-Ferguson, Inc.  
The Roto-Hoe Co.  
Sweepster, Inc.  
Wisconsin Marine, Inc.

## SOD CUTTERS

Beck Mfg. Co.  
Big Brute Turf Cut  
Capital Equipment Co.  
Jacobsen Mfg. Co.  
Ryan, OMC-Lincoln

## SOD HARVESTERS

Beck Mfg. Co.  
Bermuda King, Inc.  
Big "J" Products  
Brouwer Turf Equipment Ltd.  
Nunes Mfg.  
Princeton Mfg. Co.

## SOIL TESTERS

Agro Care  
Brighton By-Products Co., Inc.  
Capital Equipment Co.  
Contree Sales  
Loft-Kellogg Seed, Inc.  
Ben Meadows Co.  
Soilmoisture Equipment Corp.  
Standard Golf Co.  
Sudury Laboratory

## SPADE, TREE

Instant Shade Tree Inc.  
Tallman Equipment Co., Inc.  
Vermeer Mfg. Co.

## SPIKERS

Jacobsen Mfg. Co.  
Power Spike Mfg. Co.  
Smithco, Inc.

## SPRAY BOOMS

Agro Care  
John Blue Company  
The Broyhill Co.  
Contree Sales  
J. J. Dill Co.  
FMC Corp., Ag. Machinery Div.  
Friend Mfg. Corp.  
Hahn Inc., Turf-Ag. Div.  
Hub States Chemical

H. D. Hudson Mfg. Co.  
L. L. Larson Machine, Inc.  
Lockwood Corp.  
Master Mfg. Co.  
The F. E. Myers Co.  
Red Ewald, Inc.  
Simplex Mfg. Co.  
Waymark

## SPRAY GUNS

Agro Care  
Bar-Way Mfg. Co.  
The Broyhill Co.  
Campbell Hausfeld Co., Lombard  
Chain Saw  
Contree Sales, Inc.  
Crown Chemicals  
J. J. Dill Co.  
FMC Corp., Ag. Machinery Div.  
Friend Mfg. Corp.  
W. L. Hamilton Co.  
Hub States Chemical  
H. D. Hudson Mfg. Co.  
L. L. Larson Machine, Inc.  
Lockwood Corp.  
F. E. Myers Co.  
Minnesota Wanner Co.  
Red Ewald Inc.  
Spraying Systems Co.

## SPRAY NOZZLES, COMPLETE

Agro Care  
Beeco Products Co.  
Bete Fog Nozzle, Inc.  
The Broyhill Co.  
Campbell Hausfeld Co.  
Contree Sales  
Crown Chemicals  
Deere and Co.  
Delavan Mfg. Co.  
J. J. Dill Co.  
FMC Corp. Agri. Machinery Div.  
Friend Mfg. Corp.  
W. L. Hamilton Co.  
Hub States Chemical  
H. D. Hudson Mfg. Co.  
L. L. Larson Machine, Inc.  
Minnesota Wanner Co.  
F. E. Myers Co.  
Rain Bird Sprinkler Mfg. Corp.  
Rain Jet Corp.  
Red Ewald Inc.  
Simplex Mfg. Co.  
Spraying Systems Co.

## SPRAYERS, CART OR WHEELBARROW TYPE

Argo Care  
John Blue Co.  
The Broyhill Co.  
Campbell Hausfeld Co.  
Capital Equipment Co.  
Century Engineering Corp.  
Crown Chemicals  
J. J. Dill Co.  
FMC Corp., Ag. Machinery Div.  
Hub States Chemical  
H. D. Hudson Mfg. Co.  
L. L. Larson Machine, Inc.  
Master Mfg. Co.  
Minnesota Wanner Co.  
F. E. Myers Co.  
Red Ewald, Inc.  
Smithco, Inc.  
Solo, Inc.  
Universal-Gerwin Div. Leigh  
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## **Bolens® HT-20 Tractor.**

Jobs too small for big specialized equipment can add up to a punishing expense in manpower. Hauling. Mowing. Tilling. Grading. Loading. Trenching. Backfilling.

The intermediate size Bolens HT-20 Tractor can cut that expense by quickly adapting to over a dozen custom matched attachments including mower, tiller, bucket loader, back hoe, rakes, blades and brooms.

The foot operated hydrostatic transmission goes from forward to reverse without clutching or changing gears. Perfect for close-quarters work. Allows optimum power/speed combinations with hands free to operate hydraulics.

More than just a lawn and garden tractor, the HT-20 is powered by a 19.5 hp twin cylinder Kohler engine. The channeled steel frame, massive rear axle/differential and heavy duty front axle give a full day's work. Day after day.

Get more value from your big horsepower and expensive manpower. With the rugged HT-20. It fits right in-between. To save money on both ends.



## **Bolens Mulching Mowers.™**

They cut the grass and the workload. In one pass. When a Bolens Mulching Mower cuts the grass, it also cuts and recuts the clippings into tiny particles that are blown down into the turf. There, they disappear and quickly decompose. No clippings. No clean-up. No thatch build-up. The fine mulch actually feeds the turf while the crew moves on to other jobs.\*

3, 4 and 5 hp models are specially built for commercial and institutional use. Straight-thru steel axles, rugged all-steel deck, tough one-piece handle and positive cutting height adjustment. Bolens Mulching Mowers. Tough, economical answers to your continuing turf maintenance program.

\*For a free copy of a University study on nitrogen return, contact FMC Corporation, Port Washington, Wisconsin 53074.

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Products



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Model 21F35 illustrated

**POWERMOW**  
NEW!

New from F. D. Kees, this powerful 21" mower with heavy 12 gauge steel deck and frame is built to stand up under rough use and keep on working year after year.

- Choice of 4 cycle, 3.5 or 5 hp Briggs & Stratton engine with high inertia flywheel.
- Heavy gauge steel handle folds down without tools for easy transport and storage. Rigid "T" type handle also available.
- Special one-piece, suction-lift blade with tempered cutting edges. Adjustable cutting heights 1 to 3.5 inches.
- Heavy-duty steel wheels with grease fitting and sealed ball bearings. 8 x 1.75 tires.
- Special crankshaft protector. Oil minder for visual oil check.
- Extra large 1½ bushel nylon bag grass catcher available.

Model FN 100

**POWERRAKE®**  
(THATCHER)



- Rakes out thatch ■ Rakes cleaner with less effort. Powerful 5 hp engine.
- Cleans 20" swath ■ 28 hardened steel plate, self-cleaning fingers
- Raking assemblies interchangeable with aerator assembly ■ 2" raking height adjustment ■ Semi self-propelled



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Buffalo Turbine Ag. Equip Co.  
Campbell Hausfeld Co.  
Capital Equipment Co.  
R. E. Chapin Mfg. Works, Inc.  
Contree Sales  
Howard S. Crane, Inc.  
Crown Chemicals  
Curtis Dyna Products Corp.  
J. J. Dill Co.  
Edwards Mfg. Co.  
Ferrari International Inc.  
Fimco, Inc.  
FMC Corp., Ag. Machinery Div.  
Friend Mfg. Corp.  
The Guildsman Co.  
Hahn Inc., Turf-Ag. Div.  
Hays Spray Gun Co.  
Hills Liqui System  
Hub States Chemical  
H. D. Hudson Mfg. Co.  
Hydro Turf  
L. L. Larson Machine, Inc.  
Lely  
Lockwood Corp.  
Mars Industries Inc.  
Master Mfg. Co.  
Minnesota Wanner Co.  
F. E. Myers Co.  
National Chemsearch  
National Foam System, Inc.  
Red Ewald, Inc.  
Robco, Inc.  
Root-Lowell Corp.  
Simplex Mfg. Co.  
Smith & Co., Inc. D. B.  
Tradewinds, Inc.  
Tree Ject Company  
Universal-Gerwin Div., Leigh  
Products, Inc.  
The Vandermolen Corp.  
Walsh Mfg. Co.  
Waymark

## SPREADERS, HOPPER-TYPE

Arctic Mizer Mfgs., Inc.  
John Blue Co.  
Howard S. Care, Inc.  
The Cyclone Seeder Co., Inc.  
J. J. Dill Co.  
Dobbins, Inc.  
Gandy Co.  
Ginther Equipment Corp.  
Hahn Inc., Turf-Ag. Div.  
Herd Seeder Co., Inc.  
Highway Equipment Co.  
Hub States Chemical  
F. D. Kees Mfg. Co.  
L. L. Larson Machine, Inc.  
Lely  
Loft-Kellogg Seed, Inc.  
Proturf Div., O. M. Scott  
and Sons  
Swenson Spreader & MFG. Co.  
Waymark  
Willmar Mfg. Co.

## STUMP CUTTER/REMOVER

FMC Corp., Sweeper Div.  
Hesston Corp., Lawn Equipment  
Div., The Toro Co.  
Huss Sales and Service  
Karl Kuemmerling, Inc.  
Levco Mfg., Inc.  
Olathe Mfg., Inc.

Valley Products Corp.  
Vermeer Mfg. Co.

## SWEEPERS, LAWN (Also See Broom, Vacuum)

A.M.F. Lawn and Garden  
Atwater Strong Div., Gougler  
Industries, Inc.  
Avco New Idea  
Brinly Hardy Co., Inc.  
Capital Equipment Co.  
J I Case, Outdoor Power  
Equipment Division  
Clark Div., Clarke-Gravelly Corp.  
Excel Industries, Inc.  
E-Z Rake Inc.  
Ford Tractor Operations  
Giant-Vac Mfg. Inc.  
W-W Grinder Corp.  
International Harvester  
Jacobsen Mfg. Co.  
Lakes Supply Co., Inc.  
Lindall Industries, Div. of  
Lindell Pattern Works  
Mars Industries, Inc.  
M-B Company of Wisconsin  
Mid-State Metal Casters & Mfg. Co.  
Nunes Mfg.  
Parker Sweeper Co.  
Sweepster, Inc.  
Tennant Co.  
Turf Vac Corp.

## TANKS, SPRAY

Agro Care  
John Blue Co.  
The Broyhill Co.  
Capital Equipment Co.  
Contree Sales  
Crown Chemicals  
J. J. Dill Co.  
FMC Corp., Ag. Machinery Div.  
Friend Mfg. Corp.  
Hahn Inc., Turf-Ag. Div.  
Hemco Corp.  
Hub States Chemical  
L. L. Larson Machine, Inc.  
Lely  
Raven Industries, Inc.  
Red Ewald, Inc.  
Robco, Inc.  
Simplex MFG. Co.  
Universal-Gerwin Div., Leigh  
Products Inc.

## THATCHERS (See Mowers, Vertical)

Arctic Mizer Mfrs., Inc.  
Bluebird International, Inc.  
Capital Equipment Co.  
E-Z Rake, Inc.  
Fuerst Brothers, Inc.  
Giant-Vac Mfg., Inc.  
Hahn Inc., Turf-Ag. Div.  
Jacobsen Mfg. Co.  
F. D. Kees Mfg. Co.  
Kinco Mfg.  
Mathew Co.  
Parker Sweeper Co.  
Ryan, OMC-Lincoln  
Swenson Spreader & Mfg. Co.

## TILLERS

A.M.F. Lawn and Garden  
Atlas Tool & Mfg. Co.  
Auto Hoe, Inc.  
Black and Decker Mfg. Co.  
Bolens: FMC Corp., OPE Div.  
Capital Equipment Co.  
J. I. Case, Outdoor Power  
Equip. Div.

Deere & Co.  
Engineering Products Co.  
Ferrari International Inc.  
FMC Corp., Outdoor Power  
Equip. Div.  
Ford Tractor Operations  
Giant-Vac Mfg. Inc.  
Gravely, Div. Clarke-Gravely  
Hahn Inc., Turf-Ag. Div.  
HMC  
Howard Rotavator Co., Inc.  
International Harvester  
Kubota  
Lakes Supply Co., Inc.  
Lely  
Massey-Ferguson, Inc.  
The Roto-Hoe Co.  
Simplicity Mfg. Co.  
Solo Inc.  
Tradewinds, Inc.  
White Farm Equipment  
Yazoo Mfg. Co.

#### TOOLS, HAND, HYDRAULIC, PNEUMATIC

Fairmont Hydraulics  
The Fanno Saw Works  
Ginther Equipment Corp.  
Skil Corp.  
Stanley Hydraulic Tools  
Tallman Equipment Co., Inc.

#### TOP DRESSERS

Jacobsen Mfg. Co.  
Ryan, OMC-Lincoln

#### TRACTORS, 8-12 HP

Agro Care  
A.M.F. Lawn and Garden  
Ariens Company  
Avco New Idea  
Bolens: FMC Corp., OPE Div.  
Capital Equipment Co.  
J I Case, Outdoor Power  
Equip. Div.  
Deere & Co.  
FMC Corp., Outdoor Power  
Equip. Div.  
Ford Tractor Operations  
General Electric Co., Outdoor  
Power Equipment Operation  
Gravely, Div. Clarke-Gravely  
International Harvester  
Kubota  
Lakes Supply Co., Inc.  
Massey-Ferguson, Inc.  
Simplicity Mfg. Co.  
Speedex Tractor Co.  
The Toro Co.  
Wheel-Horse Products

#### TRACTORS, 13-20 HP

Avco New Idea  
John Blue Co.  
Bolens: FMC Corp., OPE Div.  
Capital Equipment Co.  
J I Case, Outdoor Power  
Equip. Div.  
Deere & Co.  
Engineering Products Co.  
Ferrari International Inc.  
FMC Corp., Outdoor Power  
Equip. Div.  
Ford Tractor Operations  
Gravely, Div. Clarke-Gravely Corp.  
Hesston Corporation, Lawn Equip. Div.  
International Harvester Co.  
Jacobsen Mfg. Co.  
Kubota  
Lakes Supply Co., Inc.

Massey-Ferguson, Inc.  
Satoh Tractor c/o NEDA  
Simplicity Mfg. Co.  
The Toro Co.  
Tradewinds, Inc.  
Wheel-Horse Products  
White Farm Equipment

#### TRACTORS, 21-60 HP

Capital Equipment Co.  
Deere & Co.  
Ferrari International Inc.  
International Harvester  
Kubota  
Massey-Ferguson, Inc.  
Payline Div., International  
Harvester  
Satoh Tractor c/o NEDA  
Simplicity Mfg. Co.  
Slope Tractor, Inc.  
Tradewinds, Inc.  
Wheel Power Corp.

#### TRACTORS, 61-150 HP

Deere & Co.  
International Harvester  
Jacobsen Mfg. Co.  
Massey-Ferguson, Inc.  
Payline Div., International  
Harvester  
Simplicity Mfg. Co.  
Slope Tractor, Inc.  
White Farm Equipment

#### TRACTORS, 151 and up HP

Allis-Chalmers Corp.  
Deere & Co.  
International Harvester  
Payline Div., International  
Harvester

Simplicity Mfg. Co.  
White Farm Equipment

#### TRACTORS, CRAWLERS

Allis-Chalmers Corp.  
Deere & Co.  
International Harvester Co.  
Massey-Ferguson Inc.  
Payline Div., International  
Harvester

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Agro Care  
Beatty Trailers  
Bock Industries, Inc.  
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Clark Equipment Trailer Div.  
Howard S. Crane, Inc.  
Deere & Co.  
Ditch Witch Div., The Charles  
Machine Works, Inc.  
Ditch Witch Equipment Co.  
Ditch Witch of San Diego  
Fayette Division, Dayton-Walther  
Corp.  
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Ditch Witch Div., The Charles Machine Works, Inc.  
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Capital Equipment Co.  
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Gielow Co., Inc.  
Grandberg Industries Inc.  
HMC  
Karl Kuemmerling, Inc.  
McCulloch Corp.  
H. K. Porter, Inc.  
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Ginther Equipment Corp.  
Jacobsen Mfg. Co.  
Jeep Corp.  
Massey-Ferguson, Inc.  
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Features single-pulley (1¼" cap.) or double-pulley (1½" cap.) tree trimmer head section, and square-end mount pole saw head section with 4 ft., 6 ft. or 8 ft. extension sections with built-in, ALL-FIBERGLASS CONNECTING SLEEVE, and polypropylene rope.

Catalog free on request.

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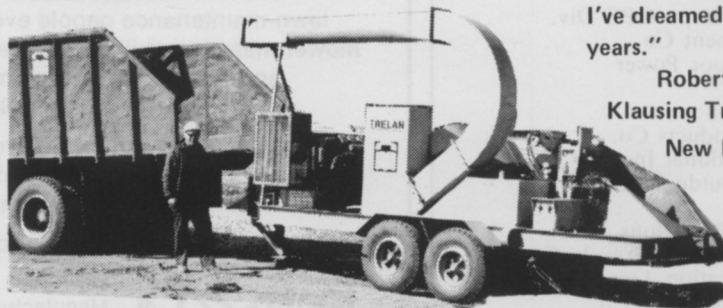
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New forward discharge spout designed for the tree services.



"Treelan is the machine I've dreamed of for years."

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Klausung Tree Service  
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# Skilsaw® 1602 electric chain saw. The electric saw with centrifugal clutch.

Push-button oiler helps reduce friction between bar and chain, extends service life.

Safety switch helps prevent accidental starts. Operator must unlock trigger before saw will operate.

AC/DC motor operates on house current, generator or alternator. Burnout-protected motor withstands periodic overloads, sustained use.

Double-insulated for extra safety.

Ten foot cord gives good range without need for extension cord.

14" reversible cutting bar.

Centrifugal clutch—a special feature of the Skil electric chain saw:  
—Helps reduce bucking & kick-back so saw cuts smoothly.  
—Protects motor, reduces wear on bearings and gears.

Oil level indicator shows when to refill.

# SKIL®



# "I like to send trees into winter in good, healthy condition. That's why I feed in the fall with Jobe's Spikes."

Frank Lamphier,  
Superintendent  
Aspetuck  
Valley  
Country Club,  
Weston,  
Connecticut

"Last winter, we had three weeks when the temperature was never above 10 degrees. Weather like that is rough on trees, so I believe in sending them into winter in the best possible condition. We use Jobe's Spikes on everything in the fall...willows, evergreens, maples, all our trees and shrubs."

## Jobe's makes good fall or winter fill-in work.

When work slacks off, it's time to get busy with Jobe's® Tree and Shrub Spikes. It helps eliminate one chore from the busy spring-summer months, and it's good for the trees.



## Roots grow in the fall, so feed them in the fall.

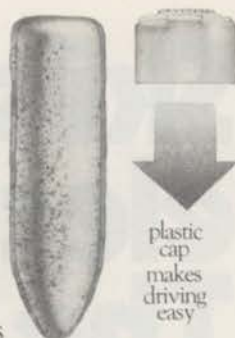
Feeding with Jobe's Spikes in the fall while roots are growing helps overcome weakness brought on by summer heat, lack of moisture and ravages of insects. Helps trees get through winter in shape for a strong start in the spring. Just pound Jobe's Spikes into moist ground at the dripline at the rate of 1 per inch of trunk diameter.

Frank Lamphier says, "Jobe's Spikes are long lasting. When we use them in the fall, the trees get nourishment for the winter. Then, when spring rains start, the

balance of the fertilizer is released to shoot them off for spring. We think one Spike does more good than one to two pounds of ordinary fertilizer."

## "Jobe's Spikes work!"

"We started 12-inch pine seedlings 4 years ago, and now they're 6 to 8 feet tall. We fed them at transplanting with Jobe's



Spikes and have fed them ever since with Jobe's. Growth like that really sold me." University leaching studies have shown that Jobe's Spikes are as effective as drilled fertilizer. Rainwater carries nutrients from the Spike to the root zone to a depth of at least 24 inches.



Jobe's Spikes are better than surface-applied fertilizer. You don't worry about run-off losses

or about burning turf or causing excessive turf growth around trees.

## "You can just tap them in with a hammer in moist ground."

A hammer is all the equipment you need with Jobe's Spikes. No bulky auger to carry from job to job. Nothing to break. No maintenance costs. No fertilizer bags to tear or spill.

Jobe's Spikes are a pre-measured amount of 16-8-8 fertilizer formed into a rigid, easy-to-drive spike.

## "Jobe's Spikes don't take much space, or time."

"I can send a man out on a 3-wheel cart with enough Spikes to last all day.

"Working fast is important because I have just 7 men, and only 4 year-round. We're working on a major landscape program with trees and shrubs to improve the looks of the course. Jobe's Spikes really save us time."

Jobe's Evergreen Spikes 12-6-8 and Fruit Tree Spikes 5-15-15 are now available in bulk packs. They can be combined for shipping with Tree and Shrub Spikes.

Call your local Jobe's distributor or order direct. \$30 per case (105 Spikes) prepaid, 5 case minimum. 15 or more cases, \$25 per case.



The easy method for professional tree care. International Spike, Inc., 462 East High Street, Lexington, Kentucky 40508.

# Industry News

## Glyphosate, Paraquat Effects On Seed Germination Studied

Effects of glyphosate and paraquat on turfgrass seed germination were evaluated recently in research conducted at Beltsville, Md., Agricultural Research Center carried out by Dayton L. Klingman and J. J. Murray.

Tests showed that glyphosate caused little effect on germination of Kentucky bluegrass, red fescue and tall fescue when applied directly over the seed on the soil surface.

Paraquat sprayed directly over the seed on the soil surface prevented germination of most of the seeds on the three grass species. Covering seeds on the soil surface with clippings from grass turf sprayed with paraquat greatly reduced germination. About half of those that germinated either died later or were severely chlorotic, it was reported in *Weed Science*. Covering seeds on the surface of the soil with clippings from turf that had been sprayed with glyphosate did not significantly reduce the number of seedlings established.

## Artificial Turf Makes Gains In Expanding Sales Market

"Plastic grass," artificial turf, may take its lumps from NFL owners, football players and stadium owners but it is finding plenty of running room in other markets.

The turf manufacturers are shifting the market from football stadium into other sales areas and finding it greener there. American Biltrete now sells a covering for tennis courts, gymnasiums and in other indoor and outdoor uses while Monsanto Co.'s AstroTurf is enjoying a new market in automobile floors and thresholds, patios, pool decks, putting greens and grave coverings. Highway medians and landscaping are the recent domains of 3M's Tartan product. Its Tartan

Turf rated highest for safety trials on football fields it covers.

Although players complain of skin burns, injuries and poor performances caused by artificial turf, and have had some bad experiences as in the case of Miami, Fla., which threw out \$250,000 worth of two year old, treacherous, slippery, and fading turf, the future isn't closed. Since natural grass can't withstand punishment by play, research will likely try to develop a safe and easy playing material.

## Trees Provide Varied Uses As Insulatory Energy Savers

The use of trees as shade devices extends for centuries but now a Cleveland, Ohio contractor is suggesting their use as insulatory and energy saving helps for the home.

As part of his check list to cut energy needs for heating homes he builds as much as 45 percent, Robert F. Schmitt suggests planting evergreen material on the building's north side with extensive use of deciduous trees to the south. This is beneficial, he says, since the evergreens help shield out the winter wind and chill as the deciduous trees allow direct sunshine. In summer, the deciduous provide shade for the house so less air conditioning is needed.

## Gypsy Moths Controlled With New Market Chemical

Thompson-Howard Chemical Company has introduced a new chemical product, Dimilin chitin inhibitor, for control of gypsy moths.

When applied by air at low levels, the chemical reported nearly 100 percent control, based upon larval kill and egg mass counts. It kills the pests within two or three days when they reach a new molt and continues control for two years by preventing egg masses from being deposited.

The chemical has EPA granting registration, causes very low incidence of environmental effects and breaks down in soil with 50 percent degradation in several days.

## Supers Get News Update On Hyperodes Weevil

Golf managers can arm themselves with new knowledge about the hyperodes weevil, according to the Metropolitan Golf Course Superintendents Association.

Dr. H. Tashino, Cornell University, addressed an audience of the MGCSA concerning his research of the weevil since 1972.

Dr. Tashino's research in the weevil's life cycle points to their overwintering as mature adults in the bases of fescue tufts. They generally spend this time beneath trees or other protected areas. With the advent of warm weather, the adults travel into areas infested with *Poa Annua* and feed eat the leaves. At this time, damage is not very serious.

During April and May, the insects leave their eggs on leaf sheaths and the larva devour stem tissue following their five stage metamorphosis. After eating the stem tissue, the pests eat the crown at the plant's base causing greater, more visible damage. The larva then progress into a pupa and adult. They are visible at night in the beams of a flashlight.

Dr. Tashino is now studying the life span of the Hyperodes to see if they have more than one generation and more than one species. He is also studying the activity of the weevil in comparison with the flowering period of dogwood and other common plants.

## Seven Washington Area Firms Get Landscape Awards

The Landscape Contractors of Metropolitan Washington recently announced their 1976 Environ-



mental Landscape Awards Program awards winners. Seven Washington area firms were honored.

The entries were judged in residential, commercial or industrial, and institutional or municipal cate-

gories based upon quality of design, workmanship, materials and maintenance on site visitation.

The grand prize for institutional or municipal landscaping went to Holland Gardens Nursery and Landscape, Inc., Beltsville, Mary-

land, for its installation for LaFayette Park, known as the Presidents' Park.

Chapel Valley Nursery Company, Woodbine, Maryland, received the grand award for commercial or industrial landscaping for its installation of the Christ Church Harbor Plaza Complex. The project was designed by Hisaka and Associates/Behnke Associates.

The grand award for residential landscaping went to Ten Oaks Nursery, Clarksville, Maryland, for the installing of Land Design/Research, Inc.'s design of the Dr. Brenner home in Clarks-

Merits awards winners were: Gustin Gardens, Inc., Gaithersburg, Maryland, for the Raymond Ruf residence; Garden Gate Landscaping, Silver Spring, Maryland, for the Calomiris residence; Stadler Nursery, Laytonsville, Maryland, for the Alfandre residence; and Holland Gardens Nursery and Landscape, Inc., Beltsville, Maryland, for the library of the Zoology Complex at the University of Maryland.

Program judges were: Tevy Shalafman, President, Potomac Chapter of the American Society of Landscape Architects; Richard Brillantine, landscape architect, District of Columbia Office of Beautification; Carl Hahn, horticulturalist, Maryland National Park and Planning Commission; and Ted Human, landscape architect.

## U.S. Grant Promotes Study Of Ohio Mining, Hydrology

The U.S. Bureau of Mines has approved a \$2.35 million grant to the Research Center, the USDA's Agricultural Research Service, and the U.S. Geological Survey to conduct five years' studies on the effects of coal strip mining on hydrology and quality of surface and ground water in Ohio.

The research is expected to expand the Ohio Agricultural Research and Development Center's strip mine reclamation research work.

The U.S. Soil Conservation Service, Muskingum Watershed Conservancy District and three privately owned mining companies are also involved.

## Now! A nylon cord weed trimmer that converts to six different tools!

Meet the amazing Green Machine. Nylon filaments spinning at over 5000 rpm zip through grass and weeds in seconds, even into nooks and crannies. Weight is only 14 lbs. The Green Machine's rugged 22.5 cc engine operates in any position and can be used with five optional attachments:

### BRUSH CUTTER

Tackle the tough stuff with this brush-blade attachment. Cut vines up to 1/2" in diameter.

### TREE PRUNER

Trim, thin or prune with ease! Cut saplings up to 2".

### HEDGE TRIMMER

The Green Machine converts in minutes to a husky 30" hedge trimmer. High performance blades cut stems up to 1" diameter.

### TWO SPEED DRILL/AUGER

Drill holes 1" to 6". Converts quickly to a wood, steel or concrete drill!

### SEE THE GREEN MACHINE NOW!

The Green Machine can be bought in any combination of engine and accessories. See them at your dealer or write for our fact-filled brochure.

# The Green Machine.

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We were young. At war. With no experience.

And who knew if we'd ever pay back the money?

Well, 200 years have passed. And the U.S. government has always paid in full. To the penny.

Now that's not a bad record.

In fact, you might say we're now a pretty well-established outfit to do business with.

So join the Payroll Savings Plan and save with today's Bicentennial issue of Series E Savings Bonds. It's easy. It's automatic.

And it's safe. After 200 years, you know we're here to stay.

Now E Bonds pay 6% interest when held to maturity of 5 years (4 1/2% the first year). Lost, stolen or destroyed Bonds can be replaced if records are provided. When needed, Bonds can be cashed at your bank. Interest is not subject to state or local income taxes, and federal tax may be deferred until redemption.



## Take stock in America.

200 years at the same location.



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Wet, humid weather can bring out the worst in your soil. Like fungi diseases. You've seen the results—damping off, blight and rot.

Terraclor® and Terrazole® soil fungicides can hold your ground against these fungi diseases. To protect the value and beauty of your turf and ornamentals.

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Caution: Read the label completely; follow directions carefully.

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## Industry News

### Natural Enemies Studied As Alternative Pest Control

Instead of resorting solely to pesticides to control insect pests, science is now developing means of control through the predatory and parasite relationship of natural pest enemies.

Dr. Frank Gilstrap, a scientist with the Department of Entomology at Texas A & M University, now controls populations of spider mites, tiny red insects which destroy houseplants, by introducing *Phytoseiulus persimilis*, a beneficial mite species, the spider mite's natural enemy. The predator mites eat all the spider mites and starve after their task is through. They may be brought back again if spider mites return.

Such processes are also used in controlling pests which form galls on ornamental plants and trees. Gordon W. Frankie, also with the Department of Entomology, uses beneficial wasps to feast upon the small wasps, flies, caterpillars or beetles that lay their eggs or feed on plant tissue, forming galls. The galls are not harmful to plant tissue but are considered unsightly. Scientists theorize that secretions of chemicals from the insect's body create abnormal growth when they react to the plants' chemicals.

### EPA Gives Daconil Approval; Rate Reduction Underway

EPA has given approval for a rate reduction for Diamond Shamrock's Daconil 2787 Flowable Fungicide.

The company has changed rates from six to eight ounces per 1,000 sq. ft. to four to eight ounces per 1,000 sq. ft. Other curative rates will stay the same.

Daconil is used on golf course and ornamental turf grass. It is used to treat dollar spot, helminthosporium leaf spot and melting out.

### USDA Develops Polymer Used Against Weeds, Insects

The USDA has developed a new film-forming polymer for creating barriers against weeds or insects.

Made of sewage sludge, methyl  
(Continued on page 68)

# And you can quote me

**"...Exhalt 800 is one of the finest products to come on the market in a long time. Not only are we getting much more control out of our spray programs, but we are saving a great deal of money by cutting our rates..."**

Louis E. Miller, Louisville (Ky.) Country Club

**"...I get much more prolonged control from the pesticides. This, obviously, is very beneficial during the hot, humid summer months..."**

Michael Jacques, Millbrook Golf Club, Greenwich, Ct.

**"...I added Exhalt 800 and got the best control for snow mold ever..."**

Bill Adams, Treasure Lake, DuBois, Penna.

**"...Exhalt 800 mixed with any of my chemicals makes them last at least three times longer..."**

H. T. Shaver, Great Southwest Golf Club, Grand Prairie, Tex.

**"...4½ inches of rain in a 30-hour period. I sprayed before the rain; the weather was hot and muggy. Afterwards I was unable to mow fairways for two days. Later, I went out and inspected the fairways. I found your material still clinging to growth, and my fairways were disease-free—thanks to Exhalt 800..."**

Andy Drevyanko, Rolling Green Golf Club, Springfield, Penna.

And what do we say about Exhalt 800? That it'll give you better protection at lower label recommendations. Longer protection at higher label recommendations. Others say so, too; university tests prove it. Ask to see the proof.



**Exhalt 800**  
Sticker-Extender

Kay-Fries Chemicals, Inc., Crop Protection Division, Stony Point, N.Y. 10980



## Industry News

(Continued from page 66)

alcohol and a starch compound, the pesticide-polymer dries to an invisible film after being applied as a spray on soil or plants. A polymer is a compound created by combining small molecules or units to form large molecules.

According to William B. Roth, Agricultural Research Service (ARS) scientist, the polymer film won't dissolve in water. It keeps the pesticide in a barrier that will destroy emerging weeds or attacking insects and minimizes environmental pollution by reducing pesticide runoff and evaporation. After the pesticide is exhausted, the film decomposes into natural soil components.

The new polymer also increases the effectiveness of a commercial herbicide and needs a low rate of herbicide application to stop grass weed growth. It was as successful as

greater applications and amounts of herbicide without the polymer. With the polymer, the herbicide didn't require mixing with soil to prevent evaporation. Instead, the herbicide-polymer was sprayed on the soil surface and dried as a weed-emergence barrier.

Roth developed the polymer from a viscous product which was found by Edwin N. Davis, a microbiologist, and Lowell L. Wallen, a chemist, at the Northern Center. Their studies revealed the bacteria in activated sludge form a thick, black product when methyl alcohol is mixed and aerated with the sludge.

In other actions, Roth adds the pesticide to the sludge-alcohol and combines it with dialdehyde starch as a cross-linking agent. The starch compound was another Northern Center discovery and is marketed as a paper strengthening agent.

The pesticide-containing polymer may be added to water for spraying on soils or plants so it dries to the film barrier. These could be dried as films or sheets in the manufacturing plant and used in solid forms.

This is the second pesticide-control development from the USDA ARS Northern Regional Research Center since encapsulating chemicals with starch xanthate were announced in May.

Roth is now preparing studies to form delayed reaction and on-target pellets for the polymer.

### 350,000 Acres of Timber Affected by Pitch Canker

Forest experts are still baffled by the outbreak of pitch canker disease in Volusia and Flagler counties in Florida and the southeast.

The disease affects shade and ornamental pine in addition to forest pine.

According to the latest estimate (Continued on page 70)

## For Premier Quality In a Winterseeding Blend Insist On

**Winterlawn**

For the Southwest

**Dixie Green**

For the Southeast

Either will produce an impressively dense, dark green turf that will hold its color beautifully whether close-cut or mowed at normal heights.

Check the ingredients and you'll know why. Dixie Green and Winterlawn are both a 60-40% blend of Derby turf-type ryegrass and Highlight Chewings-type red fescue. This blend gives you rapid germination, smooth spring transition and a turf of unsurpassed quality. Dixie Green and Winterlawn have been tested, tried and proven. Their strongest supporters are Superintendents who have tried the blend.

Derby is the ryegrass that joined Pennfine and Manhattan on the "preferred list" and Highlight was judged World Champion at the 45th Annual Royal Agricultural Winter Fair in Toronto.

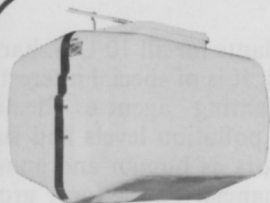
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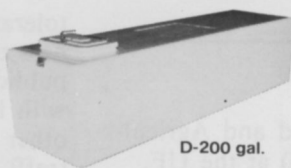
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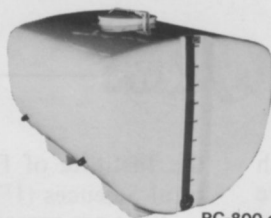
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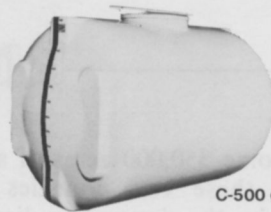
R-100 gal.



D-200 gal.



PC-800 gal.



C-500 gal.

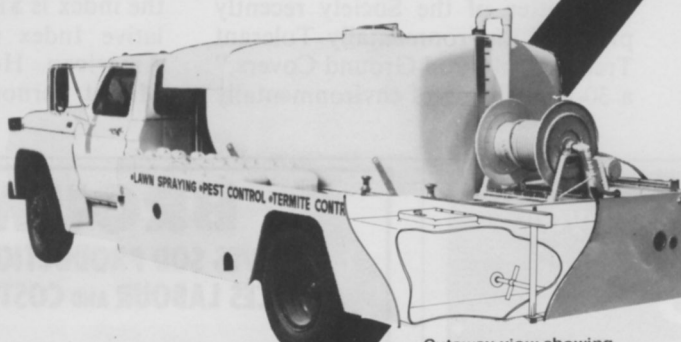
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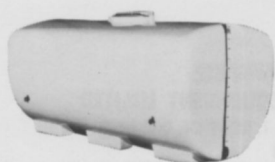
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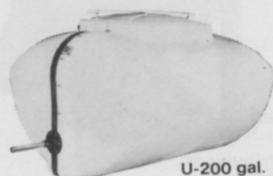
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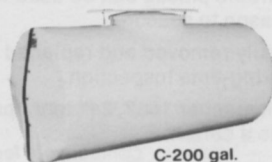
PC-1200 gal.



U-600 gal.



U-200 gal.



C-200 gal.



mates, some 350,000 acres of slash pine in these two counties are affected by the destructive disease, representing a potential timber growth loss of nearly \$2 million. Less severe pitch canker infections are showing up in other areas of Florida and the southeast.

A *fusarium* fungus is the prime suspect in causing the disease, but no one is certain how it is spread and there are no known controls available at present, according to a University of Florida forest pathologist.

First observed in 1945, the disease has occurred periodically over the years, seemingly at random. During the last serious outbreak in 1969, many trees were infected, but few died. Many trees actually recovered. The present rate of spread, however, has been particularly alarming, says Dr. Robert A. Schmidt, associate professor with

the Institute of Food and Agricultural Sciences (IFAS) at the UF.

"We are presently experiencing a high incidence of pitch canker in slash pine plantations and seed orchards. Entire crops are involved and tree mortality is very high in some areas. Heretofore, only a few terminal branches were attacked and tree mortality was not severe," he explains.

## Environmental Plant List, Index, Offered by Society

The American Horticulture Society has published a series of valuable publications relating to plants and its own history in horticulture studies.

The educational Horticultural Committee of the Society recently printed "Environmentally Tolerant Trees, Shrubs and Ground Covers," a 30-page listing of environmentally

tolerant plants for all 10 U.S. hardiness zones. It is of special interest to public planting agencies dealing with high pollution levels and such other factors as human and animal traffic, financial restrictions, growing conditions and maintenance.

An index of 50 years of the National Horticulture Magazine, Vols. 1-38, 1922-1959, and American Horticultural Magazine, Vols. 39-50, 1960-1971, is now available.

The reference tool is 109 pages long and is a complete grouping of all issues. It was produced by Dr. Richard A. Howard, Director, Arnold Arboretum, and the American Horticultural Society Cumulative Index Committee.

"Environmentally Tolerant Trees, Shrubs and Ground Covers" costs \$2.95 post paid from the American Horticultural Society, Mount Vernon, Virginia, 22121 and the index is \$10 a copy from Cumulative Index Committee, c/o The American Horticultural Society, Mount Vernon, Virginia 22121.

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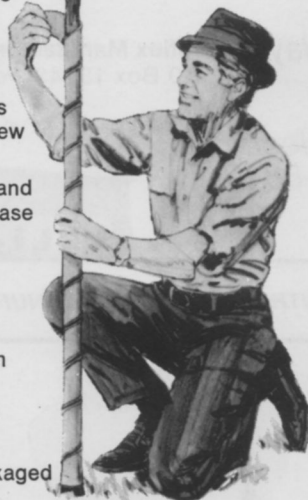
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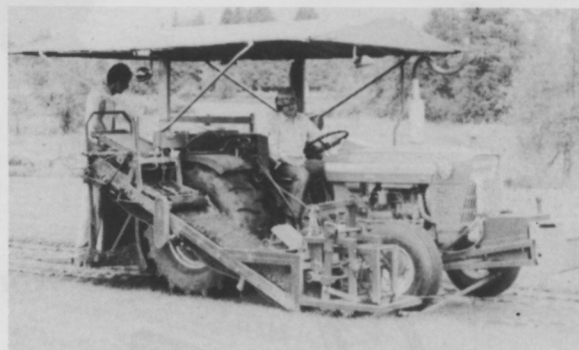
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# Genetic information needed for metropolitan trees

Progressive arborists and nurserymen have demonstrated impressive gains from exploiting genetic variation in certain characteristics of street trees. But the authors of a recent report suggest it is time for a more comprehensive approach, not only to make fuller use of these gains, but to achieve even greater genetic progress.

The report was prepared at Pennsylvania State University by H. D. Gerhold, professor of forest genetics; A. J. Long, former assistant professor of forest genetics; and M. E. Demeritt, former research assistant.

"The metropolitan regions of the Northwest offer diverse, and increasingly inhospitable, environments for trees," their report says. "Stresses include not only the familiar ones — adverse soils, droughts, freezes and disease organisms — but also other insults that accompany urbanization such as air pollutants

and deicing salts. Only fragmentary information is available about the effects of such stresses on the health of various species and clones, and little is in a form that can be readily applied."

They set up a genetic information system, with the principal components including:

- Taxonomic categories — species, varieties, clones.
- Tree characteristics — appearance traits, adaptive traits.
- Environments of trees — hardness zones, planting situations, urban stresses, diseases and insects.
- Organizations — municipalities, highway departments, nurseries, seed companies, government and university research agencies, arboreta.

They saw the principal functions of the genetic information system as follows:

- To organize performance tests of important trees at representative geographic locations.
- To obtain performance test data periodically on important characteristics from cooperating specialists.
- To interpret performance data and other pertinent data, transforming it into practical predictions of tree qualities in various environments.
- To distribute performance predictions periodically to cooperating individuals and organizations.
- To analyze for nurserymen trends in planting rates of species and clones.
- To analyze for breeders relative needs for improving various characteristics.

They surveyed arborists and nurserymen and several dimensions of metropolitan tree planting in 13 northeastern states were defined. About 100,000 trees were planted annually from 1962 to 1972 along highways in this region and about 200,000 were planted by municipal agencies — together an investment of \$12 million.

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# *With a little bit of luck . . .*

## **Fred Slagle transformed 200 acres into Ohio's toughest 72 par course with unorthodox methods**

*by mick baker*

With common sense, good luck and God's help, what can one man do?

Three years ago Fred Slagle started to build a golf course for himself. He took 200 acres of rolling farmland in northeastern Ohio, complete with 10,000 white pines and other trees native to that scenic area, and turned it into a blossoming championship course with 13 lakes, 14 water holes and 62 sand traps.

He must have done something right, because the course has been rated the hardest 72 par course in the state three months after it opened. Its nine-month-old turf was unbelievable to those with two or three-year-old courses and the envy of some with older ones.

Although Slagle attributes the success to "common sense, a lot of good luck and conditions that can only be called God's help," his foresight and preparation, as well as what some call his creative genius, have played an important role in the transition of a tract of rural countryside in Madison, Ohio into Thunder Hill Country Club, which is worthy of being called a resort.

"I've been successful by just starting to do it," says Slagle, a real estate broker who had never built a golf course before. "I never intended to build a championship golf course, but I like a challenge and I didn't want to cater to the average golfer. I wanted a course with interest and challenge."

So three years and \$1.5 million later he has exactly that. Other builders may not benefit much from his good luck, but a little of his "common sense" philosophy might very well help some.

A unique aspect of the course is the extensive use of lakes and watersheds. Fifteen of its 60 acres of fairways are under water.

The hilly terrain has a topography naturally suited for lakes and ponds. Instead of using tile or open ditches to drain the course, Slagle decided to dam up the swells and let the water run off the predominantly clay soil into them, forming watersheds and lakes.

Use of water in this manner has other advantages. It beautifies the course, adds more hazards and saves maintenance costs, since 15 of the 60 acres of fairways do not have to be cut, seeded or fertilized. It also saves a step in construction since little tile must be put in. Slagle only used about ten percent of the tile that a comparably sized course would have needed. He said the expense of building the lakes enabled him "to spend money more wisely to have a more beautiful course."

The presence of one of those lakes saved the builder more than he was expecting it to — about \$150,000 in green mix to be precise. The lake was losing water and he suspected the presence of porous material. His grass consultant discounted the possibility of sand, saying the area was entirely clay. Slagle dug four holes five feet into the ground near the lake with a bulldozer and came up with a bucket of soil that was analyzed as a good combination for green mix, minus peat moss. Slagle was happy and the consultant was shocked.

Preparation and the right equipment were two key elements in the course's construction. "The secret of our success was careful soil prepa-

ration," said Slagle, adding that 600 soil samples were taken at the course. They were taken before disturbing the land, after moving it and just before seeding. After each sample was taken, corrections were made to bring the soil up to ideal growing conditions.

Some 500,000 yards of dirt were moved during construction and Slagle was careful where he put it. When he removed topsoil from an area he immediately dumped, where it would be eventually needed, rather than leaving piles and coming back to them later. After damming up the swells to be filled with water, he took the topsoil and added it to the tee areas. He claims this bit of foresight will keep his tees in better condition and give the course variability.

The larger tees provide the opportunity to move the pins more often, thus insuring minimal use to any particular spots on the tees. The extra topsoil also allowed him to build tiers on the tees, as many as six on some. The pins can be set in such a number of places that shots can be changed. "We can change the tees so the shots are different everytime," said Slagle, "and the golfer can be facing a whole new course." This is to keep Thunder Hill from becoming a boring course, which he claims can cause golfers to stop concentrating.

When he realized how much soil would have to be moved, Slagle decided to buy the needed equipment and do his own moving. To have had it contracted would have cost upward from \$1.25 a yard. Buying the equipment was a fortunate choice for him in present market



## *With a little bit of luck . . .*

conditions. With the price of equipment rising steadily, he was able to sell it two or three years after purchase at the same price which he paid for it. On some of the machinery he even turned a profit.

Among the pieces that were helpful in the construction of Thunder Hill, according to Slagle, was the Miller disc, not normally

used in golf course construction. The disc is used in heavy farm conditions to eliminate plowing, as in the case of corn stubbles. He used the disc to correct a problem caused by a previous owner of the land. To discourage hunters, a farmer had plowed erratic furrows, which developed into deep ruts through erosion. They were almost impossible

to walk across. Slagle saved a step in construction with the disc, as the other alternative was to plow and disc.

Other earth movers Slagle used included two John Deere self-loading pans, which he said were ideal for golf courses because of their high speed. He mentioned the Case 1150B bulldozer was highly auto-



Fred Slagle plays his Thunder Hill course. (Photo by Jack Lardomita.)

## Meeting Dates

matic, very fast and had an efficient angle and till blade. "Its speed is incredible," he said, "it can shape greens, traps and bunkers into a finished grade."

On the fairways he used a York rake with a drag of his own design. The drag was a pipe float that consisted of six four-inch pipes, ranging in length from 10 to 16 feet. The pipes were welded together with three-foot chains, the shortest pipe first and each succeeding pipe about a foot longer. Slagle felt existing drags, such as railroad ties, were not effective enough for this particular job, so he came up with the pipe float to accommodate the needs of golf course construction.

Thunder Hill's fairways, an eight-way mixture of bluegrasses, and the greens, Penncross bentgrass, were double and triple seeded. Slagle said the Brillion seeder had much to do with his success because it covers such a large area. The course was ready to seed last September, but rain delayed seeding until October. It had been mowed four times by the middle of November and Slagle played golf on it November 30. When the course officially opened in May, professionals and members of other clubs were almost astounded at the rapidity of turf growth. They commented that Thunder Hill has better turf than courses seeded years ago.

Why has Thunder Hill been such a success? According to Slagle, "Other golf course architects probably wouldn't have the success we've had because of the extra time and expense we've put in. But when you're doing it for yourself, you tend to do it right."

**Tennessee Nurserymen's Association**, Annual Meeting, Mountain View Hotel & Motor Lodge, Gatinsburg, Sept. 16-17.

**Transworld Home Horticultural Exhibit**, Chicago Expo-center, Sept. 19-22.

**The Fertilizer Institute**, International Fertilizer Conference, Waldorf-Astoria Hotel, New York, Sept. 19-22.

**Indiana Golf Course Superintendents Association** Meeting, Westbrook Elks, Sept. 21.

**Lawn and Garden Distributors Association** 6th Annual Convention, Hyatt Regency, San Francisco, Cal., Sept. 22-24.

**Farwest Nursery Show**, Memorial Coliseum, Portland, Ore., Sept. 22-24.

**Wy-Mont Golf Course Superintendents Association** meeting, Ramada Inn, Billings, Mon., Sept. 24-25.

**Annual Midwest Field Day**, Purdue Agronomy Farm, West Lafayette, Ind., Sept. 27.

**California Association of Nurserymen**, 66th Annual Convention, Sheraton Inn Hotel, Fresno, Sept. 28-30.

**Florida Nurserymen and Growers Association**, Hort-I-Scope International Short Course, Curtis Hixon Convention Center, Tampa, Sept. 30-Oct. 1.

**Fourth Annual Drip Irrigation Conference**, "Drip '76", Fresno, Cal., Sept. 30-Oct. 6.

**Nebraska Golf Course Superintendent Association Meeting**, Hillcrest Country Club, Lincoln, Oct. 4.

**Northern California Turfgrass Council** Turf and Landscape Irrigation Seminar, Asilomar Conference Grounds, Pacific Grove, Oct. 1-3.

**Florida Nursery and Allied Trade Show**, Curtis Hixon Convention Center, Tampa, Oct. 1-3.

**Society of American Foresters**, New Orleans, Oct. 3-7.

**Hill Land Symposium**, West Virginia University, Morgantown, Oct. 3-9.

**Midwest Association of Golf Course Superintendents** Meeting, Butler National Golf Club, Oct. 4.

**Nebraska Golf Course Superintendents Association Meeting**, Hillcrest Country Club, Lincoln, Oct. 4.

**Tri-State Golf Course Superintendents Association Meeting**, Owensboro Country Club, Kentucky, Oct. 5.

**Northern California Turfgrass Council**, Irrigation Seminar, Oakland Hilton Inn, Oct. 6.

**Fertilizer Institute** International Fertilizer Conference, The Fairmont, New Orleans, La., Oct. 6-8.

**Florida Turfgrass Association** Management Conference and Show, Sheraton Hotel and Convention Center, Orlando, Oct. 10-14.

*continued on page 78*



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**Indiana Golf Course Superintendents Association Meeting,** Eagle Creek, Oct. 12.

**Ohio Golf Course Superintendents Association Meeting,** Westfield Country Club, Oct. 12.

**Philadelphia Association of Golf Course Superintendents Meeting,** Concord Country Club, Oct. 12.

**Kentucky Turfgrass Conference and Field Day,** Dam Village State Resort, Gilbertsville, Oct. 12-13.

**Northern Michigan Turf Managers Association Meeting,** Sugar Loaf Village, Cedar, Oct. 13.

**Greater Cincinnati Golf Course Superintendents Association Meeting,** Glennview Golf Course, Oct. 19.

**11th Annual Industrial Weed Control Conference,** Texas A & M University, Rudder Center, College Station, Oct. 20-21.

**The Sixth Southern Forest Soils Workshop,** Southern Forests Council, Charleston, S.C., Oct. 20-21.

**Southern California Turfgrass Council 16th Annual Turfgrass Equipment and Materials Educational Expo,** Orange County Fairgrounds, Costa Mesa, Oct. 20-21.

**Rocky Mountain Golf Course Superintendents Association Meeting,** Willis Case Golf Course, Col., Oct. 21.

**26th Central Plains Turfgrass Conference,** Kansas State Union, Manhattan, Oct. 21-22.

**Southwest Turfgrass Conference,** New Mexico State University, Las Cruces, Oct. 21-22.

**Irrigation Conference,** Center for Continuing Education, Appalachian State University, Boone, N.C., Oct. 21-22.

**Seventh Technical Conference on Irrigation, Drainage and Flood Control,** Spokane, Wash., Oct. 21-23.

**Oklahoma State Nursery Research Field Day,** Oklahoma State University, Stillwater, Oct. 25.

**Wisconsin Golf Turf Symposium,** Pfister Hotel, Milwaukee, Oct. 27-28.

**Fourth National Turf Conference,** Iluska Motor Inn, Surfers Paradise, Queensland, Austl., Oct. 31-Nov. 5.

**Tennessee Golf Course Superintendents Association Meeting,** Lakewood Country Club, Tullahoma, Nov. 1.

**Tri-State Golf Course Superintendents Association,** Western Hills Country Club, Mt. Vernon, Ind., Nov. 2.

*continued on page 80*

## The "Tow-Boy" SOD HARVESTER



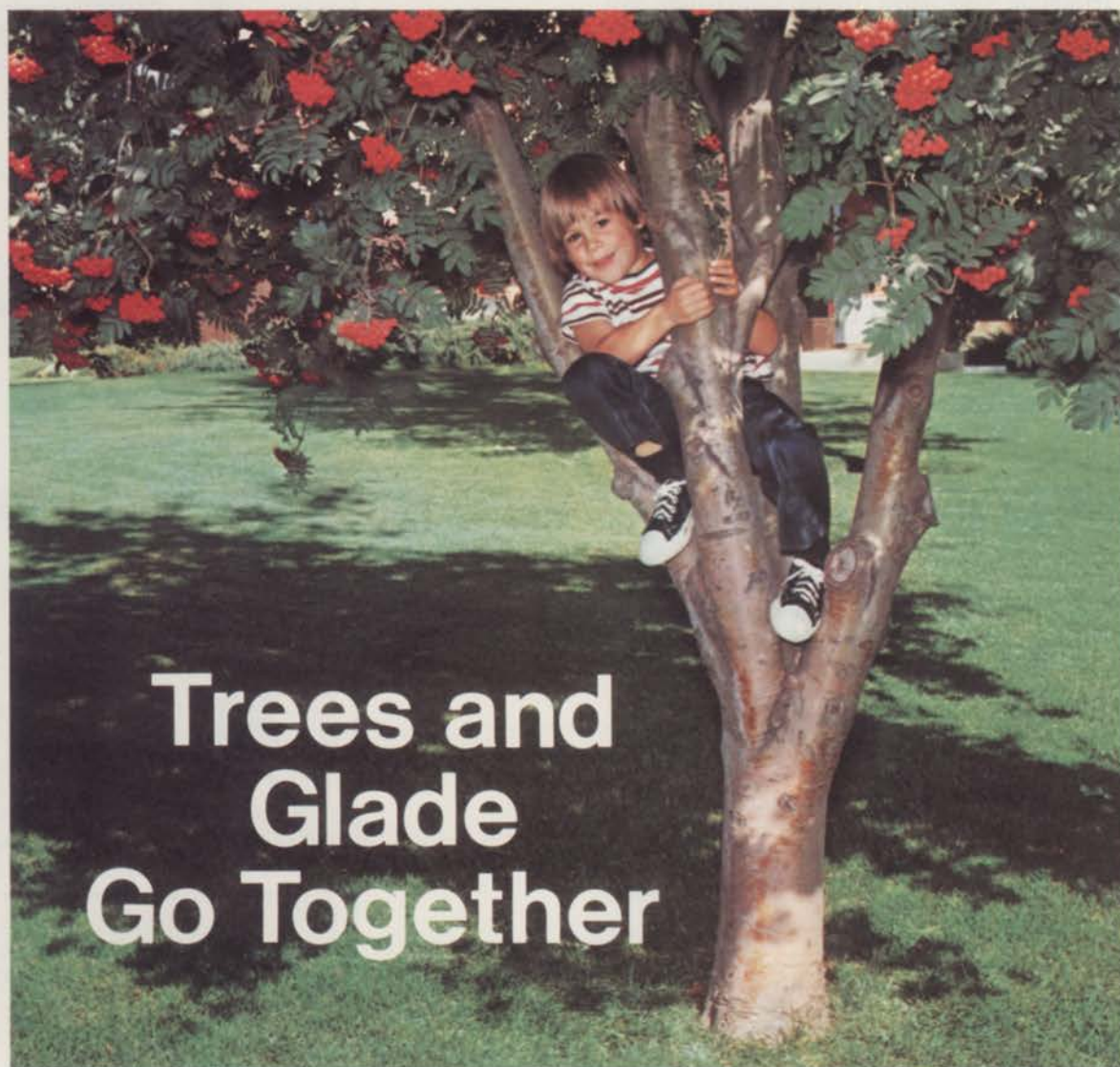
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**Sprinkler Irrigation Association Annual Convention and Business Management Seminar**, Newporter Inn, Newport Beach, Calif., Nov. 7-10.

**Sixth National Institute on Park and Grounds Management**, Marriott Hotel, Atlanta, Ga., Nov. 8-10.

**National Golf Foundation Eastern National Daily Fee Golf Course Management Workshop**, Pheasant Run Resort, St. Charles, Ill., Nov. 8-10.

**Indiana Golf Course Superintendents Association Meeting**, Delaware Country Club, Nov. 9.

**Philadelphia Association of Golf Course Superintendents Meeting**, Sunnybrook Golf Course, Nov. 9.

**Southern California Golf Course Superintendents Meeting**, Los Robbles Greens Country Club, Nov. 9.

**10th Annual Clemson Turfgrass Conference**, Clemson House Hotel, Clemson, S.C., Nov. 9-10.

**Missouri Turfgrass Conference**, Ramada Inn, Columbia, Nov. 11-12.

**30th Annual New York State Turfgrass Association Conference**, The Turf Inn, Albany, Nov. 16-18.

**Greater Cincinnati Golf Course Superintendents Association Meeting**, Belwood Country Club, Nov. 16.

**Seventh Annual University of Georgia Turfgrass Short Course**, Center for Continuing Education, University of Georgia, Athens, Nov. 22-23.

**31st Oklahoma Turfgrass Conference**, Oklahoma State University, Stillwater, Dec. 1-3.

**Texas Turfgrass Conference**, Rudder Conference Center, Texas A & M University, College Station, Dec. 6-8.



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# How to make your board see the value of new turf equipment.



Convincing your Board of Directors that new turf equipment is a necessary and sound investment can be one of your most difficult tasks. They don't always see the benefits behind such a purchase.

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## Point #1: The Duffer Demands More.

Today's golfer is more sophisticated than ever before. He has seen, and many times played, some of the finest courses in the world. He recognizes the value of a good course. And if yours is sub-par, he'll go elsewhere.

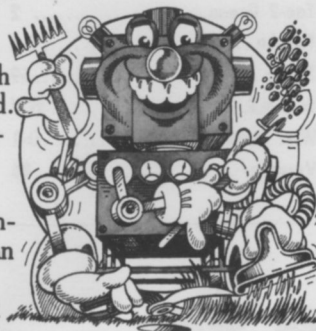


With this more sophisticated golfer comes the need for more sophisticated golf course maintenance. Heavy player traffic has increased the work required to keep the turf in top condition. So jobs that were once optional are now mandatory. Where spiking a green used to be sufficient, today it also needs deep aeration.

All this dictates the use of specialized equipment that wasn't available ten or even five years ago. Equipment that will enable you to build and maintain a top flight course, and help avoid special turf problems that could prove extremely costly.

## Point #2: Machines Do More.

In the past decade, the price of labor has tripled. The same number of men must do more work in less time to give you the same value for each labor dollar invested. Mechanized equipment allows you to trim hundreds of unnecessary man-hours. One man can now cut more sod in an hour than six men used to cut in six hours. Or that same man can aerate 18 greens in a few hours instead of a few days.



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Which brings us to the third point.

## Point #3: Longevity Makes Them Worth More.



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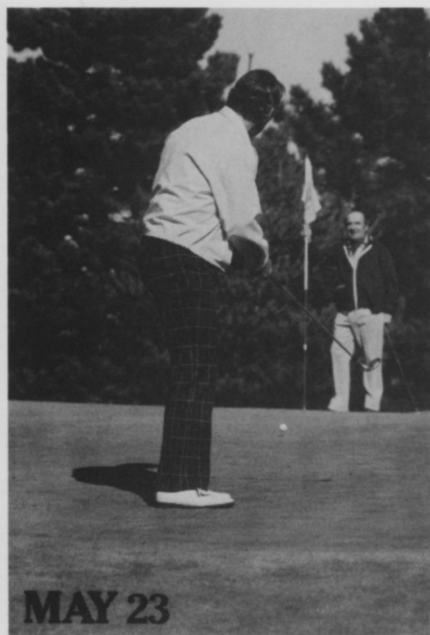
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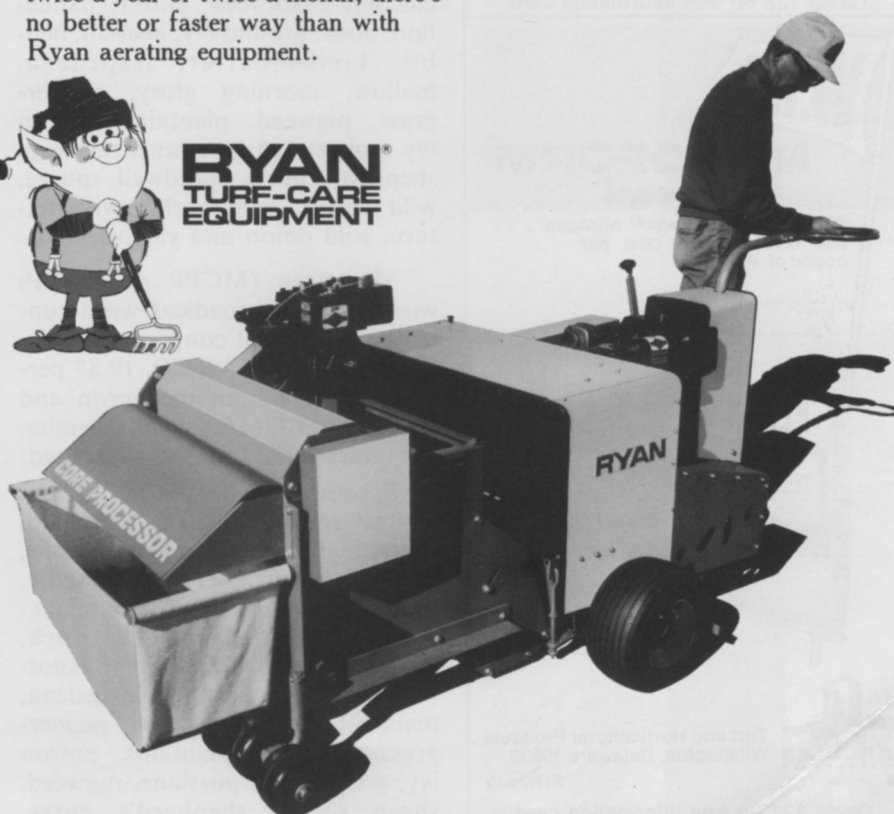
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## HERBICIDE APPENDIX— PBI Gordon offers full line

The August issue of WEEDS TREES & TURF contained a turf herbicide report of currently mar-

keted herbicides from various chemical companies. The P.B.I. Gordon Corp., Kansas City, Kans., presented here was not included. WEEDS TREES & TURF regrets the omission.

P.B.I. Gordon Corp. offers a full line of pesticides under the Acme label and specializes in phenoxy herbicides. Its Trimec, with basic components of 2,4-D, MCPP and dicamba herbicides, can handle weeds on such sensitive grasses as bentgrass. Trimec broadleaf herbicide contains 27.59 percent DMA salt of 2,4-D, 13.86 percent DMA salt of mecoprop and 2.76 percent DMA salt of dicamba. It works best on 2,4-D tolerant grasses such as bluegrass but can function on closely mowed bentgrasses if applied in a reduced rate. A special P.B.I. Gordon bentgrass formulation is recommended.

Trimec herbicide can control sheep sorrel, knotweed, spotted spurge, chickweed, oxalis and henbit plus broadleaf weeds bedstraw, black medic, buckhorn, burdock, chicory, chickweed, clover, dandelion, dock, ground ivy, heal-all, henbit, lambsquarter, lespedeza, mallow, morning glory, peppergrass, pigweed, plantains, poison ivy, poison oak, purslane, ragweed, shepherd's purse, speedwell, spurge, wild carrot, wild garlic, wild lettuce, wild onion and yarrow.

Mecoprop (MCPP or CMPP) works best in broadleaf weed control on grasses. It contains 6.59 percent DMA salt of 2,4-D, 19.87 percent DMA salt of mecoprop and 2.63 percent DMA salt of dicamba. Bentgrass should not be overdosed.

Specific broadleaves MCPP can control are sheep sorrel, knotweed, spotted spurge, chickweed, oxalis, henbit, bedstraw, black medic, buckhorn, burdock, chicory, chickweed, clover, dandelion, dock, ground ivy, heal-all, henbit, knotweed, lambsquarter, lespedeza, mallow, morning glory, peppergrass, pigweed, plantains, poison ivy, poison oak, purslane, ragweed, sheep sorrel, shepherd's purse,

speedwell, spurge, wild carrot, wild garlic, wild lettuce, wild onion and yarrow.

Trimec spray should not be used on centipede or St. Augustine grass without some expected injury and weeds should only be spot sprayed. Clover will suffer if sprayed.

Gordon's Amine 2,4-D turf herbicide is accepted for use on such 2,4-D weeds as annual sow thistle, annual thistle, bindweed, buckhorn, bull thistle, carpet weed, chicory, dandelion, knotweed, kochia, lambsquarters, pigweed, ragweed, wild lettuce, wild radish and ver-vain.

Gordon's Betamec-4 uses betasan based pre-emergence herbicide for control of annual bluegrass, barnyardgrass, deadnettle, fall panicum, foxtails, goosegrass, hairy crabgrass, lambsquarters, redroot, pigweed, shepherd's purse, and smooth crabgrass.

It should only be applied on well established grass lawns of such grasses as Bermudagrass, bahia, bentgrass spp, perennial bluegrass spp., centipede, fescue spp., Pensacola bahia, perennial ryegrass, poa trivialis, St. Augustine, red top and zoysia. Betamec-4 may be applied to dichondra lawns at seeding time or later.

The company suggests lawns not be reseeded within four months of application. The area should be renovated for reseeding by raking thoroughly to scarify the soil surface. When possible and practical, peat should be mixed with soil for an optimum seed bed.

If turf diseases or physiological disorders makes reseeding necessary before four months after application, activated charcoal should be applied before reseeding to deactivate the chemical. Charcoal application should follow seven pounds per 1,000 sq. ft. (300 lbs. per acre in 600 gal. of water per acre). Irrigation should follow application with no reseeding done until seven days after applying the charcoal.

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That's just part of what a Jacobsen distributor considers as giving good service.

We not only want you to buy the best equipment for the job, we want to make sure that you're convinced it's the smartest thing you can do.

Beyond that, we can probably help you arrange a financing or leasing program to help you get the equipment that will start saving you money right away.

Why not ask your Jacobsen distributor to do a cost analysis on your turf care chores? It won't cost you anything to get an answer.

But it could be costing you something if you don't.

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Great products deserve great service.



# Sometimes it's better to hear it from someone else....

Here's what Berkley Carter of Tuckahoe Turf Farms,\* Slocum, R.I. has to say about

## baron KENTUCKY BLUEGRASS

U.S. Dwarf Variety Plant Patent No. 3186



"I use Baron for every acre of bluegrass I grow. Baron gives what you guys call in your advertising... a tight-fisted root system. It holds together... I can shake it like a rug."



"Of all the bluegrasses, Baron is resistant to more diseases. I've had two different bluegrass fields side by side and Baron always shows more resistance. It holds up its color throughout the season with a minimum of water and fertilizer."



"When I need a herbicide, Baron can take the shocks better without streaks or setbacks. It is an aggressive grass needing only minimum maintenance practices."



"Baron comes up fast... that's important to me. I want to see fuzz in 7 days so that the soil is protected as soon as possible."



"It's hard enough getting the seedbed ready; I'm not going to spoil everything with a poor quality seed. I don't know why every sod grower doesn't use Baron."

**"And your Jamestown Fescue is great too."**

Jamestown is perfect for a bluegrass blend, particularly Baron. It has great eye appeal and when sod is needed for sun and shade areas Jamestown/Baron really go well together.

One more comment from Berkley... "When you've got a good thing going — stick with it."

There's not much more we can add except that Lofts Pedigreed Seed Company or any authorized distributor is nearby wherever you grow sod.



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\*Tuckahoe Turf Farms, growers of 600 acres of cultivated sod, is one of the largest sod farms in New England.

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