



Coming
in
December!

Suppliers:

The Perfect Place to Advertise Your
Weed, Turf, and Tree Market Products

Reserve Space Now in the

1966

Suppliers Guide

To Appear in the December '65 Issue of WEEDS TREES AND TURF

1. Boldface Listings. Suppliers using advertisements in this issue will be listed in boldface type in the directory under all categories of products the advertiser supplies. Your name stands out when readers refer to this handy directory which applicators use all year round!

2. Reader Reply Card. Bound into every December issue will be a Reader Reply Card. All readers have to do to get more information on advertised products is check off the advertiser's name and send the postage-paid card to us. We forward neatly typed lists of inquiries.

3. Repeat Readership. In the 1966 WTT Suppliers Guide, we have a complete catalog of weed, turf, and tree maintenance chemicals and equipment. Whenever readers are seeking a source of supply, this handy reference book offers them the easiest way to find it.



BONUS

Bonus for Advertisers:

1. Bold Face Listings

2. Reader Reply Card

3. Repeat Readership

LISTED in the 1966 WEEDS TREES AND TURF Suppliers Guide, readers will find all chemicals and equipment used for weed and brush control, turf management, and tree maintenance. Included are such chemicals as herbicides, insecticides for turf and trees, fungicides, and fertilizers, among others. Equipment listings include such items as power sprayers, vertical mowers, trimming and pruning tools, chippers, and many others. This is the only Suppliers Guide compiled annually for the entire vegetation maintenance and control industry in America.

Reserve Space today!

**WEEDS
TREES
and TURF**

Phone 216 + 771-4169

1900 Euclid Ave., Cleveland, Ohio 44115

**CLOSING DATE
NOVEMBER 10th**

*Circulation
Over 10,000*

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.

Movie. The popular and informative motion picture "The Fight To Control Dutch Elm Disease" is available for showings to interested groups, such as city councils, garden and service clubs, etc. Please make your reservations well in advance, and give alternate dates if you can.

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.

NAME _____

TITLE or FIRM _____

STREET ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____



AMERICAN OIL COMPANY

—Here's solo in Action for Vegetation Maintenance!—

for WEED CONTROL

below: the Solo Motor Scythe
3½ Foot Cutterbar



right: New Solo Junior
2½ H.P.—Only 15 lbs.

TURF MANAGEMENT

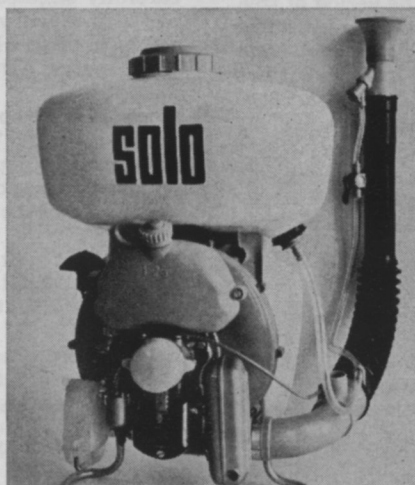


BRUSH CONTROL

left: the Solo Mistblower
5 H.P.—Only 27 lbs.



above: Solo Chain Saw 70-A
5 H.P., 7 H.P. & 9½ H.P.



TREE CARE

Four Good Reasons to Join the Swing to solo!

WINTERPROOFING ORNAMENTALS?

SOLO Mistblowers are the easy answer to your winterproofing problems . . . ornamentals in the nursery, in home lawns, and in large grounds can be protected against winter damage through a SOLO Mistblower spraying program. Write for details.

(SOLO machines are also ideal for coloring Christmas trees!)

■ Now from SOLO, manufacturers of the world's largest selling mistblowers, comes a complete line of maintenance machines for all phases of the vegetation management industry.

- For Contract Applicators
- Arborists, Foresters
- Railway, Highway, Utility Rights-of-way Supervisors
- Nurserymen, Golf Course Superintendents

■ Dealer Inquiries Invited!

SOLO Industries, Inc.
P. O. Box 128, Dept. 76
Woodside, N.Y.

**MAIL
TODAY**

Please rush me details on SOLO's proven power machines for

brush control turf maintenance tree care.

Name

Firm..... Position.....

Address

City..... State..... Zip Code.....

I'm interested in a dealership.

Solo Industries, Inc.

P. O. Box 128, Dept. 76

37-41 57th St.

Woodside, New York



How healthy is your business?

You take the pulse of your business...constantly...expertly. Are you just as careful about yourself? About your employees? Do you know that cancer strikes one in four Americans today? That over half can be saved if the warnings are heeded in time and treatment begun promptly? Today's executive knows that sound health is smart business. He never misses his annual health checkup, and reminds his employees to have theirs. To keep them alerted to life-saving facts about cancer, he has an American Cancer Society public education program in his plant. Do you? For information about this free program, call your local Unit of the American Cancer Society. Fight cancer with a checkup—and a check. Send it to CANCER, c/o Postmaster.



AMERICAN CANCER SOCIETY

WEEDS TREES and TURF

FORMERLY WEEDS AND TURF

October 1965
Volume 4, No. 10

Features:

The Thatch Problem By Dr. Robert W. Miller	8
Job Estimating in the Tree Business By W. H. Bartles	15
How Chem-Trol Eliminates Weed Control Callbacks with Geigy's Prometone	17
"Don't Start the Way I Did," Bitterman Advises By Marion Rubenstein	18
Organization of National Spraymen's Association Forges Ahead as Group Plans Convention in '66	21

Departments:

Editorial: Self Protection	6
WT&T Mailbox	7
Know Your Species: Wild Carrot	23
Meeting Dates	24
Classified Ads	25
Advertisers Index	25
Trimmings	26

JAMES A. NELSON
Editor and Publisher

DONOVAN E. HENDRICKS
Staff Biologist

MICHAEL I. LAH, JR.
Production Manager

D. BUNKIN
Circulation Supervisor

Advertising Representatives
National Headquarters
1900 Euclid Avenue
Cleveland, Ohio 44115
Phone: Area Code 216+771-4169

Chicago 60601
Peck & Billingslea, Inc.
185 North Wabash Ave., Suite 1809
Phone: 312+DEarborn 2-0292-93

New York City 10017
Billingslea & Ficke
420 Lexington Avenue
Phone: 212+532-1632

WEEDS TREES AND TURF is published monthly by Trade Magazines, Inc. Executive, editorial, and advertising offices: 1900 Euclid Ave., Cleveland, Ohio 44115. Publication office: Corner of East North St. and Cadwallader St., Fostoria, Ohio. Send all correspondence to WEEDS TREES AND TURF, 1900 Euclid Ave., Cleveland, Ohio 44115.
Single Copy Price: 50 cents for current issue; all back issues 75 cents each. Foreign \$1.00.
Subscription Rates: U.S. and possessions, 1 year \$3.00; 2 years \$5.00. All other foreign subscriptions, 1 year \$4.00; 2 years \$7.00. **Change of Address:** Three weeks advance notice is necessary for change of address. Both old and new address must be given. Post Office will not forward copies. Third Class postage is paid at Fostoria, Ohio.

Contents of this Issue © Trade Magazines, Inc., 1965

Keep Your Weeds Trees and Turf magazines

In specially designed Permanent Binders

Helps You Keep 24 Full Issues
of *Weeds Trees and Turf*
In One Neat Package

- ▷ Keeps back numbers handy for quick reference
- ▷ Protects issues from needless damage. Holds 24 issues.
- ▷ Gives your bookshelf a neat appearance

Magazines can be inserted
as they are received

Still Just \$3.25

Please send check or money order to

WEEDS TREES AND TURF

1900 Euclid Ave. Cleveland, Ohio 44115

Changing Your Address?

If so, notify our circulation department right away to be certain the magazine reaches you at your new location. The Post Office won't forward your copies. So when you write us, make it at least three weeks in advance of your moving date, and include your old address, as well as the new one. We'll see you don't miss a single issue.

Send old and new address information to:

WEEDS TREES AND TURF magazine

Circulation Department

Room 802

1900 Euclid Avenue

Cleveland, Ohio 44115

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



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!

WEEDS TREES AND TURF

WEEDS TREES AND TURF
1900 Euclid Avenue
Cleveland, Ohio 44115

ORDER NOW

Please enter my subscription at once so I can count on keeping up to date each month with all that's new in vegetation maintenance and control.

Name Position

Firm Type of Business

Street Address

City State Zip

check enclosed Bill me

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