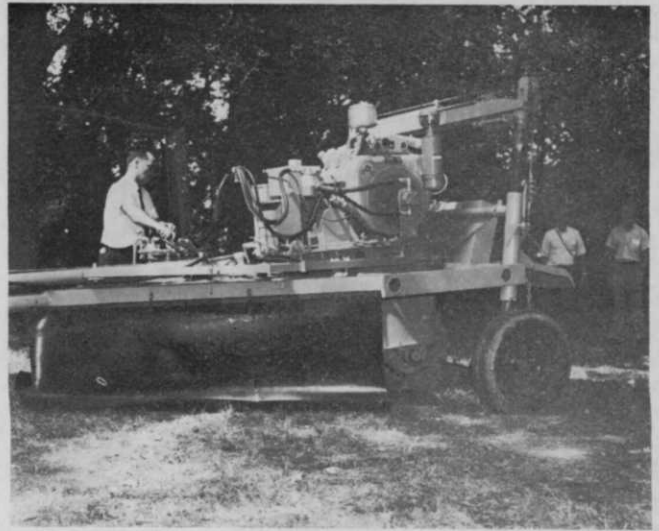


National Beautification Program. In talking to NAA members, Lederer urged that they not forget the profit motive of the total program. He reviewed the Federal Housing Administration problem in Florida where a backlog of foreclosed homes was not selling. After the FHA spent an average of \$1200 per home on landscaping, the homes were moved at a price which more than compensated for the additional investment. He also mentioned the program of the Volkswagen Corporation which has used landscaping as "a major step in attracting and holding

**Vermeer Pow-R stump cutter, right, removes stumps 6" to 18" below ground level. Vermeer demonstrated this unit along with tree moving equipment.**



**Fairmont Hydraulics** line of equipment included 7 hydraulic action tools. Tools are built at Chicago, Ill.



**Baker Equipment Manufacturing Company** has been selling their boom and bucket, above, in combination with Mitts and Merrill chipper pictured below.

high caliber employes who are specialists." Landscaping of dealer sites includes a patio, the primary purpose of which is a comfortable place for employes to relax during coffee and lunch breaks.

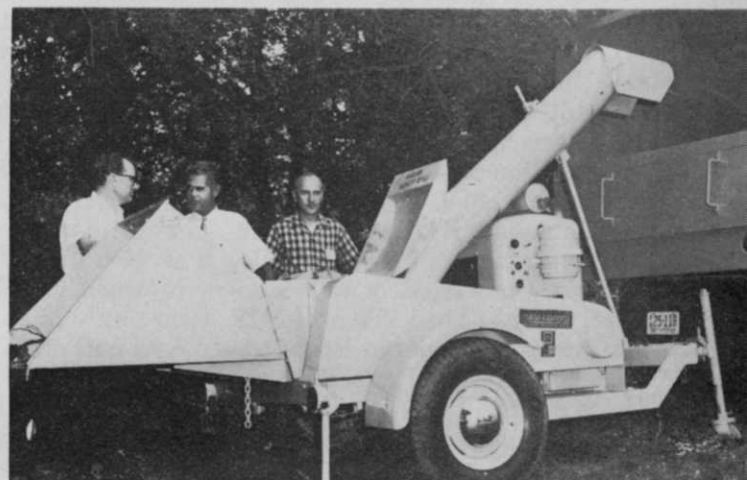
On sales and repeat sales, Archibald E. Price who operates his own tree care business at Glenview, Ill., reported that his firm tries to sell their service at a prestige level. "We try to do good work and we try to work at a profit, a good profit, but a fair profit," he said. One of the most important features of up-to-date service selling is keeping talk at a minimum, Price believes. He suggests saying as little as possible. Sell them and leave them is his motto. He told the group that if you cannot sell early during the call, leave quickly and return at a later date. The days of fast talking service selling are over, Price said.

Price feels that a salesman should not be overtrained or

undertrained, but at the same time should have a good, basic knowledge of the work and sales approach. Price said that on sales calls, always made at the front door, when no one is home his salesmen leave a card to show that they are calling and are interested in the client's property.

Price says that when the sales-

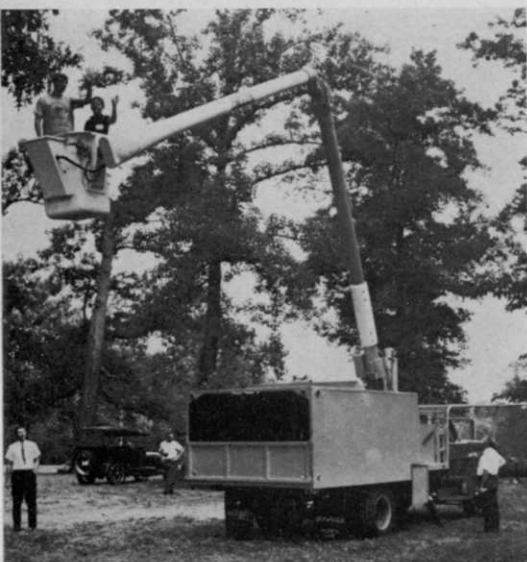
**Mitts and Merrill chipper** with swing-away feed chute and staggered knife pattern was demonstrated by representatives, Leon Baldwin, left, Suffern, N. Y., Gene Deas, center, Richmond, Va., and Jack Ramous, Saginaw, Mich.



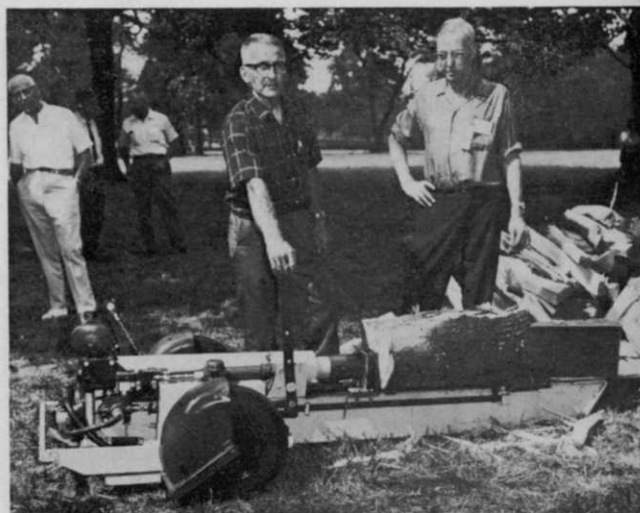


**Asplundh chipper**, built by Asplundh Chipper Co., Huntingdon Valley, Pa., is demonstrated here by Harold Gentile who during Conference served as chairman of trade exhibits.

and claims offer extensive work for the qualified consultant. As governments have widened streets, changed highways, and constructed throughways, Scott reported that he has found a need for an unbiased expert in the vegetation field. He has also found need for his services in settling insurance claims. He warned any arborist planning a consulting venture to be wary of the phone call from appraisers who are simply fishing for knowledge and who attempt to pick up bits and pieces of information. "We simply ask them if they wish to engage us," he



**Skyworker bucket** is available in heights of 26, 31, 36, and 45 feet. Comes with all fiberglass upper boom, built by Hughes-Keenan, Delaware, O.



**Lickity Log Splitter** built by Piqua Engineering, Piqua, O., comes in a number of sizes. Demonstrating at conference are Red Sanders, left, West Milton, O., and J. Ervin Shainline, Collegeville, Pa.

man cannot answer a client's question, he tells the client and then phones back the information.

In the Price firm, kicks are answered as fast as leads. Many complaints are mere misunderstandings. These, Price feels, need to be settled at once, to keep the customer happy, to keep him from talking to his neighbor, and to insure repeat sales. Service sales and repeat sales involve the entire spectrum of selling, Price believes. Salesmen are expected to follow through on each sale, insuring satisfied clients.

A bit unique on the Conference program was a discussion on operation of a consulting service by Norman J. Scott, owner of the Canadian Horticulture Consulting Company of Willowdale, Ontario, Canada. Scott who formerly operated Brookdale Kingsway Nurseries at Bowmanville, Ont., found after selling out his business that he tired of retirement.

Much of Scott's consulting

work consists of tree information, but he finds that as is true with most arborists that he deals in a number of phases of horticulture. With values in the economic world changing, Scott has found the public, especially corporations and governmental units, willing to pay for technical information relating to the field. Many arborists dispense advice freely with no thought of remuneration for this service. Such, Scott says, is not true of most other professions.

Scott told ISTC members and arborists that he had found a definite need for a consulting service in the horticultural field to work closely with architects on the outdoor aspects of business and municipal construction. The landscape architect, he said, does not fulfill this requirement.

Appraisals and valuations as they apply to expropriations



**Lynn Partee**, left, Blume System Tree Experts, Houston, Tex., receives Class I safety award from NAA safety division chairman, Glenn Burns. Blume won the award for companies with 100 or more employes for the 7th consecutive year.



**Clarke W. Davis, left, executive-secretary of NAA, chats with newly elected president, Kenneth P. Soergel, Soergel Arborists, Gibsonia, Pa., center, and outgoing president, Harry A. Morrison, Wilmette, Ill.**

with illustrations to assure identification. Among the most severe diseases this past year in Pennsylvania, according to Professor Nichols, was anthracnose on sycamore. Trees showed early symptoms which resembled frost injury. Sparse foliage, except for tufts of healthy leaves at the tips of the upper branches was also typical. Fortunately, he said, most trees recovered and sent out new crops of normal leaves. Much of the early infection could

said, "if not, no discussion about the problem."

Another phase of the business which has proved valuable is a contract he has with a large department store. This store with several hundred outlets seeks his advice on handling, care, and selection of their retail horticultural stock.

Scott has found that university staff personnel are pleased to assist him on a fee basis. He believes that consulting work offers an opportunity for the trained arborist with experience, but does not recommend it for a young man just out of college. He warns that the consultant cannot become personally involved but must rely on his judgment and professional knowledge. Also, he told the group that the consultant must stick to consulting problems only, keeping away from landscape planning and other similar areas.

Tree culture sessions, several of a workshop nature, made this

**NAA board members, with the exception of newly elected Hyland Johns, Jenkintown, Pa., are: left to right, front row, Harry A. Morrison, Wilmette, Ill.; Kenneth P. Soergel, Gibsonia, Pa.; Riley Stevens, Portland, Ore.; and back row, Paul R. Walgren, Jr., Hamden, Conn.; William A. Rae, Arlington, Mass.; William P. Lanphear III, Cleveland, O.; and Glen Burns, Canton, O.**



43rd Conference among the most productive for arborists. Typical of discussions was that of Professor Lester P. Nichols of the department of plant pathology at Pennsylvania State University, University Park, Pa. He demonstrated tree disease problems

have been prevented, Professor Nichols stated, by a single application of a phenylmercury spray at bud-break.

A rather common tree problem today is injury from salt used to deice roadways. Professor Nichols said much of the damage does not come from salt drainage, but from salt spray

*(Continued on page 26)*



**Entertainment and Hospitality Chairman George T. Lewis, center, Lewis Tree Surgeons, Media, Pa., directs new Conference arrivals Mr. and Mrs. Marshall Sutherin, Sutherin Bros., Memphis, Tenn., about town.**

**Pitman chipper built by Pitman Manufacturing Co., Grandview, Mo., features according to the maker, shallow cutting action, unique self-aligning cutting blade and emergency safety brake.**



# When Where and How to



**Intensified production and handling techniques** result in a high quality product at a reasonable price. Customers, especially those building new homes, have demonstrated their willingness to pay for instant, carpet-like lawns.

## Sod For Turf

By P. E. RIEKE and R. E. LUCAS

Department of Soil Science, Michigan State University, Lansing, Michigan

RAPID industrial and suburban development seems to require that period of "building and mess." Very shortly follows the day for moving in or dedication, when landscaping must be finished. A popular practice at present is the use of "instant turf"—grass sod—to give the landscape an early, beautiful setting.

Well over 50% of new lawns in Michigan are sodded. Sodding has a major advantage over seeding in that it can be done at any time the weather is suitable and the soil can be prepared. This normally means May through October in Michigan. It is particularly advantageous over seeding from May 15 through July, when uniform, weed-free seedings are difficult to obtain. Some sod is even laid during late fall or early winter, which does not permit good "knitting" of the roots into the soil previous to freezing of the soil. Under these conditions, desiccation, the dry-

ing out, of the sod may become a problem.

The use of sod for turf establishment on slopes has a decided advantage in preventing erosion. If the slope is very steep, it may be necessary to peg the sod strips to prevent slippage. Sodding the lawn of a new home can also reduce the dust and mud hazards of a seeded lawn.

Sodding may be more expensive than seeding, depending on location, but the advantages far outweigh the cost factor in the minds of many people in our present affluent society. The rapidly expanding sod production industry, with increased advertising and an improved image, make the buyer more aware of the use of sod for turf establishment as well.

The success of sodding is determined by the quality of sod used, the care taken in laying the sod and its subsequent management.

Quality turf begins with the seed source. Purchase sod from

a reputable sod producer who buys premium quality seed. The presence of weeds, especially weedy grasses such as bentgrass or annual bluegrass (*Poa annua*), can ruin a good quality turf. Quackgrass may also be a problem in poor quality sod obtained in northern climates.

The soil on which the sod was produced is an important consideration for some projects. For example, sod used on football fields should probably be grown on mineral soils of sandy loam or loamy sand texture for best results. This should lead to a turf which is less likely to tear, will allow good water penetration and resist compaction. For general turf use, sod grown on organic soils will establish equally as well as that from mineral soil under desirable environmental conditions.

The trend in Michigan is to the production of Merion buegrass sod on organic soils. At least 15,000 acres are in production on



**A beautiful turf** can be most readily established on sloping areas with sod. Erosion is much less of a problem on terrain of this type.



**Thinning of bluegrass sod** will occur under shady conditions because of susceptibility to powdery mildew.

these soils. The acreage has been increasing between 10% and 20% each year. Organic soils offer such advantages as light weight and larger pay loads, ease of harvest, and good moisture retention. Grass grown on organic soils grows better in midsummer because of the radiation and loss of heat at night, which results in cooler temperatures. The result is a high quality sod.

#### **Select Grass Variety To Fit New Site**

The variety or species of grass should be taken into consideration. Personal preference as well as site and use of the area are important factors in selecting the type of grass to be used. The same principles apply as for establishing turf from seed. Bluegrasses, especially Merion bluegrass, should not be used under heavily shaded conditions because of their susceptibility to powdery mildew. A mixture of varieties and/or species is generally to be desired, because of a wider base for resistance against such diseases as powdery mildew, rust, leafspot and stripe smut.

Good quality sod should be uniform with a dense system of roots and rhizomes. The suggested thickness of roots and soil varies from three-eighths to one inch. It is generally believed that the thinner-cut sod will lead

to fewer management difficulties, once established, although no experimental evidence is available to substantiate this. If cut sod is to be held more than a day before laying, it should be unrolled and kept watered. Rolled or stacked sod may break down rapidly due to heating, especially under high temperature and moisture conditions. In recent years, some sod producers shipping long distances have vacuum-cooled their product to maintain quality. Future research on handling and harvesting techniques will surely lead to greater market potential for sod growers because of longer shipping time and distances.

Soil preparation is one of the most abused steps in the sodding operation because a poorly prepared seedbed can be covered up temporarily. This leads to a poor quality turf ultimately. The soil should be prepared just as carefully as when seeding a new lawn.

Adequate drainage should be provided. In most cases, surface drainage with a very gentle grade ( $\frac{1}{2}$  to 1%) in all directions away from the building will be satisfactory. Any pockets where water will collect should be eliminated. If the soil drains slowly or surface drainage is not adequate, tile drainage may be necessary. This is especially important for areas which will re-

ceive heavy traffic, since excess water will lead to rapid compaction under traffic conditions.

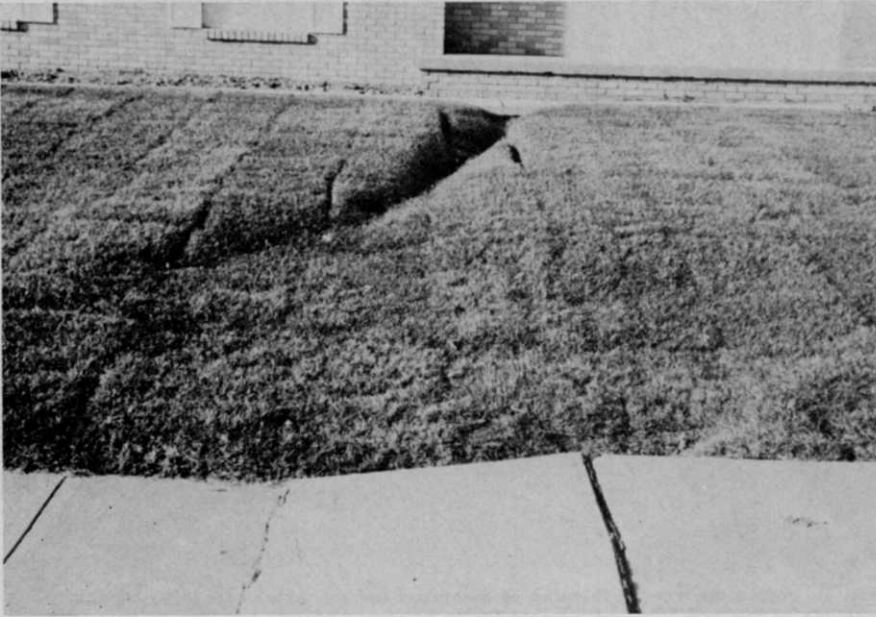
#### **Settling Is Problem In New Lawns**

Care should be taken to insure complete settling over tile and sewer lines and around buildings. Many beautiful turfs have been marred by settling in these areas.

If needed to improve soil physical properties, amendments may be added. The most desirable amendment would be a good topsoil, rather high in organic matter, of loam to sandy loam texture. Care must be taken to watch for weeds and weedy grasses in topsoil. A layer of at least six inches of topsoil should be used, unless this material is worked into the base soil. For clay soil, amendments such as peat and sand may be used, while peat and clay loam can be added to droughty, sandy soils. In order to prevent layering of these materials, they should be worked into the soil to a total depth of at least six inches.

In cases where the soil is heavily compacted to a considerable depth, it would be desirable to work the soil as deeply as possible in order to allow natural drainage to take place. Stones, sticks, and other debris should be removed and the soil tilled to break up large clods.

Fertilizer and lime should be



**Expensive repairs** are often necessary to correct improper soil preparation over sewer lines.

applied according to soil needs. A soil test can best give this information. If soil tests are not available, however, a general recommendation would be 15 to 20 pounds per 1000 square feet of a fertilizer such as 12-12-12, which contains approximately equal quantities of nitrogen, phosphate, and potash. The higher phosphate and potash containing fertilizers should probably be continued for a period of two to three years if subsoil is the base on which the sod is laid. Most recommendations suggest mixing the fertilizer with the soil.

Lime should be applied if the pH is below 5.5 to 6, especially for bluegrasses. It is particularly important for the lime to be worked into the soil, at least 4 inches deep, since it will not readily move into the root zone if applied on the surface.

A final raking will probably be needed. The soil is then often rolled to insure level conditions.

Sod should not be laid on dry, powdery soil. Under these conditions, it would be well to water the area one or two days previous to laying, if possible.

The first row should be laid straight, usually in some suitable direction that matches the landscape. Successive pieces of sod can be matched so the joints do not coincide across the yard. Care must be taken in making

sure the edges of the sod are in good contact with each other, yet not wrinkled or overlapped.

A light rolling to bring the roots into good contact with the soil should follow. New roots will likely dry up rapidly if they must grow into air pockets before reaching the soil surface.

The newly sodded turf is not yet established. A thorough watering should follow the final rolling operation. This is the homeowners responsibility. De-

pending on the time of year, subsequent watering may be needed every day to keep the sod moist, until the roots have grown down into the soil. This point is often overlooked, as sod has a tremendous evaporating surface. The available water in a layer of sod is less than  $\frac{1}{4}$  inch. Once established, watering can be reduced to once a week or less, depending on the environmental conditions. Care must be taken not to overwater. Under slow drainage conditions, excess water would limit root growth. Soils containing little sand would also be quite subject to footprints and compaction if too wet.

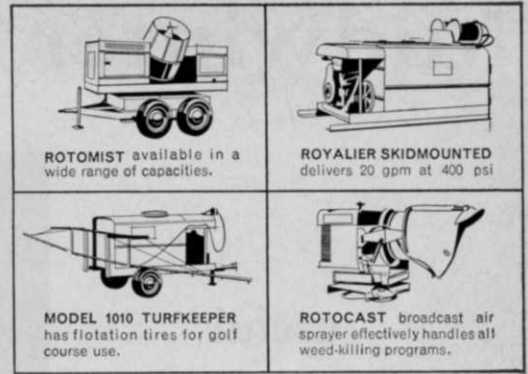
Once the roots have "knitted" into the soil below, good turf management practices should be followed for the given turf conditions. Special attention may be necessary in providing regular irrigation and fertilization, since the root systems may not be completely developed. This is especially important during the first year when nitrogen may be needed in greater quantities than in subsequent years.

When the base soil is an alkaline subsoil with a pH above 7.5, it may be necessary to use a regular program of iron nutrition until the grass is well established.

**Delay in watering** after the sod is laid can be costly, especially during hot weather.



This Rotomist® sprayer has the greatest "rate-of-work" capacity ever developed for shade tree work. It is a design that provides a *controlled air pattern*, all the way to the top of the tallest trees. This means adequate coverage, as well as more efficient use of your chemicals. It means versatility, because the Rotomist pivots 110° vertically, rotates through 360° horizontally. Which means you can put your spray material—either dilute or concentrate—anywhere you want it. Up in trees. Over an embankment. Down, to windrow leaves. And, of course, John Bean makes many Rotomist models to match your requirements. They all mean business.



# The Business end, In every way!



POWER SPRAYING EQUIPMENT

**JOHN BEAN**

DIVISION

Lansing, Mich. - Orlando, Fla. - San Jose, Calif.

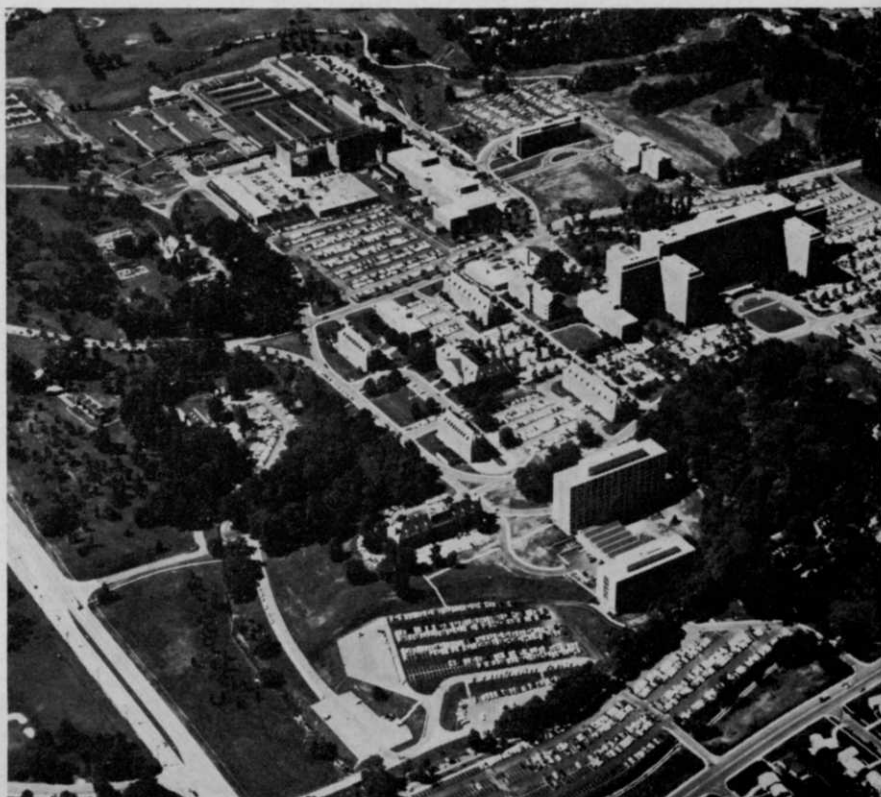
When Writing to Advertisers Please Mention WEEDS TREES AND TURF

# Midwinter Weed Control

useful  
practice  
for  
National  
Institutes  
of Health

By **GEORGE P. ROSENKRANZE**

Landscape Architect, National  
Institutes of Health, Bethesda, Maryland



**The National Institutes of Health** located on 306 acres of ground in Bethesda, Maryland conducts a program of animal research and clinical studies in its own laboratories and promotes medical research in other institutions through a program of grants and awards. There are a total of 48 buildings on the NIH "campus".

**D**URING the fall of 1965, conditions here at the National Institutes of Health were rather hectic, for the turf unit, of grounds maintenance section. Many of our turf areas were in very poor condition. A 5-year drought, along with more foot and vehicular traffic, had weak-

ened and compacted large sections of turf. An extensive building program had torn up other large areas. These factors favored weed growth over turf growth, and an intensive renovation program was in order. Unfortunately, the trees began shedding leaves early. Most

leaves were down by late November and had to be removed. Enough rain fell, and temperatures were moderate enough that mowing was continued until mid-December.

Because of these and other delays, the turf unit could not begin the fall herbicide program until after Christmas, and then only when the unpredictable Washington area weather permitted movement of spray equipment onto turf areas. Temperatures here normally fluctuate widely, in some cases, from 70°F to below freezing within a 24-hour period. There are enough days during winter, however, when temperatures are in the mid-30's and lower 40's to permit a modified weed control program to be carried out, provided that herbicides proved effective at these temperature ranges. The program was begun first week of January when frost was off the



**Administration Building** at the National Institutes of Health is surrounded by wealth of well maintained trees.



grass by 10:00 a.m. The soil beneath the turf was frozen fairly solid, so there was no damage from wheel ruts by sprayer or tractor. The sprayer used was an old but serviceable 300 gallon tank-type with three 8-foot booms which could be used separately in tree areas or all together in open areas to cover a 24-foot swath of turf. Pressure was found to be rather important, inasmuch as pressures much over 50 pounds created a drift problem, and anything much lower did not give good coverage between the fans of the spray nozzles.

It was decided to concentrate the control program on those species causing most concern here. The most troublesome winter weed pests at this location consist of smooth chickweed, mouse eared chickweed, clover, henbit, and ground ivy. Due to the late start for this program and the scarcity of suitable days for carrying it out, the scope of the operation was limited to those areas with heaviest infestations and where most obvious results could be noted.

Ten days after the first application, a light snow fell covering the area to a depth of one inch. This remained on the turf for several days. As the snow melted, the chickweed on treated turf areas turned bright yellow before shriveling and disappearing. The program was continued as weather permitted until early spring and, with the arrival of spring rains, a definite line between the treated and untreated areas proved success of the venture.

We decided to attempt a more general program during the winter of 1966-67. Plans were to cover the entire reservation or approximately 150 acres of turf area. Results to date in all phases of the operation have been quite good. The addition of dicamba to the spray mixture has given good kill on mouse-eared chickweed, henbit, and ground ivy which had shown some resistance to 2,4,5-TP alone at this time of year. No damage has been observed to any of the trees and shrubs on the grounds. It appears that a useful weed con-

trol program can be carried out in areas which are free of snow.

Two hand-propelled spreaders with a 4-foot coverage were purchased and used in more confined areas around shrub beds and narrow strips where it was not feasible to use the boom sprayer. This equipment covers by means of a revolving disk which slings the solution being used in a circle, rather than by pressure, and eliminates the drift problem found with pressure equipment. Results obtained with various weed species the previous winter also indicated the need for herbicide materials of more than one type, as well as a variety of concentrations. The 2,4,5-TP treatment was continued with spreader sticker in areas which covered the root zones of trees. The only change here was the addition of a wetting agent in small amounts, one ounce per tankful of solution in order to achieve better leaf penetration by the herbicide. In areas free of tree cover, a quarter pound of dicamba was added to one pound formulations of 2,4,5-TP per acre. Good results had been obtained with this combination during the summer where it had been used on knotweed and wild onions.

This program was started in December and continued as rapidly as conditions permitted. By late February the entire reservation had been covered by at least one application of spray.

With the approach of warm weather, some rather dramatic results were apparent. The only broadleaf weeds still remaining in our turf areas were those missed by the sprayers and seedlings which were just beginning to germinate, such as dandelions and plantains. Our grass benefitted by an early start and was well ahead of the winter weed horde. For areas where weather conditions permit use of equipment in winter months, this operation seems to be a useful tool in good turf maintenance.

*(Ed. Note: Trade names are not permitted to be used by the National Institutes of Health. In the above instances Banvel-D (dicamba) and Silvex (2,4,5-TP) were the commercial chemicals used.)*

*Reprints Available*

## Survey on Turfgrass Management Training Series

WEEDS TREES AND TURF magazine is making available its series on Turfgrass Management Training which ran earlier this year. This series listed college level training available at 26 colleges and universities across the nation.

A number of universities have requested reprints for use with their own student counseling programs and for use by high school counselors.

If these can be used in your state, contact WTT. Because such information on training can help in informing prospective students about the industry, WTT is making these available at the reprint cost. Cost per thousand for the 10-page reprint will be \$30, plus shipping. Lesser amounts can be ordered at \$5 per hundred, plus postage.

**For reprints, write:**

**WEEDS TREES AND TURF  
1900 Euclid Ave.  
Cleveland, Ohio 44115**

# 4 reasons why it pays to spray for Dutch elm disease control this fall



**1. Effective.** 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.

**2. Better weather.** There usually are more good spraying days in the fall than in spring. It is much, much easier to get thorough coverage on a pleasant, relatively calm fall day, than on a gusty day in spring.

**3. Efficient use of labor.** You get better distribution of work loads by beginning your Dutch elm sprays in the fall—finishing in spring, if necessary.

**4. Fewer bird problems.** There are fewer problems with birds and other wildlife (real or imagined) when you spray in late fall.

To assist you in saving our beautiful elms, we offer: **AMOCO® Elm Spray**—25% DDT plus White Oil, the “old standby” in Dutch elm disease control programs, proved effective in wide commercial use since its introduction in the early 1950’s.

**AMOCO® Elm Spray-32.4**—32.4% DDT in a carefully selected xylene solvent, also used with very satisfactory results since its introduction in 1960.

**AMOCO® Methoxychlor Spray**—Used in many control programs, mainly in the spring, for maximum safety to birds.

For products, information and American Oil help on your specific pest control problem, contact your local American Oil Office, your spray materials dealer, or write direct to: American Oil Company, 910 South Michigan Avenue, Chicago, Illinois 60605.



YOU EXPECT MORE FROM AMERICAN AND YOU GET IT!\*

American Oil Company \*Trademark