

WEEDS

TREES

and TURF

FORMERLY WEEDS AND TURF

October 1965

Thatch Control
and Equipment
to Use
Page 8



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Don't Start My Way! . . . 18
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Monthly magazine of methods, chemicals and
equipment for vegetation maintenance and control



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Dutch elm disease control FALL vs. SPRING

Effectiveness... product selection... application... storage... other tips for your spray program.

If you are undecided about whether to spray for Dutch elm disease control this fall or wait until spring, or about which product to use and how to use it, here are some facts and common sense pointers that can be of help to you.

Are fall-applied sprays as effective as those applied in spring? Most authoritative researchers have stated that DDT sprays applied in the fall are *just as effective* in preventing elm bark beetle feeding, during the period of tree susceptibility to Dutch elm disease, as sprays applied in late winter or early spring. Our co-operative research tests with a Midwest University bear out this conclusion. Other researchers have stated that fall sprays are *not quite* as effective as spring-applied sprays.

Now, some common sense pointers. The broad, over-all problem of *getting sprays applied* should get primary attention, rather than placing too much emphasis on a *possible* small decline in effectiveness with fall spraying. And fall spraying has several important advantages:

1. There usually are *more good spraying days in the fall* than in spring. It would seem that it is better to do a thorough job of spraying in the fall, even with a *possible* slight decline in effectiveness, than to spray trees in the gusty winds of spring and get 100% effectiveness on only *half portions* of the trees.
2. You get *better distribution of work loads* by beginning your Dutch elm sprays in the fall and finishing in spring.
3. There are *fewer problems with birds and other wildlife* (real or imagined) when you spray in late fall.

We of American Oil have "no ax to grind"—it makes no difference to us whether the sprays are applied in fall or spring. We believe that the important thing is to do a good job of spraying *all* the elm trees and to save as many of our beautiful elms as possible.



Mist blower being filled with AMOCO Elm Spray, to control Dutch elm disease on city parkway.

Which spray is better... DDT-White Oil or DDT without White Oil? U. S. D. A. authorities have stated, and our own co-operative research tests at a Midwest University show, that there is no evidence of a difference in the lasting

effectiveness of one type of spray over the other. We have excellent sprays of *both* types. AMOCO® Elm Spray (25% DDT plus White Oil) is the "old standby" in many Dutch elm disease control programs—proved effective in wide commercial use since its introduction in the early 1950's. Many arborists note that there are fewer problems with car spotting or paint damage with the DDT-White Oil spray. AMOCO® Elm Spray-32.4 (32.4% DDT in a carefully selected xylene solvent), marketed since 1960, has also given very satisfactory results. For maximum safety to birds when spraying is delayed until late spring, we also offer AMOCO® Methoxychlor Spray.

Can sprays be applied in freezing weather? Research and experience say, "No!" Freezing spray means a reduction in amount of deposit and length of effective period, and may even cause damage to the trees. Don't spray if there is a chance of the spray freezing before it dries on the tree.

What about storage temperatures? AMOCO Elm Spray should be stored at temperatures above 40° F. to avoid DDT crystallization—AMOCO Elm Spray-32.4 should be stored above 32° F. However, if these products are stored below recommended temperatures and DDT crystallization has resulted, merely warm up the contents of the barrel by placing it in a warm room, or in sunlight on a warm day. If there is heavy DDT separation, roll the barrel occasionally.

A few words about prices. We believe you'll find our prices competitive with those of any other reputable supplier. And perhaps of even greater importance than price is the assurance of strict quality control and technical assistance that you expect... and get... from American Oil. After all, *results* are the important thing, and material costs are a relatively small portion of your total spraying costs.

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American Oil Company
Tree Spray Products Dept.
910 S. Michigan Ave.
Chicago, Ill. 60680

Send the 16 mm. sound-color film on Dutch elm disease for showing on _____ (date) _____ or _____ (alternate date) _____. Size of group to see film will be approximately _____ persons.

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AMERICAN CANCER SOCIETY

WEEDS TREES and TURF

FORMERLY WEEDS AND TURF

October 1965
Volume 4, No. 10

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Self Protection

Scientific advances are accelerating at an unprecedented pace, including the development of ultrasensitive devices that detect the most minute pesticide residues in food, soil, and water. A recent news story heralded the development of a device so sensitive that it can determine the presence of as little as eight billionths of a gram of some phosphorus insecticides!

While we cannot but hail this scientific achievement, we wonder how really significant this instrument is to the commercial applicator. Ever since man has learned how to use chemistry to prolong life, he has used minute quantities of highly toxic materials to improve our health and the food we eat.

At the recent International Shade Tree Conference, Louis A. McLean, secretary of Velsicol Chemical Corp., said, "Unfortunately, through recent history of pesticide detection and controversial materials, rules of the game changed as each new and more accurate instrument was developed. The objective has always been safety, not useless exercises in mathematics."

The National Academy of Sciences suggests that "zero" tolerance should mean "negligible" and "permissible" residues to assure adequate food supply and health protection.

While the controversy continues, however, spraymen everywhere must safeguard themselves against the possible adversity that might occur if someone, at some later date, determines an application might have caused a newly detected "harmful" residue.

With the increased emphasis on preventing pesticide residues in food and feed crops, it is more important than ever to keep accurate records of all pesticide applications. Besides allowing the operator to make sound management decisions and help him avoid waste, they also protect him if the question of pesticide residues occur.

Records should indicate the name of the pesticide used, amounts used, rates of application, and when, where, and how it was applied. Environmental circumstances such as weather and soil conditions during application, labels from pesticide containers, and date sprayer or application equipment was calibrated should also be noted.

Accurate records may keep spraymen from being involved in a lawsuit. It's a matter of self protection.

WEEDS TREES AND TURF is the national monthly magazine of urban/industrial vegetation maintenance, including turf management, weed and brush control, and tree care. Readers include "contract applicators," arborists, nurserymen, and supervisory personnel with highway departments, railways, utilities, golf courses, and similar areas where vegetation must be enhanced or controlled. While the editors welcome contributions by qualified freelance writers, unsolicited manuscripts, unaccompanied by stamped, self-addressed envelopes, cannot be returned.

WTT Mailbox

Needs Aerial Spray Data

On page 32 of the July, 1965, issue of *Weeds Trees and Turf* you have an article dealing with aerial application of pesticides. Would you kindly forward the address of the University of California engineers who could supply more information on the results of their studies?

J. F. Winter

Chief Forester
The Hydro-Electric Power
Commission of Ontario
Toronto, Canada

Correspondence on this subject should be addressed to Mr. Wesley E. Yates, Department of Agricultural Engineering, University of California, Davis, Calif.—Ed.

Interest in Sod

I would like any available information on the commercial production of bluegrass sod for our area.

Glenn Hyde

Gothenburg Nurseries
Gothenburg, Nebr.

We don't have information on this specific subject in our files since we are just beginning to compile data on commercial production of cultivated sod in the United States. For specific information we suggest you write to Dr. Eliot C. Roberts at the Iowa State University in Ames. Dr. Roberts is a noted turfgrass specialist who has specific information as it relates to the Iowa-Nebraska areas and could certainly help you a little more than we at this point.—Ed.

From an Arborist

You have a lively, interesting magazine. The arborist industry is in need of a serious, professional-type periodical. Good tree-men possess a broad array of skills and knowledge easily recognized when viewing the amount of equipment a modest-sized arborist must possess these days to be proficient.

I'd like to see *Weeds Trees and Turf* magazine become the principal news and information medium for the arborist indus-

try. I'm sure you can do it and I'm rooting for you.

I. J. Borger

Trees and Gardens, Inc.
Bayside, N. Y.

On Capitalization

I enjoy *Weeds Trees and Turf* endlessly and the articles are the greatest. I refer to the article on St. Augustine grass in the March '65 issue. You can't call it st. augustinegrass and you can't call it st. augustine. That's a man's name! You can't even lowercase Paris green and Bermuda grass until after years and years and years, and they're only the names of places. A man's name is always capitalized... isn't it?

Austin W. Morrill, Jr.

District Public Works Office
12th Naval District
San Bruno, Calif.

Lowercase is IN these days... we're advised. The editorial department and our biologist have numerous references that st. augustinegrass is diminuated. This is according to the Nomenclature Committee of the Turfgrass Section of the American Society of Agronomy, and Dr. Schery, who also lowercases st. augustinegrass in his books.

Here's ASA's comment on capitalization:

"1. Recognized variety names should be capitalized (Penncross bentgrass, Tifgreen bermudagrass, Meyer zoysiagrass, Merion Kentucky bluegrass)... Proper nouns derived from names of persons and places when used separately in the common name should also be capitalized (Kentucky bluegrass, Merion Kentucky bluegrass, Indian ricegrass, Canada wildrye, and Japanese lawngrass).

"2. Do not capitalize common names (redtop, quackgrass, wheat grass, bluegrass, bentgrass); nor names derived from persons or places when used in combination with a suffix (johnsongrass, rhodesgrass, bermudagrass, dallisgrass)."

Thus it would appear "st. augustinegrass" is correct in Dr. Schery's article, but perhaps the author is incorrect when he writes "st. augustine clones."—Ed.

He Likes WTT, Too

I have just seen a copy of *Weeds Trees and Turf* and believe it to be a very desirable publication in the field of turf. In my position as Extension Specialist, responsible for turf in the state of Ohio, it is very desirable that I be informed on materials and equipment available to turf producers in Ohio. In addition to the information provided on materials and equipment in *Weeds Trees and Turf*, the technical articles on problems of turf production are equally valuable.

Don W. Griffis

Extension Agronomist
Cooperative Extension Service
Columbus, Ohio

It Must Be Bidrin

We are interested in knowing the name of a firm that sells a chemical injection for elm trees to prevent Dutch Elm disease. We would use this product commercially and if you have a company or firm in your list of advertisers who could help us in this matter we would appreciate putting us in contact with them.

Don Kamban

Schoenbrunn Evergreen Gardens
New Philadelphia, Ohio

We believe you are referring to a product of the Shell Chemical Company known as Bidrin. This product is sold only to professional tree people who have completed a training course offered by the Shell organization. We suggest you write directly to Mr. Harry T. Fenton, Agricultural Chemical Division, Shell Chemical Co., 110 W. 51st St., New York, N. Y. 10020.—Ed.

West Indies Response

Just a short note of thanks for your new Sod Industry Section in *Weeds Trees and Turf* magazine. We sure appreciate it, and found the first section extremely interesting.

Frank Lichtig

Grasmalindas, CIA
Bayamon, Puerto Rico

Weeds Trees and Turf welcomes expressions of opinions from its readers. Send ideas and comments briefly as possible to James A. Nelson, Editor, *Weeds Trees and Turf*, 1900 Euclid Ave., Cleveland, Ohio 44115.

The Thatch *problem*

By DR. ROBERT W. MILLER

Assistant Professor

Ohio State University and Ohio Agricultural Experiment Station
Columbus, Ohio

Thatch harbors many microbes. White areas in photo below show disease-causing fungus mycelia at work. Note the moldy appearance of the white patches.



THATCH has long been recognized as a problem on highly managed turfgrass areas. Golf course superintendents have aerified and top-dressed greens for many years. Part of the benefit from these management practices has been to control or at least reduce the ill effects of thatch buildup.

We might first answer the question "What is thatch?" Musser,¹ in his book *Turf Management*, has defined thatch as the accumulation of a dense felt of undecomposed dead roots and stems through which water cannot go down through. This definition applies to what I would consider advanced stages of thatch accumulation. Thatch accumulation, also called felting and matting, could perhaps result in adverse conditions for good turfgrass production before water penetration is completely eliminated. Wise,² in his text, *The Lawn Book*, has defined thatch as a layer of undecomposed stems, stolons, roots, and leaves that form between the soil surface and the visible green vegetation. Thatch may be thought of as dead plant parts between the soil and the crown of the growing plants. It is a continuing process beginning with the first minute formation of an organic layer and proceed-

¹H. Burton Musser. *Turf Management*, McGraw-Hill Book Company, Inc.
²L. N. Wise. *The Lawn Book*, Bowen Press, Inc.

- What it is
- What to do about it



Top-dressing layers are successively stratified in this thatch chunk. Layers show that during the war years no top dressing was applied; Later soil was aerified. Aerifying mixed the layers (see wavy lines) and gradually helped break up the layers where roots are now seen.

ing until in a few cases layers of thatch as thick as ten to twelve inches have been reported.

Thatch Hinders Water, Minerals and Pesticides

What effect does thatch accumulation have on turf quality? Thatch appears to hinder plant growth in many ways. Mineral elements applied on the surface are intercepted before they reach the soil. Because of this and other reasons, plant response to fertilization is impeded. Larger applications become necessary to meet needs for good plant growth and often increased fertilization will not correct the problem.

The undecomposed layer of dead plant parts creates a good environment where disease organisms and insects multiply and will thrive. This coupled with the decreased effectiveness of fungicides and insecticides caused by mat formation increases pest control problems manifold.

As mentioned by Dr. Musser in his definition of thatch, water penetration is greatly inhibited. It becomes necessary to apply larger and larger amounts of water to meet plant needs as thatch accumulates. Even with increased watering, the plant-water relationship leaves much to be desired.

The overall effect of thatch buildup is a turf low in vitality, easily subject to drought, and often affected by disease and other pests. The weakened turfgrass plant is easily injured by any stress conditions which may develop as a result of adverse environmental conditions.

What Causes Thatch?

Why does thatch develop? This is a question that will require much work if answered properly. Any condition that increases vegetative production and the subsequent death of plants or plant parts favors thatch development. Likewise, any factor that slows down organic decomposition favors matting. The real question thus becomes "What management practices may I use to reduce plant mortality and at the same time increase the decay of organic matter at the soil surface?"

Although most turfgrass species are perennials, an individual turfgrass plant does not live forever. Plants are continually dying and are being replaced. Many plant parts are replaced annually in the normal sequence of growth. The majority of roots of most perennial grasses die each winter, and new ones are

formed in the spring. All of this contributes to thatch buildup. In addition, management practices used to grow quality turf produce more plants and more vegetative growth per unit of area. This is one of the reasons why the worst thatch problems are found in turfgrass grown under high management systems.

Several factors are thought to contribute to decreased decay of thatch. Many of these factors, however, have not been substantiated by research. It is known that the microorganisms that decompose organic matter require high pH levels. Because of this, soil acidity has been listed as one cause responsible for matting. It should be mentioned that thatch problems have often been encountered on soils with pH levels near neutral (7.0). This does not necessarily mean that the pH level at the soil surface is neutral. Decomposition of organic materials results in acid conditions. Even though the soil pH may be high (alkaline), the pH level in the thatch layer could be quite low, or acidic. More research is needed to understand the relationship of pH to thatch accumulation.

Another factor often blamed



for thatch accumulation is the use of pesticides. It is thought that the use of pesticides may kill microorganisms that decompose organic materials. Thus, while one problem is being corrected another one may be added. As with pH, much research is needed to evaluate the effect of pesticides use on matting.

The process of decay ties up two materials necessary for plant growth. These are water and nitrogen. Insufficient amounts of either or both of these will contribute to felting. Oxygen is necessary for the growth of microorganisms. Poor soil aeration, therefore, may be expected to add to the thatch problem.

Grasses such as bermudagrass and zoysia are fibrous in nature and resistant to decay. Likewise, some plant parts are more resistant than others. Stems and roots decompose slower than leaf tissue.

One of the first management practices usually thought of in connection with matting is mowing. High and infrequent mowing has been reported to favor thatch buildup.

Along with mowing, returning grass clippings is often thought to be of primary importance in felting. Although clipped grass contributes to the total thatch problem, it is unlikely that it is one of the most important factors. As mentioned earlier, leaves decay faster than other plant parts. The fact that thatch problems exist in turfgrass where all clippings are removed is ample evidence that other factors are also important.

Once a layer of thatch has formed, conditions are improved for future accumulation. Each year as new roots are formed from the crown of the plant they must grow through the thatch layer to reach the soil surface. The following year many of these roots die adding to the organic materials already

Don't Turn Your Back . . .

. . . on the best training aid you can find for weed and brush control, tree maintenance, or turf management crews. It's WEEDS TREES AND TURF, full every month of new how-to-do-it articles and news features designed to help you do a better job. Staff research, close liaison with university, government, and industry research personnel, and

broad industry contacts all team up to make WTT, at \$3 a year or \$5 for two, your very best buy. If you're not receiving WEEDS TREES AND TURF every month, or if you have to borrow a copy from one of your colleagues, use the handy order blank below to get your own personal copy every month!

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At Last... An Answer to Thatch Problems!

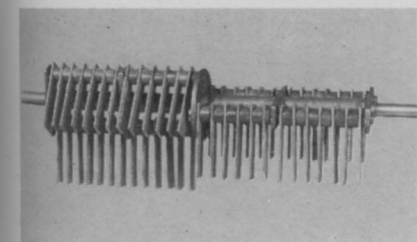
Thatch... a relatively new term, but a growing problem each year. We, at "Blue Bird", recognized the need for mechanical means of solving this thatch situation five years ago.

Turf Management Headaches

We had learned from turf authorities that thatch meant many things, each a headache to turf management: plant growth was hindered; fertilizers couldn't reach the soil; water penetration was inhibited. Plus the fact that this matting provided an excellent environment for disease. Yet no means of removing it was available except the back-breaking chore of using a hand rake.

Machine Built to Do the Job

Thus the "Blue Bird" Lawn Comber was born. And from its beginning, it was built to do the job *you* want it to do. We made it durable... a unit for commercial use. Flexible blades *comb*



Here's the Heart of the "Blue Bird"... a Multi-Bladed Rotor of Free-Swinging, Case-Hardened Blades.

out the thatch, but because these blades are free-swinging, they bounce back when encountering rocks or other obstacles... no metal fatigue, no costly breakdowns.

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Why? Because of the speed with which the "Blue Bird" completes a job. Because of performance... thoroughness no other unit can boast.

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And because of durability. We offer a warranty unprecedented in the industry. The "Blue Bird" Lamb Comber is guaranteed unconditionally against any breakage for one full year! One full year of commercial use. Which guarantees *you* continuous top performance, with no expensive downtime. Job after job... month after month.

Complete Customer Satisfaction

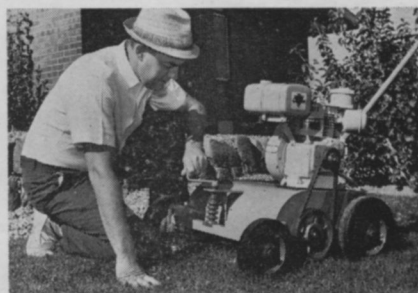
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Blue Bird

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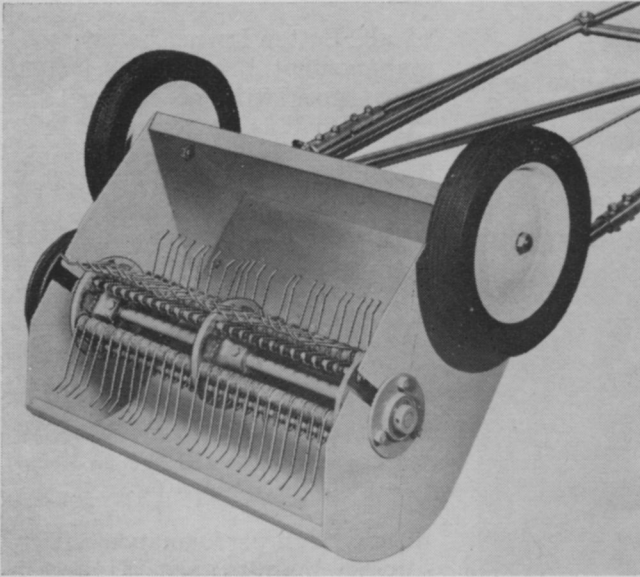
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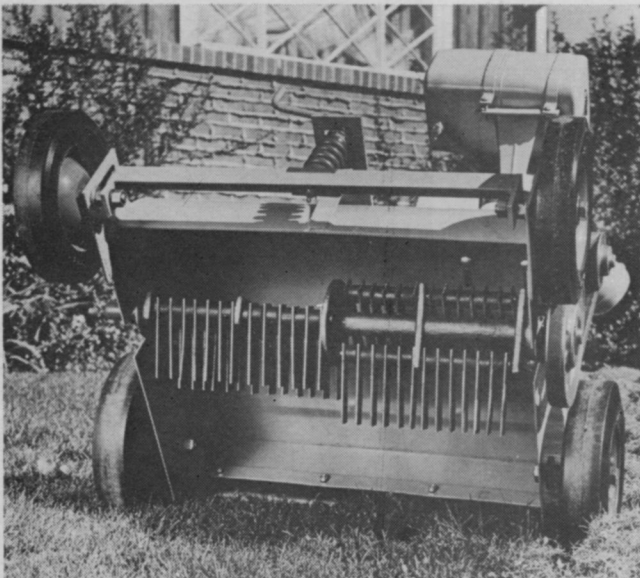
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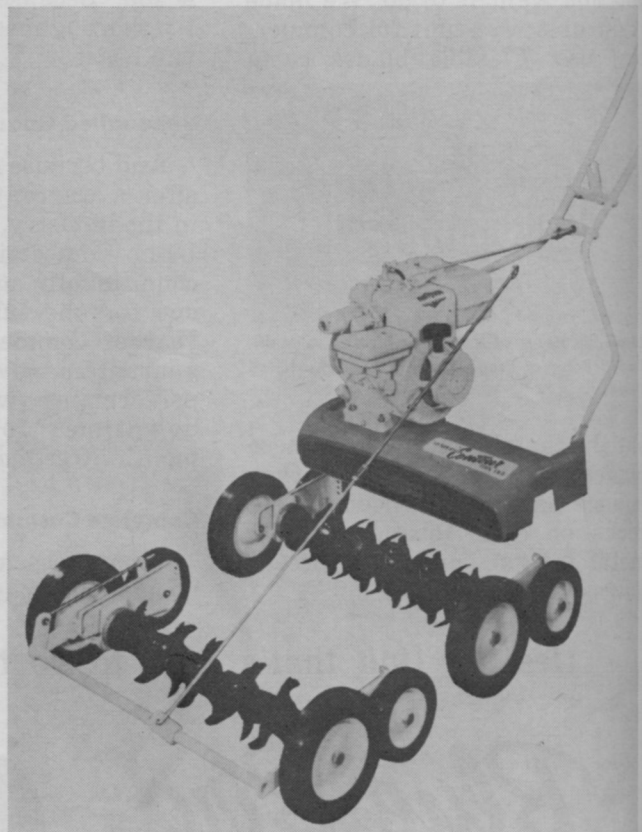
Panorama of De-thatching Equipment



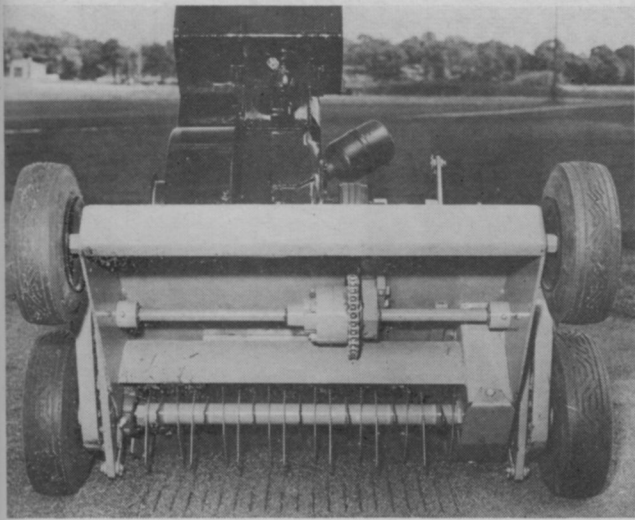
Thatch-O-Matic Model PR-6316 (left), from Parker Sweeper Co., has 104 rotating and self-cleaning tines and is powered by a 3 h.p. engine with a centrifugal clutch and recoil starter. Tine reel runs at 1200 R.P.M. or 125,000 tine-contacts per minute. Tines are said to be designed to comb out debris without mutilating the sod. Pictured below is a huge pile of thatch raked from sod with this Thatch-O-Matic.



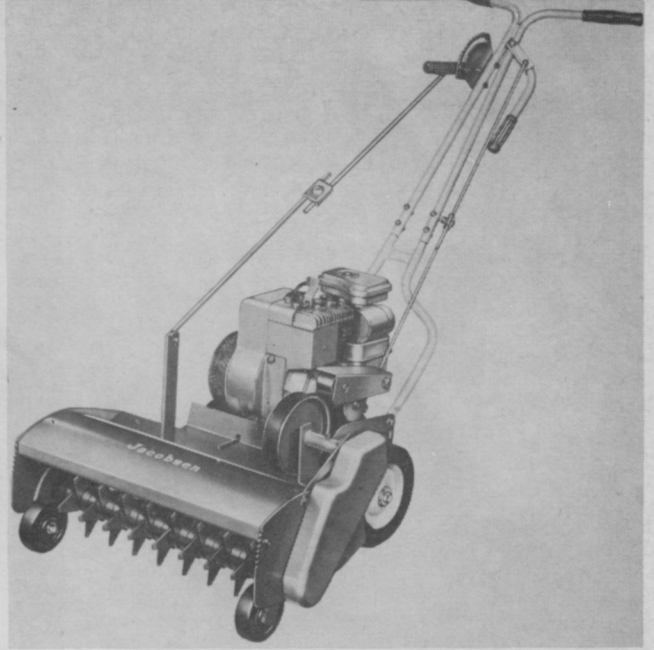
Blue Bird Lawn Comber, manufactured by Rental Equipment Manufacturing Co., is powered by a choice of engines ranging from 3½ h.p. to 6 h.p. The rotor, with its ⅛-inch steel blades, rotates at 1400 R.P.M. Blades are 4 inches long and cut depth is adjustable. Thatch is said to be removed easily from both bluegrass and bermudagrass by the free-swinging blades.



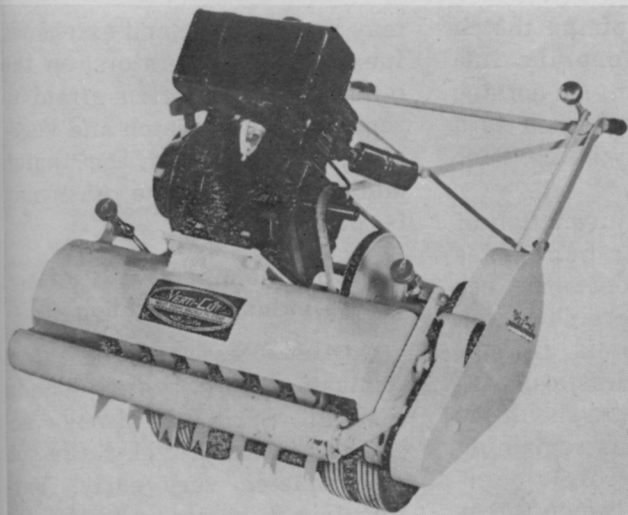
Contour Thin-Cut Renovator, Model 18, made by Henderson Manufacturing Co., cuts 18" vertically to the ground line, removing thatch and other undesirable material without harm to soil. Powered by either 3 or 4 h.p. Briggs & Stratton engine. Fifteen double-end steel blades cut grasses up and away from the operator for extra safety. Interchangeable Cyclo-Safe cutter unit (shown under housing) converts unit to a lawn mower.



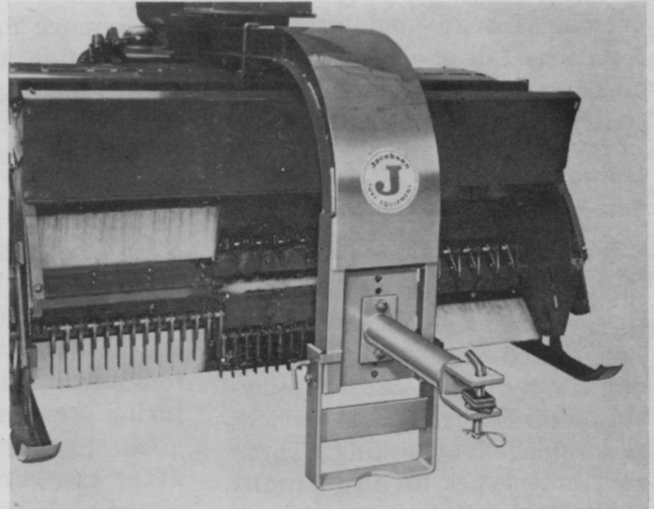
Mat-A-Way has 9 h.p. Briggs & Stratton engine with a triple V-belt drive. Blades cut from top of the turf with a downward action in the direction of travel. Blade reel is mounted on the center line of the drive wheels and is geared to revolve at 4,000 R.P.M. Slicing depth is adjustable; reel has both forward and reverse rotation. A variety of reel assemblies fit particular needs. Mat-A-Way is produced by Ryan Equipment Co.



Lawn Renovator has 25 hardened steel blades which lift, cut, and accumulate dead grass from turf. Blades can be individually removed without removing entire renovator. Powered by 4-cycle, 3 h.p. engine which has an automatic rewind starter. It also prunes, aerates, and cultivates grass plants. A product of Jacobsen Manufacturing Co.



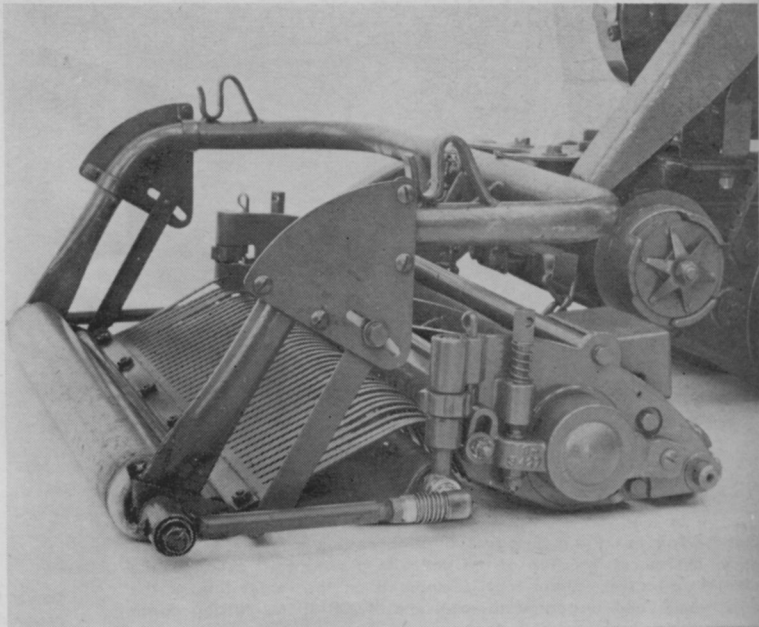
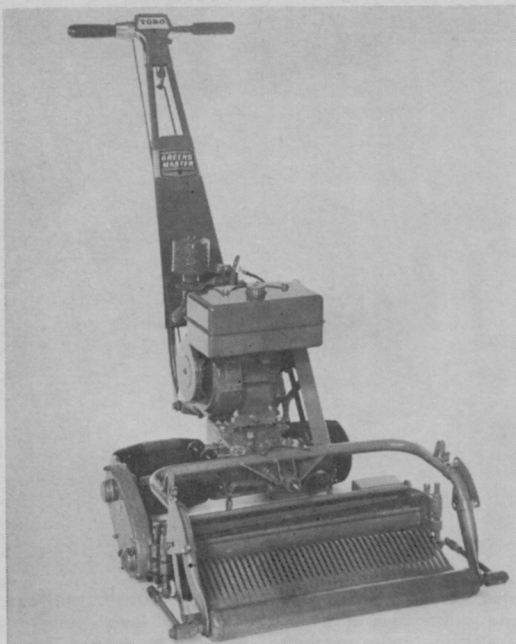
Verti-Cut Mower, Model VC-4, cuts rather than combs or rakes. Cutting reel rotates at 2800 R.P.M., and 30 blades, each with two cutting tips, spin to clean out thatch. Blades cut through the thatch and into the soil to thus renovate the turf. West Point Products is the manufacturer.



Turf Groomer is powered by a 24 h.p., air-cooled Kohler engine. From the rear, polypropylene brushes and 84 $4\frac{5}{8}$ -inch long carbon steel blades, free thatch-laden turf from its matting. Blades are adjustable to depths of $9\frac{3}{4}$ inches in $\frac{1}{8}$ -inch increments. Thatch and brushed grass are sucked up and blown to a catch trailer leaving turf in clean, renovated condition. Turf Groomer is also made by Jacobsen Manufacturing Co.

Turf Groomer pulled by a vehicle blows waste into trailing bin. Trailer is $11\frac{1}{2}$ ft. long, $5\frac{1}{2}$ ft. wide, and 8 ft. high, and is equipped with a rear release door and a winched draw bar for easy dumping of collected thatch.





Delmonte Comb, attached to a Toro Greensmaster 9-blade reel lawn cutter, lifts stringy grass blades up to cutting blades for an even mowing job. Flexible tongs of the comb are said to assure cutting at a uniform height and eliminate grain condition. Brush and roller attachments may be installed in place of the comb on the 21-inch mower frame. (Right) Closeup of Delmonte Comb. This is available from Toro Manufacturing Co.

present. Disease and insect infestations kill or damage an increasing number of plants again contributing to thatch buildup.

**Mechanical Control
Recommended for Thatch**

What can be done to control thatch? Today most of the effort is toward mechanical control. The thatch layer is physically dug out by use of vertical mowers or other mechanical devices and removed by raking. There are three types of equipment available to do the job.

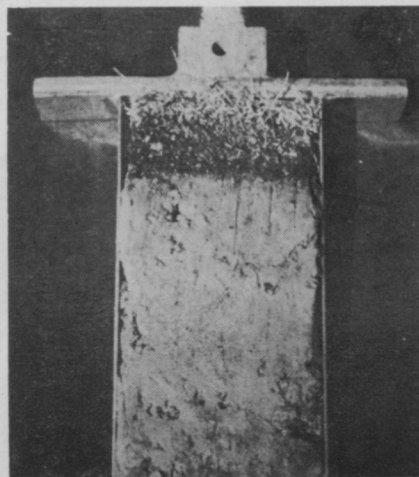
1. High speed—rigid blades—cuts whatever it touches.
2. Slow speed—rigid blades—combing and pulling action.
3. Slow speed—flexible blades—combing and pulling action.

Currently over 20 models from more than 12 manufacturers are designed to rake, comb, pull, or cut thatch from the soil surface. Most of these models do the job for which they are designed, however, it is important when purchasing renovating equipment to determine if the machine in question is designed to do the job you want it to do.

Soil aeration, although it does

not remove much of the thatch layer, often temporarily improves plant growth. An aerator used with equipment such as a vertical mower may be used for renovation.

Renovation or rejuvenation of most bluegrass or bentgrass areas should be done once per year. After considerable thatch has accumulated, it is difficult to remove without drastically injuring the turf. There should be green growing points remaining after the renovation is completed, otherwise brown areas



Profile showing thatch on top of a poor soil. Accumulation of organic matter like this acts as a thatch roof and prevents moisture and plant nutrients from moving down into the soil.

may be too severe and extensive. Inexperienced operators, on the other hand, are often afraid to remove enough thatch and vegetation. Removal of the thatch and up to 50% of the grass may be desirable.

**Renovation Program
Should Include Fertilization**

On bluegrass and bentgrass renovation is most often done in the fall. Spring is also an acceptable time provided the job is completed very early. Fertilization is generally favored at the same time.

On golf greens, topdressing with soil is often used. If a thatch layer has already developed, top dressing will not eliminate the problem. Vertical mowing and aeration followed by top dressing is usually necessary.

In summary:

- (1) Thatch is a real problem and has often increased in spite of good management;
- (2) Much more information is needed about the effect of management on thatch accumulation, and
- (3) Mechanical renovation is recommended.

JOB ESTIMATING is essentially the science of figuring the costs of a job and arriving at a dollar amount low enough to get the work, yet high enough to insure a profit. The difficulty is not to get the job. Anyone can do that by simply submitting a figure too low. It is then just a question of time how long you can afford to stay in business. On the other hand, you can insure never losing—just submit a high bid. Naturally, you will not get any bid work either.

The secret then is to hit that area where you can get the job and still make money. This area is a rather narrow band and getting narrower all the time. Often a contractor, wanting the work quite badly, will shave his final bid before submitting it. A study of highway contractors' bids showed that 90% of the successful bids would have been the low bid at 10% more money. This is lost revenue—lost profits, and in some cases the 10% is the profit. I have found this to be true in my own case, yet I constantly am tempted to cut those last few dollars. Don't do it!

Two Types of Tree Care

In tree care today, the field is generally divided into two groups: the private homeowner, and the commercial or industrial customer. Some years back, by far the greatest amount of tree work came from large estates. Some retained a crew of men on a year-round basis. A few do today but the balance is changing. Larger estates are giving way to the millions of private homes and "small estates." Much of this work is seasonal; most of it of short duration. This then poses a problem of how to estimate a job that requires a crew of two or three men to prune deadwood out of one or two trees.

My approach to this problem is to insure, by fair treatment of the customer and reliable professional workmanship, that the customer will ultimately come to the conclusion that the fairest and cheapest way to get a small job done is to call and describe what he wants and just authorize you to do the work. I

Job Estimating in the Tree Business

By

W. H. BARTLES

W. H. Bartles Tree Service
Hyde Park, New York

maintain that this is the most economical way to handle small jobs. You have an established hourly rate with a minimum time. The customer gets the benefit of the time saved by the omission of your trip over to submit a price. Time today is money. We do not use a contract in these cases.

Are Contracts Necessary?

This approach to the small homeowner with his occasional job, and working without a contract has provoked quite a bit of discussion. Treemen seem to be fairly evenly divided on contract vs no contract. While they admit time could be saved by not bothering with a contract, they feel it is poor business. I maintain it is a calculated risk that enables a larger volume of business by fewer sales people. I also pointed out that the secret of the success of the whole procedure is that you must absolutely establish your reputation for fairness and professional workmanship. We must continue to give our customers the very finest of tree care and constantly strive to upgrade tree care methods.

In many customers' minds, there is a deeply embedded memory of being taken by someone years ago when they said, "Go ahead and fix it." Again I emphasize there is a difference in contractors. I believe that the majority of homeowners would dearly love to have a good reli-

able, trustworthy tree care company available, so that when the need came up, they could just pick up the phone and call — without the sparring and haggling over prices. We do not bargain with our doctors or dentists. Why shouldn't we receive the same professional respect?

"Patsy" Bids

Another phase of job estimating covered was the field of the "patsy" or the "second bid" required by a superintendent of an estate or cemetery. Many of these people have the trust of their employers but the moral integrity of the lowest type. They have their favorite contractors who "take care of them" with kickbacks. The unfortunate part, of course, is that most of the time they must get two bids so they can "award" the bid to the lowest bidder. So you are called in and asked to submit a bid. The first inclination that all is not on the up and up is the vagueness of details. There are no written specs to work from. The superintendent waves his hands and points to this tree and that tree. The type of pruning or, in the case of spraying, the ingredients and number of applications are not discussed. These are all danger signals. My advice here is to politely decline to bid. You are just wasting your time. The crooked superintendent cannot be stopped. He is despicable, but here to stay as a living testimonial to the existence of blocks in the path of ethical progress.

Dealing With Union Contractors

Job estimating when dealing with the large union contractor puts an entirely new face on the problem. Eighty to 85% of the tree care people, perhaps even higher, do not work with union employees. A few do sometimes, but none all the time. Again, the criteria is to know fully all the costs and to read the fine print very carefully. Do not sign a contract without full legal counsel. I did this in 1962, and am still trying to collect \$12,000.00 for work our firm did and for which the contractor received payment from the State of New

York, so I know. I have been there before.

Today's Records, Tomorrow's Reference

Of vital importance in the estimating field is the keeping of job records. After successfully getting the bid, complete daily records are a must. At the end of the work, an analysis should be made and a cost accounting studied. When complete, you will know if you made any money, where you might have been weak, and where, if the same job comes up again, you can use the data wisely.

This constant and changing cost picture must be continuously reviewed and applied if you are to be accurate in your estimate.

In conclusion, my position is very clear. Sound knowledge of the science of bidding plus a well-trained work force and good equipment are all necessary. Combine this with the very highest code of ethics and you must succeed. We have operated too long in the shadow of suspicion because some conniver could not resist a fast buck. Our customers are our livelihood. They deserve to be treated with the utmost respect. Our future is what we make it. and without ethics we have no future.

Colorado Rains May Increase Plant Disease Problems

Persistent moisture, high humidity, relatively cool nights and heavy dews are favoring the growth of powdery mildew, warns Dr. L. E. Dickens, extension plant pathologist at Colorado State University.

The disease is a grayish powdery mold which covers leaves of many garden flowers, lawn grass, shrubs and trees.

The best control measure, Dr. Dickens explains, is application of protective chemicals before any signs of mildew appear. If this is not possible, plants should be sprayed or dusted immediately after mildew is detected.

Recommended fungicides include dusting sulfur (300 mesh), Acti-dione PM (2 tbsp. per gal-

lon of water), Karathane WD (2 tbsp. per 3 gallons of water), or micronized wettable sulfur (1 tbsp. per gallon of water).

Dusting sulfur should be applied when the air is still and the foliage is dry. Avoid heavy deposits of dust on the leaves and do not apply sulfur (either dust or wettable powder) when temperatures reach 85 degrees. This will prevent leaf burn, the CSU specialist points out.

Fungicides should be applied at weekly intervals. Add a wetting agent such as Triton B-1956 to spray mixes for better coverage. For small scale applications, one teaspoonful of liquid detergent or one tablespoonful of powdered detergent per gallon of spray mix will act as a wetting agent.

Read fungicide labels carefully before using the materials, Dr. Dickens suggests.

Vigorous Growth Key to Rust Control in Merion

Rust in Merion bluegrass lawns can be kept at a minimum if vigorous healthy growth is maintained, reports Dr. R. E. Partyka, Ohio State University



A grass paint said to make browned-out areas in turf look like natural growth has been formulated for large-quantity users by Luminall Paints, Inc. Sold under the name Lawn Tint, the product is reported to be harmless to children, pets, and surrounding vegetation; can be applied with other turf treatment programs, and can be watered following application. Technical data, including application specifications, may be obtained by writing Luminall Paints, Inc., 3850 West Side Ave., North Bergen, N. J. 07047.

Dacagin Makes Bow

Special Dacagin demonstration kits were sent to 400 grounds maintenance men so that they could see for themselves how easily and quickly Dacagin turns thin weedkilling spray solutions into sticky gels.

Diamond Alkali Co., Cleveland, Ohio, says this new weedkiller additive was developed by them specifically for use with Dacamine, Fence Rider, Crop Rider, and Line Rider weedkillers. Use of Dacagin with weedkillers greatly reduces the danger of overspray and wind-carried herbicide to crops, grass, and other wanted growth.

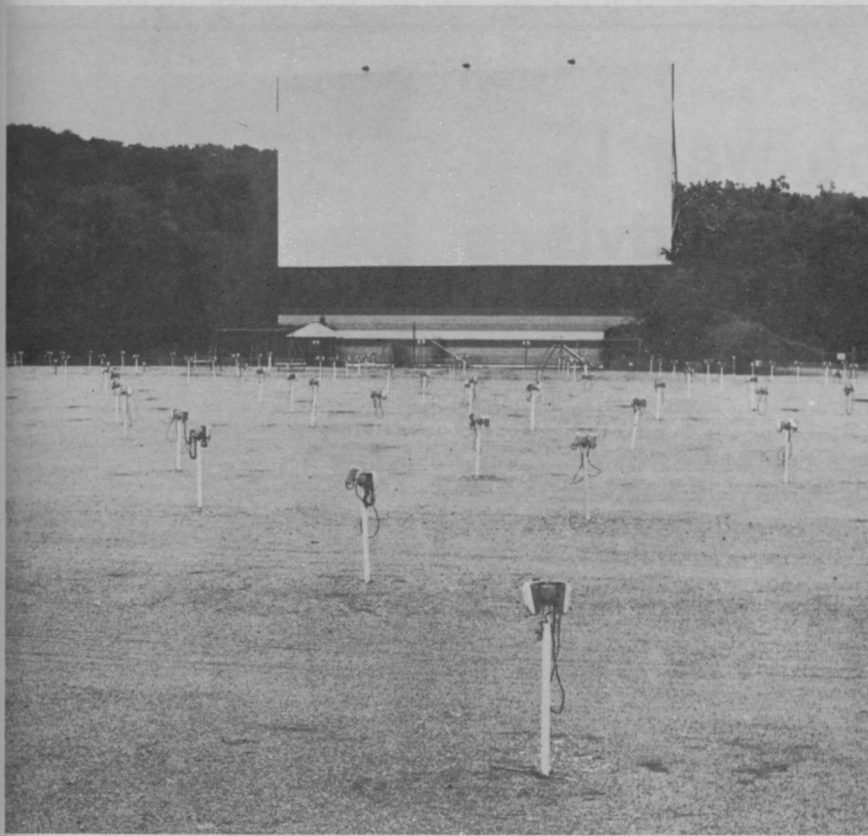
Made in powder form, Dacagin is mixed with diesel oil or kerosene and then with the solution of weedkiller and water. The resulting mixture stays fluid under agitation, but turns into a gel as it is sprayed, Diamond reports.

Complete details will be sent to those who write Diamond Alkali at 300 Union Commerce Bldg., Cleveland, Ohio 44115.

extension plant pathologist. He also reveals that the Merion variety of Kentucky bluegrass is more susceptible to rust than the common varieties.

The disease often becomes a problem in late summer, Partyka says. Early symptoms appear as a light yellow flecking of the leaves. As the areas enlarge, they elongate and appear in rows parallel with the veins of the leaves. The spots then burst and a reddish brown pustule develops. When an infected leaf is rubbed between the fingers, a red brown or yellow powder will be noticed. This powder is composed of millions of tiny spores which are the "seeds" of the fungus.

If rust appears, begin fungicide applications at 7-day intervals or more often if the disease is severe. Materials to use include Acti-dione-Thiram, or Zineb. Follow the directions of the manufacturer as shown on the label.



Drive-in theatre owners are constantly plagued with weed problems in their parking lots. Chem-Trol came to the rescue at this outdoor movie with 5 lbs. Prometone per acre, applied as a preemerge.

How Chem-Trol Eliminates Weed Control Callbacks with Geigy's Prometone

INDUSTRIAL WEED control has often been a hit or miss proposition and a frustrating experience. Not so today, thanks to advances in industrial weed control chemicals and methods of application by trained specialists.

Custom contract applicators whose specialty is the control of weeds around a wide variety of industrial sites are as highly conscious of man hours as most "service organizations."

Purchase of chemicals is, of course, a fixed cost varying according to the area to be covered. On the other hand, time involved, labor and overhead for that particular application, can run three to four times above material costs.

When any job requires a callback, due to customer com-

plaints, the resultant added fixed charges and time costs usually make the job unprofitable because the applicator cannot bill for this extra service. Further, callbacks use up time that could be utilized to do other and more productive work. Callbacks create an atmosphere of customer dissatisfaction.

For a profitable weed control operation, from the applicator's

viewpoint, it is important to eliminate callbacks. This means that the chemicals and techniques used on the job must provide positive control of all problem weeds and vegetation the first time they are utilized.

By the very nature of these requirements, no one chemical can be expected to provide perfect weed control in industrial areas. But, a combination of weedkillers, with a long-lasting herbicide as the basic ingredient, is providing one answer to the problem of cost control that many custom contract applicators are using with marked success.

Profitable weed control techniques, the conservation of time and materials, are not hard to develop. Darrel Odle and Glen Tolman offer a case in point. After several years as chemical sales representatives, they organized Chem-Trol Inc. in Kansas City, Kansas, to specialize in chemical control of weeds and vegetation on industrial sites. What they have done may provide guidelines for other weed control specialists anxious to save time and chemicals by eliminating callbacks.

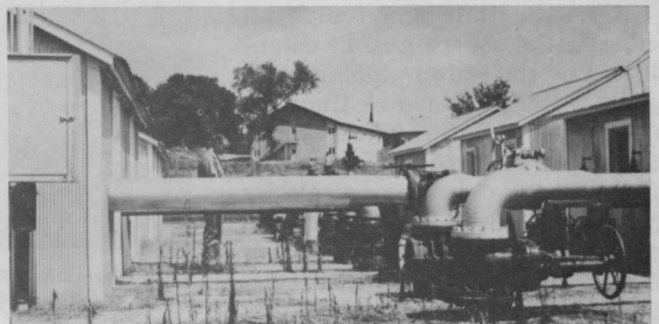
Says Prometone Is Key

A tour of the general area served by this enterprising organization reveals many successfully completed industrial weed control jobs where Prometone was utilized. These applications, shown in the accompanying illustrations, are typical of the end results.

Based on its favorable experiences with the persistent herbicide, Chem-Trol Inc. considers this chemical the key ingredient in its weed control formulations. According to Dar-

(Continued on page 24)

Kill of weeds and unwanted grasses at this gas metering station. Line of demarcation shows where 15 lbs. Prometone per acre and 1 lb. 2,4-D solved the problem here.



"Don't start the way I did," Bitterman Advises

By MARION RUBENSTEIN

More technical and marketing information for grass growers is needed by the sod producing business.

This plea for greater educational facilities to be made available to grass growers was made in San Antonio, Texas, by Fred Bitterman, owner of the Bitterman Grass Farm, located 12 miles from city limits there.

Bitterman, who has been in the sod producing business for the past 10 years, said: "What I have learned about this grass



First thing Fred Bitterman does each workday is check water supply from city lake.

growing business has been the result of costly mistakes. There should be a central clearing-house of information, where owners of grass farms like myself could come to for advice," he added.

Until the time when such an educational source will be established by the sod producing business, Bitterman says he finds his best flow of information comes from speakers at the annual conferences and conventions held by the Texas Turf Growers Association, and the Florida Turf-Grass Association of which he is an active member. "Or, you

get information from the other members you meet at these conventions, as well as from trade magazines," said Bitterman. He reads only *Weeds Trees and Turf* and *Southern Florist*.

Asked what information he needed most, Bitterman answered: "Weed control and management. But I can use all the other information I can get. I am just a sponge for information."

Up until recently, Bitterman specialized in st. augustinegrass which he plants vegetatively. Recently, he has been experimenting with other grasses like Emerald zoysia. Because st. augustinegrass does not seed abundantly Bitterman wants to venture out in other grasses.

Largest Farm Has 52 Acres

At the present time, he grows one crop per year of st. augustinegrass on two farms. The one that is shown here in these pictures is 52 acres and grows most of his production. Two miles away, he has another 8 acres.

Bitterman estimated that the total square yards of sod he sells annually averaged around 2200 square yards per acre.



Sprays irrigation ditches regularly to keep them weed free and ease gravity flow of water.



Only sales promotion Bitterman uses is this sign at his farm, and phone calls once a month.

Nurseries are his major market. His method of sale is direct. "Almost once a month, I get on the phone and call to get business," Bitterman explained. All his sales are "field delivered." Bitterman is adamant on this score. "That is the only way I work," he said. "My customers come and get it and pay for it right here."

The reason for his unswerving "Cash Only" and "Field Delivered" rule is because Bitterman believes that "once the grass leaves you, you have no control over it, so you cannot guarantee it." It works, strangely enough in this credit-crazy age.

Bitterman has built his business through use of chemicals to get "a quality, bermuda-free grass." This was not easy and took much of the 10 years he has been in business because, as Bit-



Grass is mowed daily. Here Bitterman discusses proper height of cutting blade with worker.

terman explains it, "I was contaminated with bermudagrass. I tried a number of chemicals until I happened to hit on the right one."

As to fungicides, Bitterman said: "I have very little trouble on that score and so have bought very little."

On weedkillers, he uses pre-emergence. "About 300 pounds of Simazine a year."

Bitterman says he uses about 40 tons 15-5-10 turf fertilizer a year.

"I have had no trouble with turf insecticides and so I have



Experimental plot of Emerald zoysia, is irrigated through pump and sprinkler setup.

used no other chemicals," said Bitterman.

In his work, Bitterman said he used two sod cutters, a Ryan and a Sodmaster; one flail mower; one power sprayer; one spreader/seeder; three tractors (Fords and Internationals) a couple of Toro reel mowers and rollers. He employs five men on a permanent basis.

Having reached his desired goal of quality bermuda-free grass, Bitterman expects to expand his business this fall. In addition to the monthly phone calls, he intends to send out sales letters to a wider area of nurserymen this fall.

Educate Yourself or Hire Experts

Since he is the major sod producer in the San Antonio area, Bitterman has achieved success in his chosen field of work. He did it without any basis of technical knowledge. He had been an advertising salesman for the telephone company, with a love of the outdoors and pride in his



No credit problems. Bitterman sells only for cash; customers come to his farm to get sod.

own beautiful lawns. Would he then advise newcomers to the sod business to be as adventurous as he has been?

Bitterman shook his head and said in a very sad voice: "Very definitely NO! It's been both rugged and heartbreaking, the way I did it. I thought that because my lawns looked the best in the neighborhood I knew all there was to know about growing grass. I found out that what I knew was only a spit in the ocean. It's a sad day when a man thinks he can grow grass on a farm as well as in his own yard."

Because of his own heartbreaking experiences, Bitterman advises all newcomers to the sod business to do one of two things. "Either get yourself a good education by taking a course in turf management at an agricultural college, or hire yourself someone who has a good education as your turf manager."

To avoid further heartbreak, Bitterman advises all newcomers to have enough capital before going into the sod producing business.

"To do it right, you need about \$1800 an acre," Bitterman said.

He indicated further that this amount of capital was not in itself assurance of success. "You have to have at least 50 acres to begin with, otherwise the cost of operation will be prohibitive for you."

It can not be any kind of land either, Bitterman said. "It has to be the right land. The ground must not be too sandy," he added.

There also has to be the right kind of water. "You just cannot

function in this business today without an abundant supply of cheap water," he said.

As to the methods of irrigation, Bitterman had this to say: "Some will sprinkle. Some will flood. I like to flood, because it's lots cheaper and easier."

His source of water is a city lake, and it's all gravity flow with irrigation coming through ditches. A small pump and sprinkler setup is used to irrigate about one acre of zoysia and Uganda bermudagrass.

As to the future of the sod producing business, and whether it holds a good living for the newcomer, Bitterman was most optimistic and had this to say: "Yes, I think the industry will grow by leaps and bounds, because people are becoming more conscious of the quality of their lawns."

Sees Change in Preference

As to the kind of grass that will sell, Bitterman foresees the time "in years to come" when the current popularity of st. augustinegrass will "grow less and less." In its place will be the "hybrid bermudagrass which will increase in popularity because it is a finer grass."

In preparation for this change of public taste, Bitterman is experimenting with smaller quan-



Customer asks question; Bitterman (right) answers, referring to WTT discussion of problem.

tities of Tifgreen #328, FB #137 NoMow Uganda, Emerald zoysia, and Floratine st. augustinegrass.

"I have about five acres of all these new grasses," Bitterman said. "If the demand grows, I

will expand with whatever shows the greatest demand."

Bitterman feels that the zoysia Emerald will show the greatest increase. "It is the best of the long grasses," he said. "And we have had five calls for it within the last month."

Further advice to newcomers is to "keep up to date in your information." This can be done by constant consultation with machinery and insecticide salesmen and those of other suppliers. "These men get around and they know what is going on. They can help you a great deal," said Bitterman.

New Tifdwarf Bermudagrass Superior for Golf Greens

"Tiny leaves of a new grass species grow so close to the ground that many of them are never cut by the greens mower," is the enthusiastic report from R. H. Garrison, head of the Clemson University Seed Certification Department, Clemson, S. C.

Known as Tifdwarf bermudagrass, it was released in April

of this year by Drs. Glenn W. Burton and J. Earl Elsner, of the Georgia Coastal Plain Experiment Station, Tifton, Ga. Garrison reports further, "Tifdwarf, like other improved grasses developed by the United States Department of Agriculture and the Georgia Coastal Plain Experiment Station, was released only through seed certification programs in order that buyers might be protected and to insure that they do not get a substitute."

Comparison tests between Tifdwarf and Tifgreen were conducted for a three-year period at the Tifton experiment station. In these comparisons it was learned that Tifdwarf was equal to or superior to Tifgreen on nearly every score. Very close growth to the ground helps Tifdwarf tolerate a $\frac{3}{16}$ -inch cutting height much better than Tifgreen. Its softer blades and fewer seedheads also contribute to its superior cutting qualities.

At the Coastal Plains Experiment Station, Tifdwarf gave a darker green color than Tifgreen

and required less fertilizer to bring it to a comparable degree of greenness. Its purple basic plant color, that helps to keep it looking dark green in the summertime, becomes very noticeable when temperatures drop in the fall.

Tifdwarf is not available at the present time for home lawns or golf courses. Plantings have been made by growers in the certification program and the Tifdwarf variety will be available for distribution in 1966, Garrison informs.

The South Carolina Foundation Seed Association has made a planting at the Sandhill Experiment Station, and the plot is available for observation and test work this year.

Official information on the performance of Tifdwarf in South Carolina is not available at this time.

Persons interested in securing Tifdwarf in 1966 may contact the South Carolina Foundation Seed Association at Clemson University.



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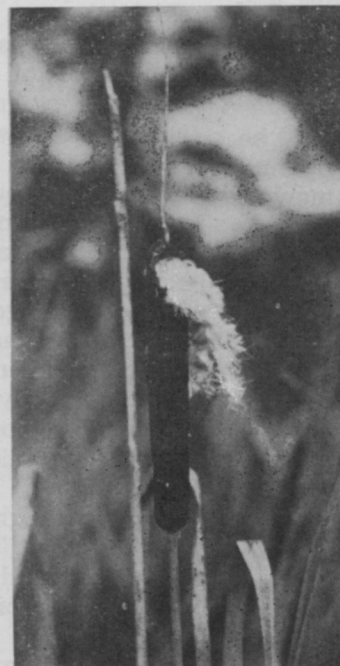
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Organization of National Spraymen's Association

Forges Ahead As Group Proposes Convention in '66

Establishment of the National Spraymen's Association was given a forward thrust late in August when a group of spraymen met at the *Weeds Trees and Turf* offices in Cleveland, Ohio, to evaluate what has already been accomplished and to decide further steps needed to charter the group and elect officers. Spokesmen represented the contract applicator industry in Florida, Colorado, Iowa, and Oregon.

Interest has been running high for holding a formal organizational meeting, so investigations are now underway by the interim board of directors to set a time and place for the first NSA convention early next year.

Reason for the accelerating enthusiasm is a realization of what the national association can do to further an exchange of technical information, provide a united front in legislative matters, create an effective industry public relations program, offer guidance in better business management, etc.

Underscoring the need for more technical help, Carl Ripper of West Des Moines, Iowa, reminded the group that a national association can better attract top calibre vegetation specialists of national importance for its program.

Reviewing accomplishments to date, acting secretary-treasurer Craig Anderson, Ft. Lauderdale, Fla., said copies of the proposed NSA constitution have been sent to nearly 50 spraymen expressing interest in the new trade association.

Further, Anderson reported, allied regional groups in Colorado, Florida, Washington, and Oregon have been contacted. Each has offered support of an active national voice for applicators engaged in weed and brush control, tree service, and turf management.

By long-distance phone, acting NSA president, Larry Nipp of Ft. Lauderdale, Fla., and board

member William Owen, Clackamas, Oregon, entered into the Cleveland discussions.

Owen said: "I want to congratulate the group meeting in Cleveland for all you've done and to tell you that there is no lack of interest by spraymen out here."

Nipp said: "We're all set down here in Florida to do all the necessary work to stage the first national convention if it is decided to hold it in this section of the country."

The group in Cleveland generally agreed that if the association is to provide meaningful service to the industry, annual dues of \$10 per member (suggested earlier) is not adequate. To date 15 members have sent in \$10 each to help defray out-of-pocket, get-started expenses. No one connected with NSA is receiving payment for his services and all travel expenses are being borne by pro-tem officers themselves.

If dues are so low nothing can be accomplished, "you're going

to drive away good industry men who would join if they felt the organization has a goal and a purpose," as well as the finances to do the job, Jim Omura of Denver said in Cleveland.

Accordingly, the interim board of directors suggested dues be set at \$25.00 for Active Members, and \$50 for Allied Members. Receipts will be used to further underwrite promotion and organizational expenses. For industry men interested in joining the NSA, there is an application blank below.

It is expected some 100 to 150 will attend the upcoming national convention which will include not only technical sessions, but will also elect a slate of officers, and official board of directors, and appoint committees to finalize the constitution and develop policies governing membership, finances, education, legislation, equipment, chemicals, etc. Dates and program details will be announced in *Weeds Trees and Turf* as they become available.

MEMBERSHIP APPLICATION

To: National Spraymen's Association
P. O. Box 23456
Fort Lauderdale, Florida 33307

Date.....



Gentlemen: I am interested in joining the National Spraymen's Association for the furtherance of our industry's national interests and education. Enclosed is my check for \$..... covering dues for 1966.

Company Name

Company Address

City State Zip Code

My Name Title

Number of years in this business: years.

Type of Membership Desired*

Active \$25..... Allied \$50.....

Check one and enclose payment for dues as required by type of membership.

*Active Member is anyone presently actively engaged in nonagricultural vegetation maintenance and control.

*Allied Member is any supplier or manufacturer of chemicals and/or equipment to this industry.

Mail Check with Application Blank to:

NATIONAL SPRAYMEN'S ASSOCIATION
P. O. Box 23456, Fort Lauderdale, Florida 33307

Additional Membership Application Blanks available from NSA at above address.

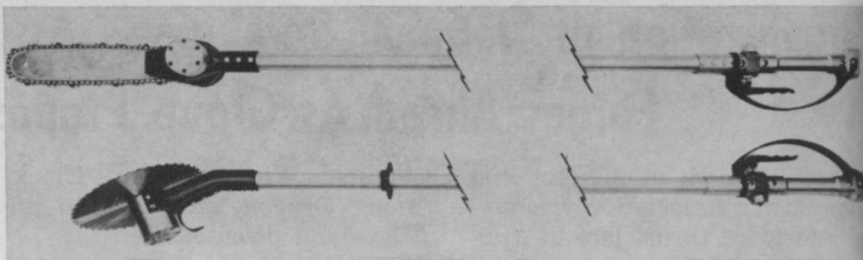
Hydraulic-Powered Pruning Saws Introduced by Ackley

Hydraulic power readily at hand on tractors, mobile personnel booms, and other equipment provides the energy to drive two new pruning and brushing saws recently introduced by Ackley Mfg. Co., Portland, Ore.

Available in both circular and chain saw models, the company says it has designed into them safety features, light weight, and a high-speed motor to provide low maintenance and maximum operating efficiency. Cutting speed of 7,000 rpm is attained. Long handled, both saws give the user a greater working radius. The circular saw head is at an angle which permits close-to-ground cutting in brush control operations.

A power pack unit has also been developed to provide hydraulic power if other sources are unavailable. Made in either wheel or skid mount models, these portable power packs develop power to operate either one or two saws. Another power pack is also available that can be attached to the PTO drive of tractors.

Specifications and other information can be obtained from



Fast cutting ability and light weight are features of Ackley hydraulic-operated saws for tree pruning and brush removal operations. Circular saw overall length is 81", weighs 9 lbs, while the small chain saw weighs 9 1/4 lbs and has an overall length of 86". Saws attain speed of 7,000 rpm.

Ackley's distributor, Mr. James L. Claflin, Manager, WCS, Inc., 11564 S.W. Pacific Hwy (99W), P.O. Box 6527, Portland, Ore.

West Point Products Offers New Machines for Turf Care

New machines for maintenance of golf course fairways, greens, and other turf areas just introduced by West Point Products include a turf renovator-slicer, a core catcher, and a power drag.

Called the Master Verti-Groove, the renovator features two sets of soil-engaging blades. This arrangement is said to provide thorough soil renovation. Slicing knives are mounted on a stationary shaft in front of the rotating blades of the renovating reel. The first set of knives slice the soil, opening it up for the

Tree Bulletin Issued

A 50-page handbook listing desirable trees for planting along municipal streets in New Jersey has been revised and is available to those who are interested in species recommended by the New Jersey Federation of Shade Tree Commissions.

Copies of "Trees for New Jersey Streets" can be purchased for \$1 from the above-mentioned organization at Blake Hall, Rutgers College of Agriculture, New Brunswick, N. J.

renovating blades. The renovating reel can be disengaged allowing slicing operations only.

Other features include easy blade change, and a 3-point hitch for PTO tractors. The Master Verti-Groove is 5 feet wide and weighs 745 pounds.

The core catcher is designed for attachment to all Vertifier coring machines. The company says this unit eliminates raking and picking up cores, saving manpower for other duties. The Vertifier now incorporates fast core punching and cleaning in a one-man operation.

A new approach to settling top dressing down into the soil below grass blades is offered by West Point's power drag. It is said that one man can mat a green in one-third the time required by the old hand method.

Three flexible steel mats to provide a 9 1/2-foot matting swath are swirled by the machine, quickly settling topdressing to the roots. The power drag is self-transportable and folds for compact storage.

Interested turfmen can obtain detailed information on these products by writing to the company at West Point, Pa.



Two sets of soil-engaging blades are principal features of this soil renovator designed for fairway use by West Point Products Corp. Renovating blades are mounted on rotating shaft and are preceded by slicing knives mounted on a stationary shaft performing thorough renovation. Renovating blades can be disengaged to use this equipment as a slicer only.

Geigy Conducting Clinics For Effective Weed Control

Effective weed control on industrial and civic sites is the chief topic of discussion in a series of clinics given by the Geigy Chemical Corp. The first was held Sept. 21, in Great Falls, Mont.

The clinics feature the latest developments in the use of herbicides for controlling weeds and grasses on noncrop sites such as railroads, highways, fence lines, lumberyards, power installations, storage areas, and other industrial complexes where elimination of weeds is desired.

Each of Geigy's five industrial herbicides — Atrazine, Simazine, Prometone, Pramitol and Atrabor—will be examined in detail to show clinic audiences where each chemical would fit into their weed control program.

The clinics are open to all individuals interested in industrial weed control. Ample time will be allowed for a question and answer period.

Clinics to be held during October begin at 9:30 a.m. at the following locations:

Colorado: Grand Junction, Oct. 21, Bar-X Motel, 1600 North Ave. *Idaho:* Boise, Oct. 13, Downtowner Motel, 1901 Main St. *Nebraska:* Scottsbluff (Terrytown), Oct. 12, Copper Kettle Restaurant. *Wyoming:* Casper, Oct. 15, Holiday Inn Motel, 5400 Woodson Ave.

A series of three meetings, scheduled for 7:30 p.m., are arranged for: *California:* Berkeley, Oct. 14, Hotel Claremont, Ashby Ave. at Domingo; Palo Alto, Oct. 20, Rickey's Hayatt House, 4219 El Camino Real; and King City, Oct. 21, Ranch House Lanes, 101 Highway North.

A series of meetings, scheduled for 10:00 a.m. have been arranged at the following *California* cities: Santa Rosa, Oct. 13, Los Robles Lodge, 925 Edwards Ave.; Redding, Oct. 13, Ponderosa Inn, 2220 Pine St.; Bakersfield, Oct. 13, Royal Palms Motor Hotel, 200 Union Ave.; Tulare, Oct. 14, Tagus Ranch Restaurant, 99 Freeway at Tagus Ranch; Eureka, Oct. 14, Eddie's Supper Club, 109 4th St.; Yreka, Oct. 15, Tas-T-Y Cafe, Broadway and Minor; Fresno, Oct. 19, Del Webb's Towne House, 2220 Tulare St.; and Sacramento, Oct. 19, El Dorado Hotel, Canterbury Rd., Turnoff U.S. Freeway 40.

Know Your Species

Wild Carrot (*Daucus carota*)



Wild carrot is perhaps just as commonly known as Queen Anne's Lace. It is a biennial and reproduces by seeds. It may be found in meadows, roadsides, and on unkempt lawns. This plant is widespread throughout North America having been introduced from Eurasia.

Biennial growth of wild carrot produces an inconspicuous rosette of finely divided ("fernlike") pinnate leaves the first year. The taproot of this rosette slightly resembles a small fleshy white carrot.

The second year's growth sends an erect stem up to 3 feet tall bearing the flattened umbel (2) of small white flowers. This umbel later dries and the outer flower branches curve in tightly; from this habit wild carrot gets another common name of bird's nest (3).

Second-year stems are hollow, fairly stout and hairy. There are small lengthwise ridges on the stem.

Second-year leaves (1) occur alternately on the stem, and the leaf blade has opposite, bipinnate, deeply cut leaflets. Leaves have a distinct carrot odor when crushed.

Tiny white flowers have 5 small petals. The flower head which bears many flowers on small stalks is called an umbel, and may be considered to resemble an upside-down umbrella. The umbel gets more concave as the season progresses, until the outer stalks completely enclose the rest of the flower head.

Seeds (4), $\frac{1}{8}$ inch long, have one side flattened, and one side with 4 bristled ridges. Wild carrot seeds often contaminate clover and grass seed.

Wild carrot is satisfactorily controlled by Dacamine (N-Oleyl 1,3-propylene diamine salt of 2,4-D). Good lawn management practices, mowing during the bud stage, and use of adapted grass and legume species will control this weed.

Prepared in cooperation with Crops Research Division, Agricultural Research Service, United States Department of Agriculture, Beltsville, Maryland.

(DRAWING FROM NORTH CENTRAL REGIONAL PUBLICATION NO. 36, USDA EXTENSION SERVICE)

Meeting Dates



- National Agricultural Chemicals Assn. 32nd Annual Meeting,** Diplomat Hotel, Hollywood-by-the-Sea, Fla., Oct. 17-20.
- Central Plains Turfgrass Foundation Meeting,** Kansas State University, Manhattan, Oct. 20-22.
- Nebraska Association of Nurserymen Annual Convention,** Cornhusker Hotel, Lincoln, Nov. 15-16.
- Pennsylvania Grassland Conference,** Nittany Lion Inn, State College, Nov. 22-23.
- National Weed Committee of Canada, Western Section Meeting,** Palliser Hotel, Calgary, Alberta, Nov. 30-Dec. 2.
- Illinois Turfgrass Conference,** University of Illinois, Urbana, Dec. 2-3.
- North Central Weed Control Conference,** Broadview Hotel, Wichita, Kans. Dec. 5-7.
- Minnesota State Nurserymen's Assn. Convention and Annual Meeting,** Curtis Hotel, Minneapolis, Dec. 6-7.
- Connecticut Nurserymen's Assn. Annual Meeting,** Hotel Statler-Hilton, Hartford, Dec. 30.
- North Carolina Nurserymen's Assn. Annual Meeting,** North Carolina State University, Raleigh, Jan. 3-4, 1966.
- Western Association of Nurserymen Annual Convention,** Hotel Continental, Kansas City, Mo., Jan. 3-5.
- Rutgers Winter Turf Course,** College of Agriculture, New Brunswick, N. J., Jan. 4-Mar. 11.
- Northeastern Weed Control Conference,** The Hotel Astor, New York, Jan. 5-7.
- Indiana Association of Nurserymen Annual Winter Conference,** Claypool Hotel, Indianapolis, Jan. 5-7.
- Iowa Nurserymen's Assn. Annual Convention,** Hotel Roosevelt, Cedar Rapids, Jan. 7-9.
- National Landscape Nurserymen's Assn. Convention,** LaSalle Hotel, Chicago, Ill., Jan. 8-9.
- North Carolina State Annual Pesticide School,** North Carolina State University, Raleigh, Jan. 10-11.
- New York State Arborists Assn. Winter Meeting,** Statler Hotel on Cornell campus, Ithaca, Jan. 16-18.
- Rutgers Lawn and Utility Turf Short Course,** College of Agriculture, New Brunswick, N. J., Jan. 17-19.
- Maryland Nurserymen's Assn. Annual Meeting,** Washingtonian Country Club, Gaithersburg, Jan. 18-19.
- 18th Annual California Weed Conference,** Sainte Claire Hotel, San Jose, Jan. 18-20.
- Southern Chapter, International Shade Tree Conference Meeting,** Andrew Jackson Hotel, Nashville, Tenn., Jan. 20-21.
- Southern Weed Conference,** Hotel Robert Meyer, Jacksonville, Fla., Jan. 18-20.
- Oregon Association of Nurserymen Annual Convention,** Eugene Hotel, Eugene, Jan. 18-20.
- Wisconsin Nurserymen's Assn. Annual Convention,** Red Carpet Inn, Milwaukee, Jan. 19-21.
- Rutgers Golf and Fine Turf Short Course,** College of Agriculture, New Brunswick, N.J. Jan. 20-21.
- New England Nurserymen's Assn. Annual Meeting,** Hotel Kenmore, Boston, Mass. Feb. 1-3.
- Weed Society of America, Meeting,** Sheraton-Jefferson Hotel, St. Louis, Mo., Feb. 8-11.
- 2nd Annual Colorado Agriculture Chemical Exposition,** Community Bldg., Greeley, Feb. 15-16.
- Pennsylvania State University Turfgrass Conference,** on campus, University Park, Feb. 21-24.
- Southern Turfgrass Conference,** Hotel Peabody, Memphis, Tenn., Feb. 28-Mar. 1.
- 36th Annual Michigan Turfgrass Conference,** Kellogg Center, Michigan State University, East Lansing, Mar. 16-17.
- Florida Nurserymen and Growers Assn., Convention,** Sheraton's British Colonial Hotel, Nassau, May 12-14.
- Texas Assn. of Nurserymen, Annual Convention, Nursery and Garden Supply Show,** Dallas Memorial Auditorium, Dallas, Aug. 21-24.
- Florida Nurserymen and Growers Assn. Trade Meet,** George Washington Hotel, Jacksonville, Oct. 14-16.

Suppliers Personnel Changes

Kerr-McGee Oil Industries, Inc., Oklahoma City, Okla., promoted Joseph A. Oxford from field engineer to manager of its Pensacola, Fla., fertilizer plant and warehouse. Also promoted is Nathan D. Stringer, new sales manager of the Pensacola complex.

ITT Marlow Division vice president A. F. Woods, director of marketing, recently announced the promotions of O. L. Ericksen to product line manager; M. C. Bickert to sales manager; and R. D. Dickey to market specialist.

Water-In, Inc., Altadena, Cal., has added Prof. Talmy Giveon to its soils research staff. Prof. Giveon will supervise scientific soil tests, so that he can prescribe exact formulations of "Water-In" for specific problems.

How Chem-Trol Eliminates Weed Control Callbacks

(from page 17)

rel Odle, "What we like about this herbicide is its versatility; it can be used as either pre-emergent or a post-emergent and gives season-long control of a wide range of weeds and grasses. So far this year, we have put out a lot of Prometone while the ground was still hard and frozen. Now, that the ground has thawed, the chemical has moved right into the weed-germinating zone for positive early control."

"Having a long period in which we can apply the herbicide means we can get many more income-producing months from our weed-treating experiment," Glen Tolman stated. "The fact that it is a liquid makes it a real timesaver. It mixes readily, stays in solution without agitation, and is compatible with all herbicide combinations we have used in the past."

"Let's not forget these costly callbacks," Odle warns. "Prometone has helped us to reduce them; it's effective on johnsongrass and other hard-to-kill perennials, as well as broadleaf weeds."

Classifieds

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 1900 Euclid Avenue, Cleveland, Ohio 44115.

Rates: "Position Wanted" 5c per word, minimum \$2.00. All other classifications, 10c per word, minimum \$2.00. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment.

HELP WANTED

WEED CONTROL supervisor needed. Well-established company working in New York and New England States on roadside, utility and industrial spraying. Give experience, education and salary desired in reply to Box 11, Weeds Trees and Turf magazine.

FOR SALE

ONE BEAN SPRAYER, 600-gal. tank, 55-gallon-per-minute pump, 800 lbs. pressure. This is complete with 200 ft. of 1/2-inch, 800-psi hose, used very little, and 200 ft. of new hose. One Bean gun. This unit is mounted on a new 1 1/2-ton Chevrolet truck with only 5,000 miles of use. Also one 12-inch chipper, one 9-inch chipper and four 12-inch chipper blocks only. The complete spraying outfit is priced at \$4,400, including truck. This is ready to go to work. For information write to Devco Custom Spraying Co., RD#1, Box 441, Egg Harbor City, N. J.

HORTICULTURAL power spraying business. Well established, excellent reputation. Year round lawn, tree and shrub spray contracts. Custom built spray truck. Outstanding growth potential. Box 12, Weeds Trees and Turf magazine.

CUSTOM SPRAY BUSINESS. Two (2) rigs, complete with hoses, guns, etc. One rig equipped with booms for field work. Both rigs mounted on trucks, run from power take-off. Austin James, 321 South 12th St., Payette, Idaho.

ESTABLISHED sod nursery and business. Modern and mechanized. Located in eastern Pennsylvania on edge of Delaware Valley. Reply to Box 13, Weeds Trees and Turf magazine.



Dial-O-Matic has adjustable metering dial.

Dial-O-Matic Sprayer Debuts

Dial control of the spray mechanism highlights the Hosemaster Dial-O-Matic insecticide sprayers. The fingertip metering device mixes from 1 to 33 teaspoons of concentrate per gallon of water. Gauged to fit standard size garden hoses, Dial-O-Matic sprayers have a pistol grip water control and all brass non-corrosive construction in the sprayer head. The nozzle is equipped with an adjustable spray deflector. This fully guaranteed sprayer Model No. 486 is leak-proof and clogproof, according to Gilmour Manufacturing Co., Somerset, Pa. 15501.

V-C Chemical Co. Forms Southwest Sales Region

Establishment of a new sales region stretching from North Dakota to Texas, and eventually including as many as five or six district sales offices, is announced by W. D. Barton, general manager of V-C Chemical Company's plant food department.

Headquarters for the new re-

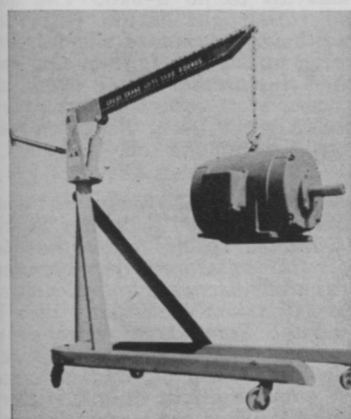
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gion will be located at Richardson, Texas. Named to manage this far-reaching area is James R. Campbell, former manager of V-C's southern region at Montgomery, Ala. Assigned to manage two new district offices in the new region are Stafford L. Beaubouef, making headquarters at Lubbock, Texas, and Donald W. Jordan, who takes charge of his new offices at Topeka, Kans.

Stepping into the manager's post for the southern region is C. Aubrey Clayton, formerly district manager at Memphis, Tenn.



ONE-MAN HYDRAULIC CRANE

Comes complete with truck mount and 6-ft. chain. Can be mounted on any type truck. Accessories include Nylon Adjustable Tree Sling, \$27.50; Barrel Chain, \$4.95; Stiff Leg for use under truck bumper, \$9.95. Floor Dolly shown only \$99.50. Crane is interchangeable from dolly to truck mount.

1500-Lb. \$119.50 2500-Lb. \$169.50
Capacity Capacity

Sold on Guaranteed Performance basis or money back.

If check accompanies order we pay freight to your door. Call collect to place your order.

IDEAL CRANE

DIVISION BERT PARKHURST & CO.

15051 East Admiral Pl.

Tulsa 18, Oklahoma

Telephone: 918 + GE 7-3313



Check Moisture at Root Level

Condition of the soil surface is not a reliable indicator of the moisture content in the root zone of plants, says a bulletin just issued by the National Arborist Association. The surest way to determine whether or not young trees and shrubs need watering is to examine soil samples taken at depths ranging from 6 to 15 inches below the surface. For optimum plant health, according to the National Arborist Asso-

ciation, the soil at root growth levels should be moist, but not saturated.

If the soil is dry, water thoroughly at intervals of a week to 10 days; use a hose-attached soil lance for application directly in the root zone if the water supply is limited. In tree-planting pits dug in clay soil, often water is trapped and keeps the soil wet for plant growth. In such cases, a tile line draining from the bottom of the pit may be necessary.

Trimming

Capital Idea. Paul E. Tilford has long been the tireless editor of *Arborist News*, quarterly news bulletin for the National Arborist Assn. of which he has been the driving force as well. We hasten to add, however, that Mrs. Tilford has been Paul's "Man Friday," taking care of secretarial details while her husband advances the science of arboriculture from their home in Wooster, Ohio. Recently we met the candidate who is going to provide Paul some long-needed help. He's Clarke Davis, recently administrative assistant to the Florida Nurserymen and Growers Assn. Clarke is to set up an NAA office in Washington, D. C. to be in close contact with legislative matters.

* * *

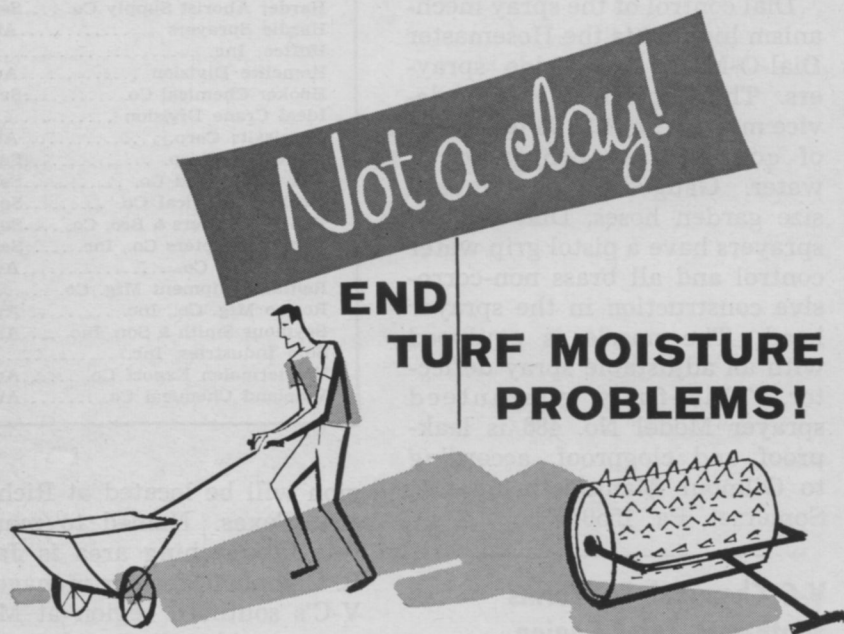
New Voice In Florida. With recent passage of legislation in Florida that includes lawn spraymen in a law which previously only regulated structural pest control operators, the Florida State Board of Health expanded its four-man governing board to five. Heretofore only PCOs were industry commissioners; now a sprayman has been added. The new appointee is Larry Nipp, who runs American Power Spraying in Ft. Lauderdale. Larry is also acting president of the National Spraymen's Association. He and the other commissioners have been up to their ears taking care of the backlog of complaints that piled up recently during a period of inactivity, but with the enlarged board and a stepped-up schedule of hearings, they expect to limit meetings to about three a year, taking a total of nine days. Larry has always been an effective spokesman for vegetation contractors.

* * *

Out On A Limb. Unexpected participants in the social hour entertainment at the recent ISTC Washington meeting was its president, Joe Dietrich of Greenwich, Conn., and our own staff biologist, Don Hendricks. Featured attraction was a seven-veil, minus six, belly dancer whose graceful Grecian gyrations were the object of undivided attention of all men delegates. (The women pretended to look the other way!) The "Lady of Greece" selected Joe and Don from the audience to do similar hip squirmings, arm wavings, and head bobbings while she covered them with her lacy silks. You might say it was all to no a-veil. The boys wood rather she would leaf them alone, being convinced she was embarking up the wrong tree. Our man wished this pseudo-Greek would urn her money at somebody else's expense. She did, Don. Southern tree-men picked up the tab.

* * *

What's In A Name? We've just completed another WTT Reader Survey (our thanks to the more than 500 who who answered our questionnaire) and discovered you can't always tell what a company does by its name. Some tree firms do no tree work; lawn companies specialize in weed control; and a "cemetery" company does only turf work. Seems very few concentrate on only one phase of this business.



New DIALOAM®

Soil Conditioner Absorbs 150% of its weight in water, provides controlled release of moisture, won't compact.

At last here's a soil conditioner/mulch/top dressing that ends turf moisture problems. Won't cake, won't leach away. DIALOAM is a granulated, diatomaceous earth composed of millions of microscopic water-life plants and fossils. DIALOAM absorbs up to 150% of its weight in water. Moisture release is gradual, just right for healthy grass . . . a life-saver in dry weather. Particles tend to work into the earth giving it a porous, loamy texture that leads to strong, healthy turf. Try DIALOAM on your turf this year! Write for more information.



SINCE 1843



EAGLE-PICHER

The Eagle-Picher Company
American Building, Dept. W-10
Cincinnati, Ohio 45201



Geigy now offers you five industrial herbicides.

All five Geigy industrial herbicides deliver long-lasting residual control of annual and perennial weeds. With once-a-year application, too. Yet, each one has special features to solve specific problems. As a group, they'll handle just about any weed problem you encounter. On level land, or slopes. In and along paths, drives, lots, and roads. Around buildings, signs, markers, fences, and poles. Everywhere weeds are not wanted.

ATRAZINE 80W. Wettable powder. For spray application before or soon after weeds emerge.

SIMAZINE 80W. Wettable powder. For spray application before weeds emerge.

PROMETONE® 25E. Emulsifiable solution. For spray application on established weeds.

ATRA-BOR™ 8 P. Pellets. Contains Atrazine. For dry application where sprays are impractical.

PRAMITOL® 5P. Pellets. Combina-

tion of Prometone and chlorate-borate. Especially effective against deep-rooted perennials.

May we send you fully descriptive literature on any or all of our herbicides? Just write.

Geigy Agricultural Chemicals, Division of Geigy Chemical Corporation, Saw Mill River Road, Ardsley, New York.

Geigy

CREATORS OF CHEMICALS FOR MODERN AGRICULTURE

Ansar[®] kills weeds!

Today "Ansar" is America's number one post-emergence herbicide. It's available in a wide range of formulations to meet your specialized needs. For example:

"Ansar 529" (a liquid solution with surfactant added) is a selective herbicide, remarkably effective in eradicating Johnson Grass and most other weeds in cotton and non-crop areas. It's non-toxic, easy to apply, harmless to cotton and surprisingly economical.

"Ansar 560" is a general herbicide—a long-awaited replacement for 'weed oil.' It completely eliminates weeds along roadways, ditches, fence rows and around

buildings and storage areas. "Ansar 560" is more economical than weed oil. . . and far more effective.

There are other "Ansar" products to meet special needs . . . and in the future there'll be more! In the development stage are "Ansar" herbicides for use in orchards, vineyards and many other crop areas.

So keep in touch with your county agent and your local farm chemicals dealer . . . and keep your eye on the big "Ansar" X trademark. It's a product of

THE ANSUL COMPANY, MARINETTE, WISCONSIN.



"ANSAR" IS MANUFACTURED BY ANSUL, SPECIALISTS IN WEED CONTROL