

Now Chemagro can control almost anything that harms grass

like insects

®BAYGON 70% Wettable Powder is now registered as an insecticide for application to lawns and turf. Economical, easy-to-mix sprays of BAYGON 70% Wettable Powder are noted for their long residual activity.

®DYLOX 80% Soluble Powder provides outstanding control of sod webworms. Three applications at monthly intervals will provide maximum control.

like nematodes

®DASANIT nematicide is registered for the control of nematodes on established commercial turf grass throughout the United States. Merely apply the low-cost recommended dosage of DASANIT and drench with water to leach the material into the root zone and provide fast, maximum control on contact. Each application provides protection for up to 9 months.

like major turf diseases

®DYRENE turf fungicide is well known for the protection it provides against leaf spot, melting-out, copper spot, rust, *Sclerotinia* dollar spot, brown patch and snow mold. The 50% wettable powder formulation mixes easily with water, and may be applied with any standard sprayer without clogging nozzles or corroding metal parts. Dyed green to blend with turf and eliminate an unsightly deposit, DYRENE will not stain shoes or fabrics when dry.

like cottony blight

®DEXON fungicide is unsurpassed for long-lasting control of *Pythium*. Start treatment early before the disease appears, and repeat at 7-day to 14-day intervals throughout the season. DEXON will not cause leaf burn, and is compatible with other turf pesticides.

Contact your Chemagro supplier for full details about these time-tested turf chemicals now! 7101

**CHEMAGRO
CORPORATION**
KANSAS CITY, MISSOURI 64120



For More Details Circle (123) on Reply Card

Another Alternative for Weed Control

FLAME WEEDING

WEED CONTROL is becoming increasingly frustrating. Chemicals are accused of leaving residues. Biological controls are as yet impractical. Few desirable plants are omnipotent over weeds. Mowers can't be operated everywhere. So what else is there?

One company with more than 150 centers around the country says there's "flame weeding."

Suburban Propane Gas Corporation of Whippany, N. J., calls flame weeding with LP gas—propane—one of the most economical, safe and effective ways of dealing with weeds.

Here is how Mae D. Aucello, director of public relations, describes the fundamentals, application and advantages of flame weeding:

This method completely annihilates annual weeds by exploding the cellular structure of the plant. Propane's hot flame produces immediate results at the point of contact, without needlessly burning the surrounding areas. The main products of propane combustion—carbon dioxide and water—leave no harmful residual matter in the soil or air.

Despite the inherent "burn" nature of this method of weeding, it is being used effectively for destroying weeds along fences, tree borders, water bodies, drainage ditches, golf course roughs and sand traps, flower bed edges, road verges, around buildings and monuments, in service yards, on rugged terrain and in many other hard-to-maintain areas.

Flame weeding also is the perfect tool where control and not complete destruction is the object. It is excellent for banks and ditches where brush and weed control is a definite problem, yet a root system must be maintained in order to avoid erosion of the soil.

Flaming also is a simply way to control weeds before they become fire hazards along roadways and in unplanted areas. At the same time, it safely eliminates trash, unwanted plant growth, overgrown hedges and other materials in which disease-bearing organisms, insects, mites and rodents breed.

In these days of escalating labor costs, hand cutting, weeding and subsequent clearing or finishing of an area often are prohibitively expensive. One man with one tank of propane and flame weeding equipment can, in a few hours, dispose of weed problems that normally would require weeks of attention. Only one person is needed to accomplish weed control and debris destruction jobs ranging from large ground-clearing operations to the most delicate, time-consuming chores normally requiring hand labor. Furthermore, this work can be done any time, even in the rain, when other methods would be impossible.

A consistent, well-planned program of LP-gas flame weed control gets right to the "heart" of the weed problem, cures it and leaves no "post-operative" complications.

Various terms are used to denote



Suburban Propane has two basic equipment plans. One is a three-foot torch and 100 lb. cylinder mounted on a cart for intermittent light to medium flaming. The other is a



trailer-mounted tank (325 to 500 gal., water capacity) easily towed by tractor or utility vehicle. Flaming destroys weeds by exploding the cellular structure of the plant.

methods of LP-gas weed control. "Non-selective burning" is the term applied when flame is used not only to kill weeds and annual grasses but also to kill-burn tops of perennial plants and row crops. "Pre-emergence burning" denotes the use of flame on a seeded area after weeds have come up, but just prior to the emergence of the seeded crops. This can kill a large percentage of weeds without damage to the crops themselves. "Selective burning" is the careful removal of weeds or other matter from specifically designated areas.

Suburban Propane, a pioneer in the LP-gas industry, has done much to popularize the economical "non-selective burning" method of weed control, which is finding increasing acceptance with golf courses, race tracks, parks, campsites, railroads, airports, cemeteries, apartment complexes, institutions and other establishments. Operation of approved LP-gas flame weeding equipment requires only minimal instruction.

One of the most complete flame weeding programs is offered by Suburban Propane, a major distributor of LP-gas with more than 150 centers in 33 states. Its over-all program includes a free demonstration at the prospective customer's location, providing the necessary equipment, training personnel, and scheduling delivery of propane to suit the customer's needs. Two basic equipment plans are offered by the company. The first, for intermittent light flaming to medium flaming, includes a 3 ft. "torch" and a 100-pound cylinder of propane which may be mounted on an easily maneuverable cart. The other, for medium to heavy-duty work, features an 8 ft. or 12 ft. "torch" and a 325- or 500-gallon (water capacity) tank of propane mounted on a fully equipped two- or four-wheel trailer, which may be easily towed by a tractor or utility vehicle. All equipment includes accessory fittings and has been approved by government regulatory agencies.

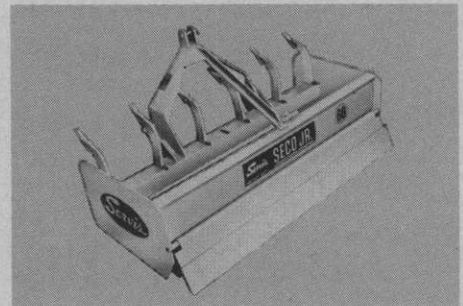
Many customers have bulk storage tanks installed on their own property from which the portable cylinder or tank can be refilled. This offers a convenient solution to a number of other problems because it represents an immediately available supply of propane for additional uses such as motor fuel for tractors, lift trucks and other internal combustion engines.

Further information may be obtained by circling (719) on the reader service card.

the budget scrapers

Servis' Automatic Lift-Trip Scraper pays for itself in time and work saved. Without leaving the seat, the operator can scarify and scrape at the same time...or level, grade, and backfill independently. Scarifier teeth raise and lock automatically when the box is raised. Teeth stay up until the operator "trips" the easy-to-reach handle. It's the most versatile and most productive box scraper on the market. Available in 66" and 72" models.

The SECO, JR. is a heavy-duty scraper for contractors who seldom need scarifiers. It saves money on the original investment. Scarifier shanks and teeth can be easily installed manually later, in either up or down position. Available in 66" and 72" models.



Servis

SERVIS EQUIPMENT COMPANY
Post Office Box 1590 Dallas, Texas 75221





To Trim a Tree Artistically

EDITORS NOTE: William Johnson, owner of Badger Tree Service, Phoenix, Ariz, said in a recent issue that it's time to "put the care back into tree care." It is necessary, he said, for a good tree trimmer to have an "innate sense of tree artistry." But he believes a tree trimmer can be trained also to do an artistic job. Here are Johnson's 10 suggestions:

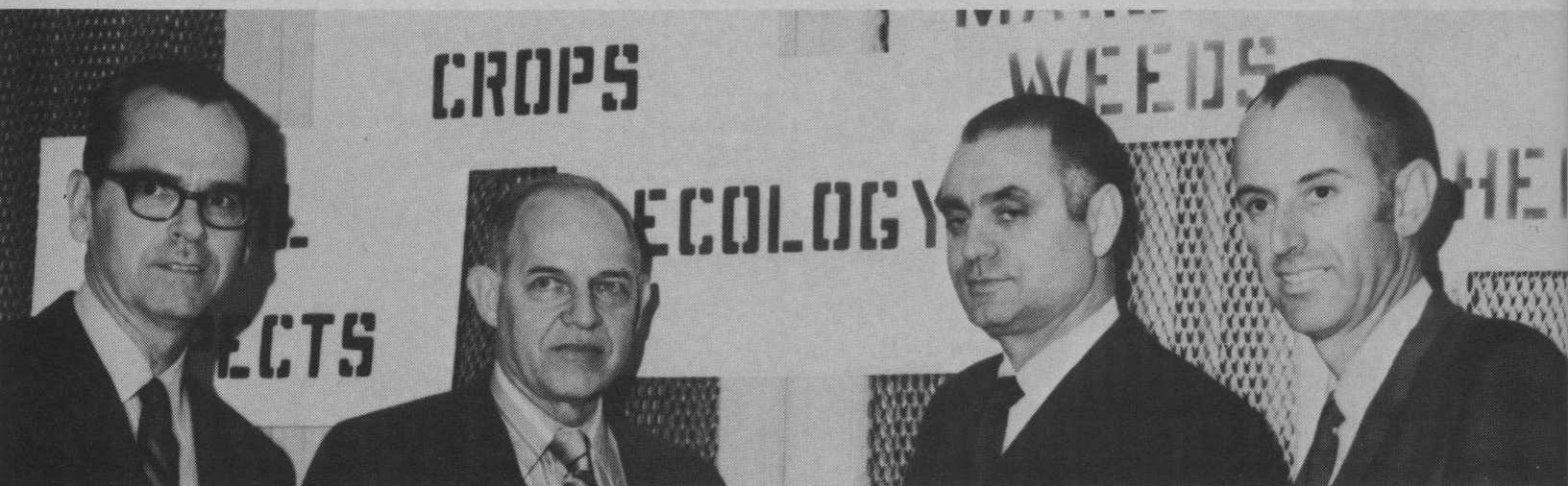
- 1.** First study it for its own particular characteristics—or "personality." Observe the structural lines that bring out these traits in a way that enhances the home and property.
- 2.** Check for limbs that may have particular aesthetic value. Plan these limbs into your overall design.
- 3.** Determine which limbs might be lifted with proper cabling, rather than being removed because they appear too low.
- 4.** Trim out the deadwood, suckers, crossing limbs, and so on.
- 5.** Carefully thin the tree. Make all cuts neat and close to the branch so there is no stubbing, no rough knobs.
- 6.** Trim unsightly limb extensions so tree outlines will be natural and pleasant looking.
- 7.** Observe tree again from all angles. Is it lacy? Does it have the lines you intended? Is your client happy?
- 8.** Finish tree by sealing all cuts with a good commercial tree wound dressing, preferably one that is penetrating.
- 9.** Leave a clean yard.
- 10.** At all times THINK SAFETY . . . WORK SAFELY.

the WISER winter izer

Most effective winter protection at lowest cost, WILT PRUF Anti-Transpirant prevents excess water-loss caused by drying winter winds. You can eliminate burlap windscreens. WILT PRUF saves shrubs, trees and roses all year round . . . from winter kill, summer scald, drought and city air pollution. Combats transplanting shock and extends the safe transplant season, too. *Write on your letterhead for 50-page technical manual of applications.*

WILT PRUF®

NURSERY SPECIALTY PRODUCTS, INC.
410 Greenwich Ave., Greenwich, Conn. 06830 / (203) 661-5840



Background signs spell out the emphasis of the 11th meeting of the Weed Science Society recently in Dallas. Some 700 weed scientists attended. The men will provide the leadership for the coming year. From the left, they are Earl

G. Rodgers, vice-president; Dayton L. Klingman, president; Phillip Upchurch, president-elect; and Paul W. Santelman, secretary.

WEED SCIENCE SOCIETY REPORTS

WHILE EXPRESSING “1,000% support” for improving the environment, the president of the National Agricultural Chemicals Association, called for a “switch from rhetoric to reason” in the regulation of environmental factors.

Parke C. Brinkley, addressing the 11th Weed Science Society of America meeting recently in Dallas, warned that without reason going into regulation of chemicals, “we could be trading one disaster for another.”

Each issue should be decided as though “our entire existence and way of life depended on the right decision,” he said, because each will have long lasting effects.

“Much of the rhetoric and emotion of recent months has tended to discredit the scientific community and the technology that has made this nation the envy of the rest of the world,” he continued. This same expertise, he observed, offers the major hope for development and application of techniques for environmental improvement.

Several speakers expressed concern that the restrictive atmosphere at present regarding pesticides could bring on disaster. Dr. Dayton L. Klingman, incoming president of WSSA, predicted that without chemicals and other technology, another 300 million acres — an area equal to the key states of Missouri, Kansas, Arkansas, Tennessee, Louisiana, Mississippi, and Alabama — would be needed to feed the U.S.

Dr. L. L. Danielson, outgoing WSSA president, said agricultural science is in trouble as the result of poor communications. “The public does not clearly understand its importance.”

“We are living in a period when the public is exposed to a continual barrage of communications that creates a subconscious fear of almost everything,” Dr. Danielson continued. “We are learning to fear food, water, air, transportation — even our fellow man.”

To make matters even worse, he said, “communication between scientists is also poor. We find some segments of science attacking others in the public and scientific press without first attempting to reconcile their differences.”

Some 700 weed scientists heard more than 225 technical papers covering virtually every aspect of weed control. While most papers were related to food production, several dozen pertained to control of vegetation in urban, industrial and aquatic areas.

Among resolutions, the Weed Science Society asked that weeds be “recognized as potential environmental hazards detrimental to the public health, welfare, and recreation, and that state, provincial, and federal funding of weed research be expanded.”

Manufacturer Responsibility

Herbicide manufacturers have

certain responsibilities to their customers, reminded F. A. Holmes of du Pont Company, in that herbicide users may overuse a new chemical or may have “idealistic expectations” on results. It is the responsibility of the manufacturer and his representative, Holmes said, to:

1. Have an adequate label on the uses for the product.

2. Know the strengths and weaknesses of the product so that result expectations are not oversold to the customer.

3. Provide sufficient information on the above in sales literature so the customer can make a sound decision whether to use the product. Many times this is the only guideline by which the customer can make a decision.

4. Only through proper information can a prospective user have the knowledge whether to use the chemical, what results can be expected, the possible negative results that may occur, and the overall effect of the use of the product on the crop, the user, and the environment.

5. A better environment is everybody's business and it depends in large part on adequate knowledge flowing from manufacturers and investigators to users.

Positive Pesticide Campaign

Walter Weber, technical director of pesticides for Indiana Farm Bureau Cooperative Association,

Weed Control Research in Aquatic Areas, on Turf, Ornamentals — Brush Control

Inc., reported on a program to promote the idea that there is a "Safety Side in Every Pesticide." Four channels are being used.

A static set of about two dozen signs stressing affirmative viewpoints was furnished to county cooperative stores, vocational agriculture teachers and agricultural extension agents. These are to be used in county fairs, the state fair, and in similar situations.

A second project is the sponsorship of a statewide essay contest, "Protecting Our Environment Through Sensible Pesticide Use." There are five classes: (1) students up to and including the eighth grade; (2) high school students; (3) college students; (4) adult farmers; and (5) adult non-farmers.

A third project has been to prepare articles on the benefits of pesticides, and to answer the critics. This included letters to editors, radio and TV interviews, information for employees, and news articles.

A set of slides on the safety theme is the fourth project. These are used by farm chemical fieldmen at every

available opportunity, showing them to church groups, youth groups, students, Farm Bureau meetings, garden club meetings, and service clubs such as Rotary, Lions, Kiwanis, Optimists, and so on.

Following are capsule summaries of some of the papers given on control of vegetation in the urban and non-crop areas.

Aquatic Weed Control

Irrigation water treated with acrolein controlled aquatic weeds and did not reduce yields of sugarbeets, soybeans or corn. In experiments at Prosser, Wash., acrolein was applied to crops at 0. 0.1, 0.6, and 15.0 parts per million in two-acre-inches of water by furrow and sprinkler irrigation. Furrow-irrigation treatments lasted one hour and 15 minutes, and the sprinkler treatments eight hours. — Victor F. Burns, USDA Agricultural Research Service, Beltsville, Md.

Diquat, endothall and 2,4-D do not translocate basipetally in Eura-

sian watermilfoil or hydrilla verticillata. The lack of basipetal translocation to reproductive structures buried in the hydrosols may explain why regrowth occurs so readily after herbicide treatment. — Kerry K. Steward, USDA Agricultural Research Service, Fort Lauderdale, Fla.

Combinations of copper sulfate pentahydrate at 1.0 ppmw of copper plus diquat; paraquat; ametryne, atrazine; 2-tert-butylamine-4-(ethylamino)-6-(methylthio)-3-triazine; or 2,4-D increased the copper content of hydrilla when compared with plants which were treated with copper sulfate pentahydrate alone. The concentration of organic herbicide and contact time affected this increased uptake of copper. The addition of fenac, dichlobenil, diuron, the mono (N,N-dimethylalkylamino) salt of endothall, or dinitrophenol to this copper compound had no effect on copper uptake. Ametryne at 1.0 ppmw plus copper sulfate pentahydrate at 1.0 ppmw of copper exhibited a synergistic response on hydrilla as determined by dry weight and was associated with a high con-

WE'RE GOING NATIONWIDE WANT TO COME ALONG?

Last year on Long Island, New York we proved that American Bio-Turf, our bio-chemical soil conditioner, is a practical, profitable business as well as an effective way to relieve compaction, break down thatch, promote water penetration and reduce maintenance costs. It works on golf courses and other large areas of turf. Repeat as well as initial sales are available.

Now we are ready to expand into a nationwide business. You have the opportunity to affiliate as the exclusive licensed dealer for American Bio-Turf in your market area.

We are ready to make an attractive agreement with qualified applicants. Get in touch with us if you want to know more about the Long Island results and are interested in the details of our licensing agreement.



AMERICAN BIO-TURF
a division of
AMERICAN BIOCULTURE, INC.

720 Bryant Avenue, Roslyn, Long Island, New York 11576

**FOR
POSITIVE
WEED
CONTROL
TRIMEC®
TURF HERBICIDE
MAKES THE
DIFFERENCE!**



Now you can have positive control of hard-to-kill weeds in cool as well as warm temperatures on a variety of 2,4-D resistant weeds.

Trimec turf herbicide is a patented combination of herbicides that display "synergism" and controls hard-to-kill weeds at lower rates than normally needed with the individual herbicides you're now using.

Gordon's Fairway Broadleaf Herbicide is in a class by itself. It contains 2,4-D, MCPP and Dicamba in a patented formulation which controls virtually all broadleaf weed species, while the individual herbicide components do not. It is the patented "synergism" of the formulation that makes the difference.

Call 913/342-8780 today, or write Gordon's about new Trimec Fairway Broadleaf Herbicide and other Gordon turf care products.



PBI - GORDON CORPORATION

300 South Third St.
Kansas City, Kansas 66118
A.C. 913/342-8780

**TRIMEC®
TURF HERBICIDE
MAKES THE DIFFERENCE!**

centration of copper. Phosphorous levels of hydrilla were reduced by 0.1 and 1.0 ppmw of diquat and paraquat. Hydrilla treated with a combination of 0.1 ppmw of paraquat and copper sulfate pentahydrate at 1.0 ppmw of copper contained 0.34% less phosphorus than plants treated with paraquat alone. The phytotoxic effect of the herbicide combination on hydrilla may be due principally to an increased accumulation of copper and a reduction in phosphorous content.—David L. Sutton, R. D. Blackburn, K. K. Steward, University of Florida and USDA, Fort Lauderdale.

Presence of established sod-like growth of slender spikerush facilitated the non-use of herbicides for aquatic weed control in two canals and one reservoir in central California. Slender spikerush, a short growing rhizomous perennial, competes with certain rooted aquatic weeds, including sago pondweed, curlyleaf pondweed, American elodea, small pondweed, and horned pondweed. — R. R. Yeo, USDA-ARS an University of California, Davis.

Diquat and paraquat evaluated over a three-year period in 0.5 and .75 acre ponds had no effect on fish population. Ponds were treated with 1 ppmw once in a single year. — Robert D. Blackburn and Thomas M. Taylor, USDA-ARS, Fort Lauderdale, Fla.

Two methods of handling aquatic vegetation harvested mechanically have been studied at the University of Wisconsin. One is to fluidize by intensive chopping and grinding, reducing the vegetation to a slurry that can then be handled as a fluid. The other method is to mechanically dewater the vegetation by chopping and pressing. The fluid fraction is returned to the body of water while press residue is reduced to 12% to 16% of the original volume and 23% to 32% of its original weight. About 90% of the original solids, 85% of protein, 60% of the potassium, and 80% of the phosphorus present in the vegetation at harvest is removed in the press residue. — H. D. Bruhn and D. F. Livermore, University of Wisconsin.

Four to five beetles, *Agasicles n. sp.*, per sq. ft. are needed to produce a noticeable effect on alligatorweed. The beetle will not completely eradicate the weed, but reduce it to a point where competitive plants can come in. It is highly unlikely the beetle will be effective for every area where alligatorweed grows. — Neal B. Spencer, USDA-ARS, Gainesville, Fla.

Herbicides on Turf

Kentucky bluegrass exhibited greater tolerance to bromacil than tall fescue or orchardgrass in Virginia tests. Plots were sprayed post-emergence at 1/8, 1/4 and 1/2 lb./acre. Chlorosis and leaf tip die back of the three grasses appeared about 1 1/2 weeks after application. At the 1/2-lb. rate, compared with control, clipping weights of bluegrass, tall fescue and orchardgrass were reduced 20%, 65% and 75%, respectively. Carbohydrates were reduced 15% in bluegrass, 48% in tall fescue and 51% in orchardgrass. Photosynthesis rate was reduced 33% in bluegrass, 57% in tall fescue and 71% in orchardgrass. — J. W. Shriver and S. W. Bingham, Virginia Polytechnic Institute.

Preemergence crabgrass herbicides have different effects on the vegetative development of bermudagrasses. Two-inch plugs of Tifton 328, Tifton 419, Tifdwarf and No Mow were treated in the field with granular applications of benefin (3 lb./a.), bensulide (12.5 lb./a), DCPA (12 lb./a), siduron (10 lb./a), nitrilrin (2 lb./a) and terbutol (12 lb./a). Plugs were removed from the soil about six and 12 weeks after application. One experiment was conducted each of three years, 1968-70. Significant differences from the check occurred only for normal and abnormal rooting at the nodes and stolon weight. Siduron most adversely affected top growth (stolon weight) of all four grasses. All herbicides greatly affected normal rooting of all grasses at the sixth week observation. Differences from the check were significant for No Mow, Tifdwarf, and Tifton 328. Normal rooting had increased at the 12th week observation. However, rooting was considerably less than the check. There was greater increase in rooting in the benefin treatment. — W. M. Lewis, North Carolina State University.

Brush Control

A new herbicide incorporation technique promises more effective control of woody plants that are known to be highly resistant to foliar-applied herbicides. USDA agronomist Everett B. Hollingsworth modified a standard root plow for subsurface placement of liquid chemicals. Called a Chem-Plow, the machine can place herbicides precisely where they'll be the most effective—in the soil at the roots, said Hollingsworth.

The Chem-Plow was developed jointly with Paul C. Quimby and

Try Tandex on your own impartial panel of weed control experts.



Tandex can give you a more economical ground maintenance program.

Tandex is a soil sterilant. And it's proven its weed-killing power for use around industrial plant sites, storage areas, lumberyards, tank farms and the like. Broadleaf weeds, grasses,

even woody species die when Tandex is applied. And its power persists for a season or longer.

Spray wettable Tandex powder (WP 80) or use the granular form. The handy five-pound plastic container is especially convenient. Tandex can be combined

with fortified oils and other herbicides for special control situations.

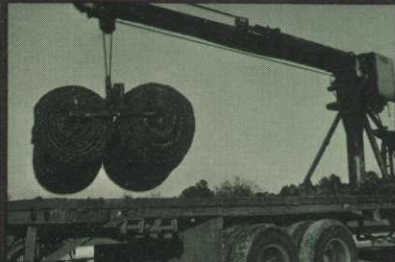
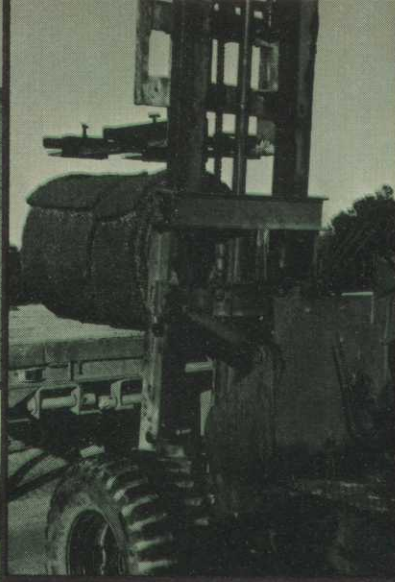
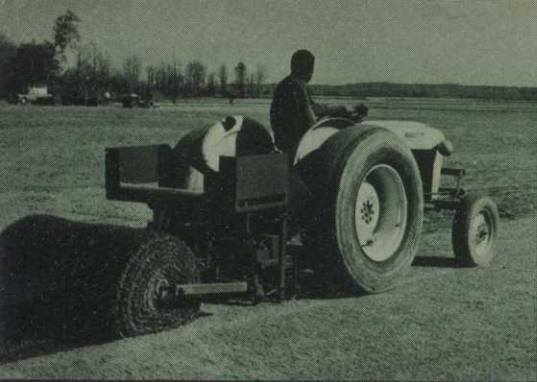
Write to Department A, Niagara Chemical Division, FMC Corporation, Middleport, N.Y. 14105.

Tandex[®]



Industrial Chemicals, Niagara Chemical Division, Middleport, New York 14105

For More Details Circle (131) on Reply Card



U. S. PATENTED LAWN-O-MATIC PLUG PLANTER

Five average lawns, front and back, can be planted in one day by two men. Available in 1-, 2-, or 3-row machines. \$895.00

Beck's new Sod-O-Matic* laying system is proven. Two men can lay sod faster and smoother than a large crew using the old "manual" system.

- * These are pictures of Beck's Sod-O-Matic System, harvesting, and transporting sod rolls. This crew, shown laying sod rolls on an actual landscaping job, is inexperienced.
- * Sod may be laid quickly and easily with simple tractor attachments. Hydraulic model \$250.00; manually adjusted model \$150.00. For areas inaccessible to a tractor, the hand-laying device may be used (\$25.00).
- * 3% to 5% stretch, when laying sod, will pay for the Laying Device.
- * No problems with trees, patios, and ditches.
- * Meets highway specifications. Sod can be supplied in a thickness of 1/2" to 2", as required.
- * "Throw-away" paper tubes eliminate the need for pallets.
- * Designed and developed for use in our sod operations.

*Patent Pending

Ask your supplier, or write:
Beck Manufacturing Company, Inc.
P. O. Box 752
Auburn, Alabama 35830
(205) 887-3730

BECK

MANUFACTURING CO.

For More Details Circle (147) on Reply Card