

WEEDS

TREES

and TURF

FORMERLY WEEDS AND TURF

January 1966

Chemical
Pruning of
Trees

Page 12

Can
Phenoxy
Herbicides
Be Used
on
Riverbanks?

Page 8



How to Calculate
Aquatic Doses

Page 18



Monthly magazine of methods, chemicals and
equipment for vegetation maintenance and control

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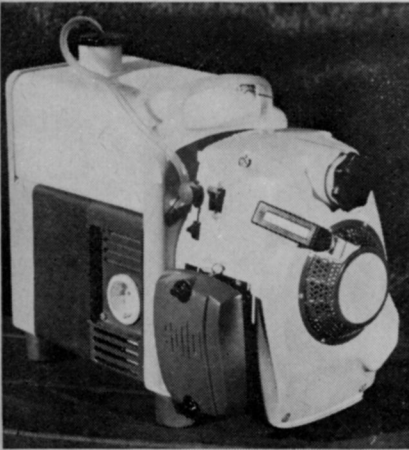
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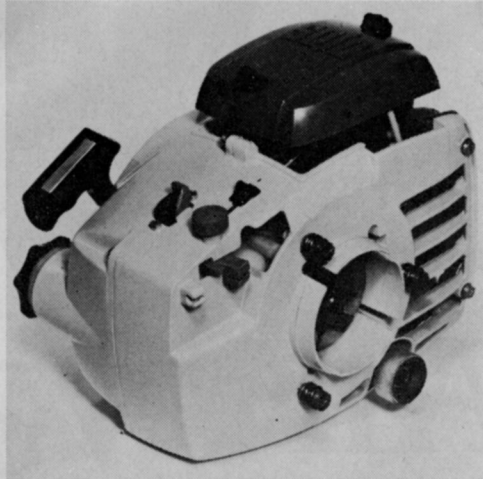
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FORMERLY WEEDS AND TURF

January 1966
Volume 5, No. 1

Features:

Effect of Phenoxy Herbicides on Riparian Vegetation and Water Quality By W. E. Sopper, I. C. Reigner, and R. R. Johnson.....	8
Chemical Tree Pruning By Dr. T. O. Evrard.....	12
New Meter-Miser is Driftless Grounds Applicator.....	16
How to Calculate Pounds or Gallons of Aquatic Herbicides from Water Surface Acreage.....	18
Sod Industry—Big Business in Maryland By Elwyn E. Deal.....	19
3,000 Expected to Attend 37th International Turfgrass Conference and Show, Feb. 13-18.....	21

Departments:

Editorial: Deliberate Progress.....	6
WTT Mailbox.....	7
Know Your Species: Cocklebur.....	23
Meeting Dates.....	24
Classified Ads.....	25
Advertisers Index.....	25
Trimmings.....	26

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Deliberate Progress

As announced in WTT's October issue, the National Spraymen's Association is planning its first convention in 1966, but leaders are experiencing some delay choosing a site and date. Officers favor Florida where out-of-state delegates might combine pleasure with business and a larger attendance might be assured. Trouble was, however, that it could not be held during this winter's "off season" when hotel rates are lower in the beach areas because there hasn't been enough time to legalize bylaws, nor to publicize the event. By the time both steps could be realized, spring and summer would be here. Spraymen are busiest then and few could get away. Others propose the meeting be held in the Midwest to equalize travel time and expense and to draw a greater number of participants from all parts of the country.

While these deliberations continue, NSA board members are actively seeking legal counsel to draw up a proposed constitution and bylaws, acceptable to all segments of the industry, to be voted upon at the convention.

In this formative period delays are to be expected. Organizers have their own businesses to run. The time they put in to get NSA on the road is contributed. So far about \$500 has been gained from membership dues, not enough of course to hire an association secretary nor pay for the printing and mailing expense incurred to date. Personal sacrifices in time and money are needed and it is coming from a number of sources.

Many excellent objectives have been set forth. NSA will work on national, regional, state, and local levels to upgrade the industry. Serious investigation into insurance premiums is required because many CAs feel they are subject to a disadvantageous rate structure. Contact with Washington is to be established so industry interests can be voiced on legislative proposals coming from federal agencies. Suppliers are to be encouraged to develop and research more effective pesticides better suited to outdoor spraymen uses. An educational program on legislation, new chemicals and equipment, use recommendations and restrictions, etc. is another aim.

All these objectives take time to put into realization. Progress moves slowly, but deliberately. It is hoped that to-be-expected variations in approach and timing will be resolved through steadfast determination. Outcome will be the realization of a better, stronger contract applicator industry.

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

Questions Neologism

Have just read your fine August issue and want to write at once to commend you on your editorial "Probing the Antipesticide's Mind." We, too, applaud the responsible attitude which Shell has adopted and hope that it will spread. The article on the use of Bidrin was both informative and well written and will be of much use to us in our own application of Bidrin, which has been without benefit of training.

There is one flaw, however, in the article which I am sure you noticed and refrained from editing out either because the author was a guest writer or because you did not want to intrude. It's something that bothers me a whole lot, though . . . the increasing use of neologisms in our scientific and semi-scientific literature. In this case, it's the use of the word "applicator" when he meant "applier." Inasmuch as he was also talking about true applicators . . . the injectors of the Bidrin, and a word which could have meant either man or instrument . . . he'd have saved himself a certain smudginess.

This particular neologism is being seen with increasing frequency and I, for one, would like it nipped now! But it is otherwise a fine article and I'm sure most readers couldn't care less about neologisms!

Austin Morrill, Jr.

Applied Biologist
Bureau of Yards & Docks
U. S. Navy, San Bruno, Calif.

Webster defines "applicator" as "an applier; specifically, any device for applying medicine to the nose, throat, or other cavity." "Applier" is "one who or that which applies." Thus, an "applicator" is not a "him" at all; it's an "it." While we agree there often is misuse of the language, if we now nip the nasty knave who negotiated this neologism, Contract Applicators (CAs) would have to be referred to as Contract Appliers, and that just doesn't seem right! We'll continue to call appliers "applica-

tors" and applicators "appliers" and show pictures of people and things so that everyone may understand what is being written. Editor.

Paraquat Misrepresented

I would like to clear the air on a point raised by the editor regarding Paraquat, when commenting on a letter by D. J. Miller featured in your WTT Mailbox of August 1965.

Paraquat at the time of writing (August 25, 1965) is registered for a single use. That use is "Seedbed Preparation for Establishing Grasses for Seed Production." Paraquat is used to control grasses and broad-leaved weeds in such seedbeds. We have no registration for use on southern dormant turf at this time. We were selling limited quantities of Paraquat for use on cotton and potatoes in 1965 only under a temporary tolerance granted to us by the USDA.

However, it can be stated that further Paraquat registrations are pending in Washington, D. C. Certainly we agree with Mr. Miller's comment on Paraquat's safety and look forward to that day when it can be legally used by commercial applicators.

John W. Mackenzie

Technical Specialist, Herbicides
Chevron Chemical Co.
Richmond, Calif.

Sources for Tensiometers

As a subscriber to your magazine we read with interest an interesting article in your issue for July 1965. This article on page 25 refers to the use of a Tensiometer, and its reduction in water costs. Would you be good enough to advise us the manufacturer of this Tensiometer as we would like to discuss purchase of the instrument.

M. D. Gibbeson

General Manager,
Flick Chemical Industries Pty, Ltd.
Chatswood, N.S.W., Australia

Tensiometers are manufactured by the Irrrometer Company, P. O. Box 2424, Riverside, Calif.

and also the Zymak Co., 832 North Atlantic, Long Beach, Calif.—Ed.

Won't Cut Up WTT

Enclosed is my check for \$1.00 for one copy of your reprint "Aquatic Weed Control."

I did not want to cut the articles on the reverse side in the three issues it ran in, so I'm ordering your reprint which includes all three parts.

I might also say I enjoy this publication very much. It is a regular part of my reference reading.

Thanks, again, and best wishes for continuous growth.

James C. Scott

Superintendent
Lake Havaso City Golf Course
Lake Havaso City, Arizona

Arborists Appreciate Coverage

I want to thank you for the fine writeup given in your September issue of the International Shade Tree Conference in Washington this past August. You covered most of the sessions and have given the high spots of our largest conference to date.

Paul E. Tilford

Executive Secretary
National Arborist Association, Inc.
Wooster, Ohio

Wants More Turf Articles

Congratulations on the very splendid article on thatch control in your October issue. Dr. Miller covered this subject most thoroughly—hope you have more such articles on turf care.

Reg Perry

Secretary
Southern Turfgrass Association
Memphis, Tenn.

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.

Effect of

Phenoxy

Herbicides

on Riparian

Vegetation and
Water Quality

By
W. E. SOPPER,
I. C. REIGNER, and
R. R. JOHNSON¹

CHEMICAL CONTROL of vegetation along streambanks and reservoir shores has become an acceptable procedure on many municipal watersheds. Such vegetation has long been undesirable because in addition to the use of large quantities of water its leaves often accumulate in the stream channels and reservoirs. As a result they may clog intake screens and impart acids and color to the water by their decomposition.

The phenoxy herbicides, such as 2,4-D and 2,4,5-T, although widely used in forest management have not been used on municipal watersheds because of possible contamination of the water supply. Phenols when chlorinated form chlorophenols which are said to have very low odor and taste thresholds and may be detected in concentrations as low as 0.3 parts per billion (ppb). The U.S. Public Health Service has recom-

mended a limit of one part per billion (1 ppb) of phenol for drinking water. This recommendation is based upon taste and odor considerations and not toxicological limits.

Although considerable literature is available concerning the taste and odor thresholds of chlorophenols, little factual information is available concerning the contaminating effects of the use of phenoxy herbicides on municipal watersheds.

Therefore, the School of Forestry, The Pennsylvania State University, along with the Northeastern Forest Experiment Station and Amchem Products, Inc., conducted a cooperative study to determine the extent of streamflow contamination following the spraying of riparian vegetation with phenoxy herbicides.

The experiments were carried

out on two small headwater streams of the Newark, New Jersey, watershed and two similar streams on the Stone Valley Experimental Forest in Huntingdon County, Pennsylvania.

A portable mistblower was used to spray riparian vegetation growing within 20 feet of each stream bank for a distance of 1000 feet. Thus, each plot was approximately an acre in size. The operator walked in the middle of the stream, spraying on one side only (Figure 1). Vegetation on the other side was sprayed on returning in the other direction. No extra precautions were taken and, hence, some spray settled directly on the water in the stream channel.

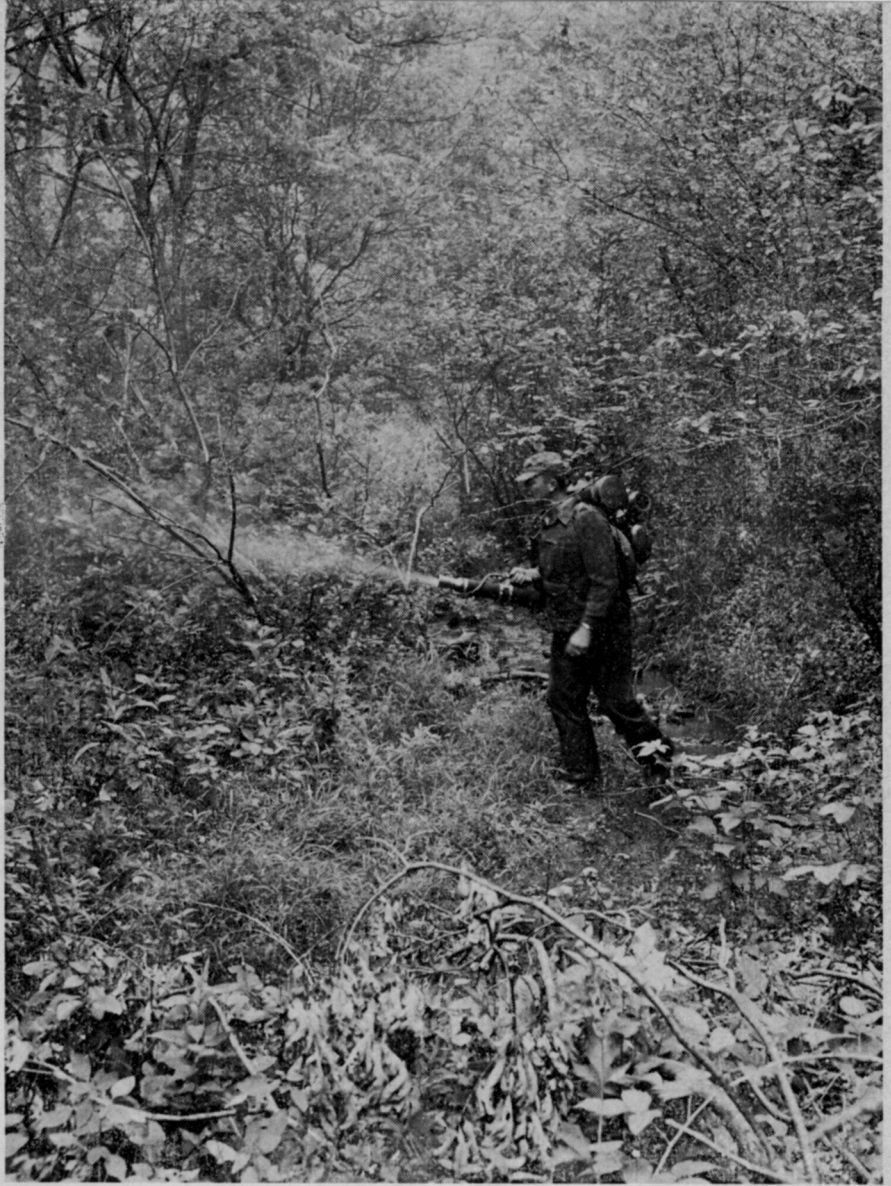
Two chemicals were tested. One, an ester of 2,4,5-T, was considered a representative formulation of the commercially available herbicides. The other was

Table 1. Formulations and amounts of herbicides applied to test plots.

Herbicide	Amount	Oil Carrier	Water Carrier
	gallons	gallons	gallons
2,4,5-T butoxy ethanol ester	0.5 (2 lbs. ae)	1	8.5
2,4,5-T emulsifiable acid	1.0 (2 lbs. ae)	0	9

¹ Respectively, Assistant Professor of Forestry, The Pennsylvania State University, University Park, Pa.; Associate Hydrologist, Northeastern Forest Experiment Station, Upper Darby, Pa.; Forester, Amchem Products, Inc., Minneapolis, Minnesota.

Fig. 1. A portable mistblower was used to apply herbicides to riparian vegetation. (Mr. R. R. Johnson is operator.) Note low streamflow. This is the Pennsylvania stream being sprayed with the 2,4,5-T emulsifiable-acid formulation.



2,4,5-T in the form of an emulsifiable acid. Formulations and amounts applied to the test plots are shown in Table 1.

Herbicides were applied to all streams by the same operator. Since we were interested in detecting maximum contamination, the herbicides were applied during a low streamflow period. Flow in all streams was less than 0.1 cubic foot per second (45 gpm).

Water samples were taken periodically after treatment at various locations up and down stream. The first samples were collected immediately after spraying followed by a second group of samples 4 hours later. Thereafter, samples were collected daily during the first week and twice a week during the next 3 weeks. Additional samples

were collected after each rain-storm.

Streamflow samples collected

were tested for contamination by a calibrated three-member odor panel (Figure 2). The testing procedure used was that approved by the American Society for Testing and Materials. Results of the panel tests are shown in Table 2.

Results indicate that during the three weeks following treatment contamination of streamflow occurred only immediately after spraying and after the first large storm. In addition, contamination was detectable only within the treated reach of stream and no contamination was ever found in a downstream sample. Downstream samples were collected approximately one mile away from the treated areas and in both locations below the junction of the two treated streams.

All areas were examined one year after treatment to deter-

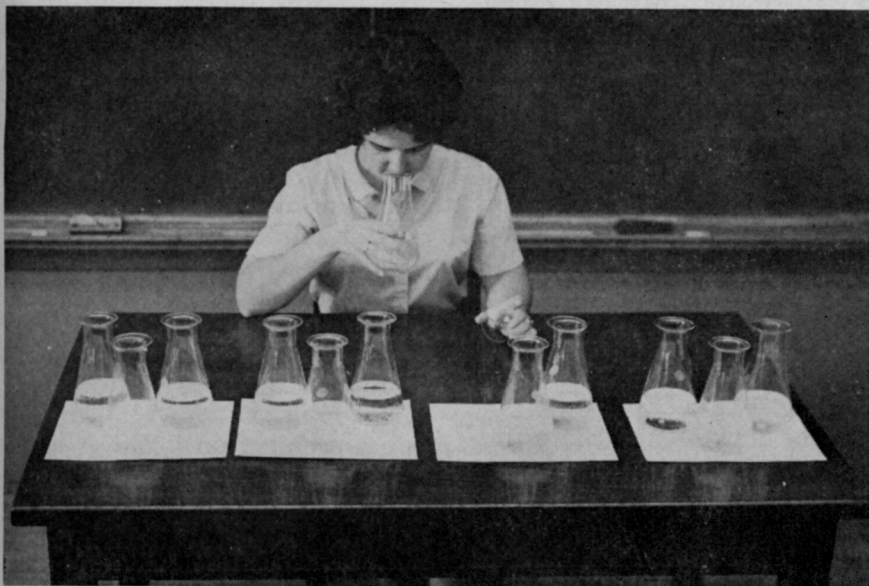


Fig. 2. Streamflow samples were tested for herbicide contamination by odor panel. Panelist is Mrs. Linda Summers.



Fig. 3. A tally of vegetation kill was made one year following treatment. Seventy to eighty percent of the stems were completely killed by the ester formulation. Note invasion by grasses and herbaceous vegetation. This is Pennsylvania stream treated with the 2,4,5-T ester formulation.

mine the effect of the herbicides on the riparian vegetation (Figure 3). Streamside vegetation was very brushy. The number of stems under 4 inches in diameter breast high ranged from 5,600 to 11,520 per acre. Results indicate that the ester formulation had completely killed 70 to 81% of the stems and the emulsifiable acid killed 58 to 78%. In addition, from 17 to 32% of the remaining stems were partially killed. A subse-

quent treatment in 3 to 5 years should eliminate the remaining stems. New streambank vegetation consists primarily of grasses and herbaceous species and should eventually predominate.

On the basis of this study it appears that phenoxy herbicides can be used to control riparian vegetation on municipal watersheds, if properly applied with the normal precautions, without constituting a water pollution hazard.

Table 2. Results of streamflow samples collected by panel in Pennsylvania and New Jersey to determine contamination.

Herbicide and Time of Sample	Herbicide Concentration in Penna. Streams	Streamflow Sample N. J. Streams
	ppb	ppb
2,4,5-T ester		
After spraying	40	40
4 hours later	20	20
Next 9 samples	neg.	neg.
After first large storm	10	neg.
2,4,5-T acid		
After spraying	40	20
4 hours later	10	neg.
Next 9 samples	neg.	neg.
After first large storm	20	neg.
Both herbicides		
All downstream samples	neg.	neg.

Mites Can Be Controlled

Mites which attack ornamental shrubs, fruit trees and bermudagrass lawns can be controlled with Tedion or Kelthane, two specific miticides, according to Stanley Coppock, entomologist

with the New Mexico State University Cooperative Extension Service, University Park, N. M. Malathion is also effective although it is not a specific miticide.

Mites vary in size from almost

Dutch Elm Disease Control Should Continue in Winter

Dutch elm disease doesn't attract much attention during the winter, but this is the time to put into effect measures to help keep it from spreading next spring, the National Arborist Assn. recommends. Sanitation and spraying are still the most effective means known to control this fatal disease of elm trees.

The overwintering habits of the tiny bark beetle makes sanitation an entirely practical control measure. Destroy weakened elm wood in which the beetles may live. By eliminating their habitat the beetle population is reduced, thus lessening the chances of the disease being spread.

Destruction of beetle-infested, diseased elm trees is of greatest importance; no elm material that can serve as living quarters for the beetles should be neglected. The National Arborist Association warns that diseased elm trees should be felled and the wood destroyed, preferably by burning, well before the spring emergence of the beetles.

Equally important in the disease control program is the application of an insecticidal spray to protect healthy elm trees against the feeding beetles. Spraying should be done annually, either in the fall after leaves have dropped and before freezing weather arrives, or in early spring before the new leaves appear.

microscopic to as big as the head of a pin. The European red mite, two-spotted mite, and McDaniel mite are troublesome on deciduous and fruit trees and shrubs. Red mites, prevalent in early spring and summer, experience a population decrease in early August. Two-spotted mites and McDaniel mites are in greatest number at the end of July and are a problem until fall.

The bermuda mite is specific on bermudagrass. Symptoms are shortening of the plant stems and browning of the vegetation. Diazinon or Kelthane work best on the bermuda mite.

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.....phenyl O-p-nitrophenyl thiophosphate
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pest control possible. And following those directions is the only way to make sure you're getting it. That's why it's so important to read and understand the label before using any chemical product.



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Skyworker was used to apply growth regulator on trees during May in Roanoke, Virginia.

By DR. T. O. EVRARD

Virginia Polytechnic Institute
Blacksburg, Virginia

Chemical Tree Pruning

A promising new control with plant growth inhibitors

PLANT GROWTH inhibitors have been used with beneficial effects by growers of tobacco, potatoes, onions and ornamentals. Now it appears that the custom applicator must become familiar with these chemicals, not only as grass growth retardants, but also more recently as retardants for shade trees.

The cost of annually trimming trees that are growing under power lines in cities is a large factor in electric utility maintenance. Also, in certain areas, opposition to tree trimming has sprung up from homeowners, garden clubs, and municipalities. Studies to find a way to reduce the amount of trimming required were initiated in the spring of 1964. The objectives of these studies were:

1. To maintain shade and ornamental trees in a more uniform, natural, characteristic shape over a longer period of time with a minimum of manual trimming.

Plant growth inhibitors are now being investigated as chemical pruners. The results contained in this article are from one year's experiments with this promising new application, Dr. Evrard points out, from his work with MH-30T and B-995-W50.

2. To reduce the number of cuts and open wounds caused by today's tree trimming practices. (These cuts are frequently left unpainted and may result in disease and insect invasion, a basis for much public resentment.)

3. To reduce cost of utility maintenance.

In the fall of 1963 a meeting was held at which representatives of the Appalachian Power Co., the Bartlett Tree Expert Co., the U. S. Rubber Co., and Virginia Polytechnic Institute were present. It was agreed in this conference that a cooperative project would be set up to test the effects of certain growth inhibitors on large city shade

trees which were trimmed for utility line clearance.

Officials of the city of Roanoke were contacted, the program explained, and permission obtained to initiate the experiment.

Two Chemicals Chosen

Two chemicals, MH-30T and B995, were selected for this study because of their previous history and usage on other plants. Areas were selected that contained problem tree species. The major species in the area were American and Chinese elms, sycamore, linden, tulip poplar, and silver and Norway maples. Certain trees were trimmed in the fall and winter and sprayed May 11; other trees were trimmed May

26 and treated June 18. All chemicals were applied to foliage run-off using a hand boom attached to a pressurized spray tank (40 psi) which was mounted on a Skyworker.

The length of new growth was measured and recorded on November 12 and is reported in Table 1. From the table it can be seen that new growth on American and Chinese elms, Norway and silver maples, and linden trees was markedly reduced. Other workers report similar retardation on sycamore trees, but in these trials sycamores showed only moderate indication of chemical inhibition. The spraying of these trees was suspended because of rain, however, and it is believed that some of the chemical was washed off the foliage, which reduced its effectiveness.

The growth of tulip poplars did not appear to be inhibited by the chemicals at the rates used. No rain fell on these trees for at least 24 hours after treatment. The "tulips" were in full bloom at the time of application, and no phytotoxic effects were noted.

Other growth retardants in addition to the two mentioned are being studied in a limited area on a wide variety of species to test for phytotoxicity.

Conclusions drawn from the first year's work are:

1. MH-30T at rates used did retard growth of certain trees under test. B-995-W50 was not generally effective in controlling tree growth and added little to the effectiveness of MH-30T when applied in combination with it.

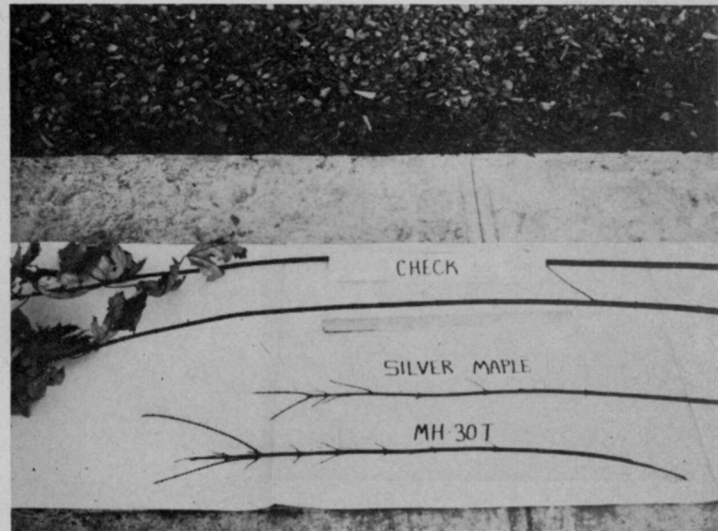
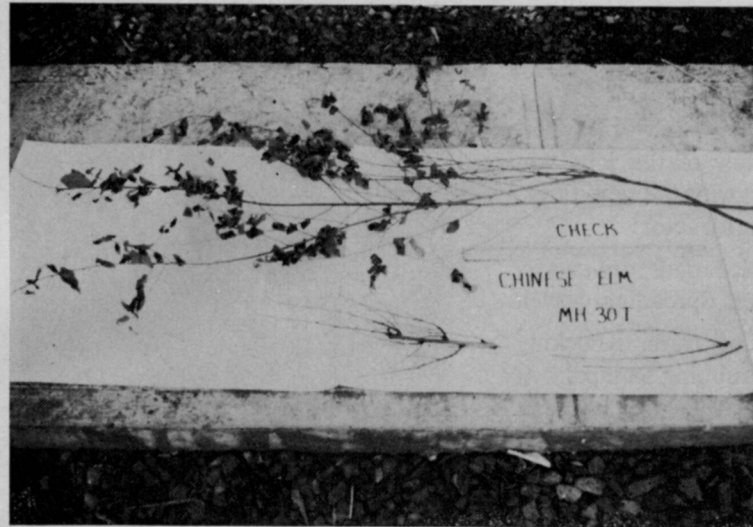
2. Rainfall within a few hours after chemical application reduced the inhibiting effects of the chemicals used.

More important, however, was the fact that a problem existed, and through cooperative research among consumer (utility), supplier (chemical manufacturer), applicator (CA), regulator (city), and university investigator, solutions were sought.

In the city of Roanoke 150 large shade trees were treated

with no adverse public sentiment expressed at the time of application or during the growing season. In fact, most people who inquired about the operation wished the program success. Plans for the second year in-

clude re-treatment of trees sprayed during the first year, general expansion of the program and comparison of application techniques. The last phase will include another cooperator, the equipment manufacturer.



Results with MH-30T on Chinese Elm (above), and Silver Maple (right).

Table 1. Average length in inches of new growth. Ten measurements per tree; at least three trees per treatment; trees treated in spring; measurements taken November 12, 1964.

Treatment	Chemical	Concentration	Species						
			Tulip Poplar	Amer. Elm	Chin. Elm	N'way Maple	Sycamore	Linden	Silver Maple
1. MH-30T		10,000 ppm*	39	22	11	15	61	25	25
2. MH-30T+		10,000 ppm+							
	B-995-W50	5,000 ppm*	35	22	14	13	60	21	27
3. MH-30T+		5,000 ppm+							
	B-995-W50	4,000 ppm*	43	15	18	18	72	65	23
4. B-995-W50		5,000 ppm*	39	44	46	20	48	52	37
5. Check			34	72	50	29	84	45	47

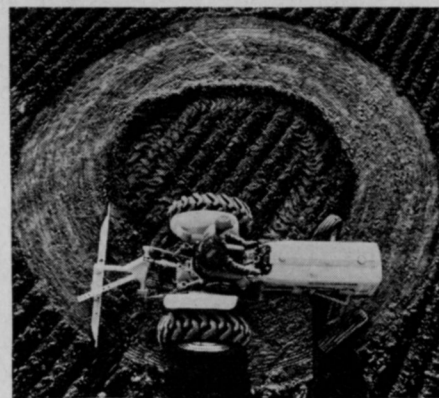
* Sprayed to foliage run-off

International helps take the drudgery out of spring work

Just a partial list of spring chores, but the 2424 will put you on top of them so fast you'll probably want to schedule other projects — the ones you've been putting off for years.

And this is the same tractor which will keep you ahead of your mowing later on. Quite a combination. 47 hp (43.5 diesel) in a low profile tractor that outmaneuvers every other tractor in the compact class.

The tightest turning radius ($8\frac{1}{2}'$). The shortest wheel base (70"). Only 51 inches to the top of the hood. And the only tractor in this class with full-time hydrostatic power steering.



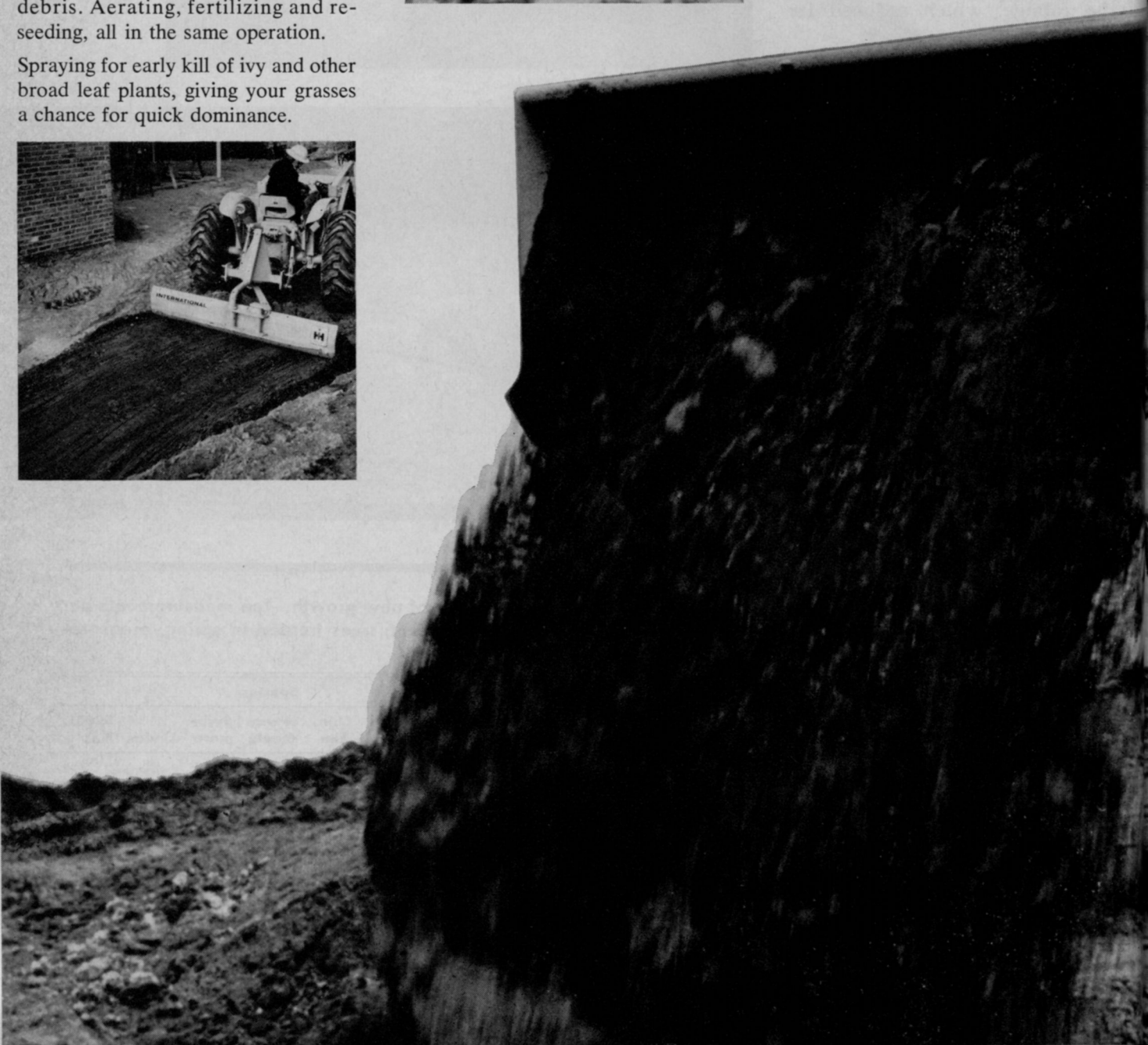
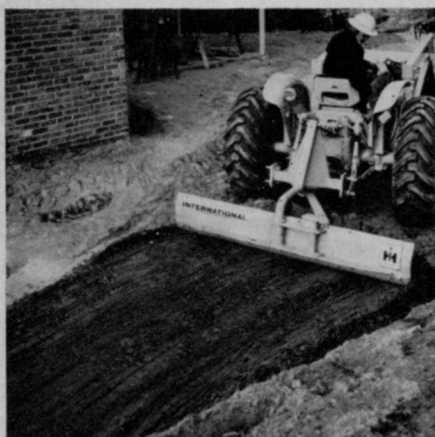
Consider just a few of the jobs you could zip through with the new International® 2424 turf tractor:

Building new service roads, driveways, walks and terraces. Spreading gravel.

Planting or moving trees. Knocking out dead trees. Grubbing stumps.

Raking thatch, matted leaves, other debris. Aerating, fertilizing and re-seeding, all in the same operation.

Spraying for early kill of ivy and other broad leaf plants, giving your grasses a chance for quick dominance.

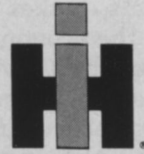


A differential lock that feeds power to both rear wheels regardless of traction. No spin-out. No gouging of turf even when you start up from a dead stop on an up-slope. On side hills it holds the nose straight, prevents down-drifting.



Dual range transmission with 8 forward and 2 reverse speeds (8 and 8 optional for loader work). Live, constant running power take-off. Draft-sensing 3-point hitch. Live hydraulics. Wide, high-flotation tires. And more.

You'll just have to get the rest of the story from your IH dealer. Maybe a demonstration? And he'll be glad to talk several different methods of financing. One, two or three years to pay. Deferred payments—up to three a year with no extra charge. Leasing. Leasing with a purchase option. Or you suggest something. He wants to make a deal!



INTERNATIONAL HARVESTER COMPANY

The people who bring you the machines that work



New **METER-MISER** is ...

LOOKING somewhat like a lawn mower, the new "Meter-Miser," being introduced by Amchem Products, makes it possible to combine the economy of using liquid chemicals with the safety of accurate drift-free application. Instead of cutting blades, however, the new mechanism controls vegetation through the use of a special applicator disc and chemical herbicides.

The new chemical applicator also eliminates complex metering and calibration, Amchem reports. Formulas recommended for use in the device are adjusted to the machine's tank capacity. For example, one can half fill the tank with water, add one gallon of Liquid Amizine Meter-Miser formula, finish filling the tank and spray. One five-gallon tankful of spray mixture is said to be enough to cover 4,840 square feet; nine gallons will control vegetation on an acre of land.

In operation, the new applicator puts down a standard 36-inch swath of the premeasured liquid formulas at a constant rate; the spray pattern is such that no area larger than a dime is left uncovered.

Additional attributes of the machine are that, being highly mobile, there is no need to drag supply hoses or carry heavy spray equipment. Lightweight, compact and inexpensive, it can be used by industrial, utility, institutional and other maintenance supervisors.

Specifications

Special appeal of the Meter-Miser to applicators is revealed in a listing of its specifications.



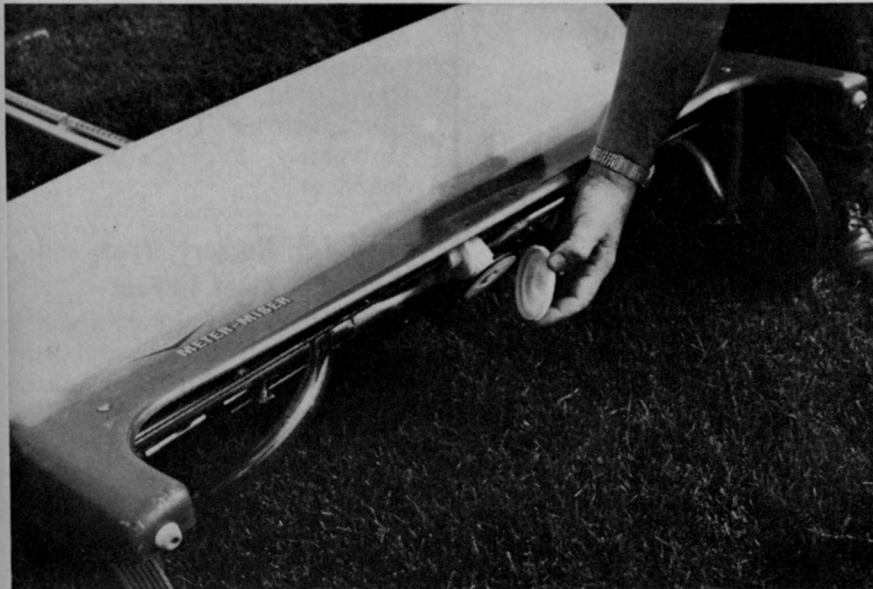
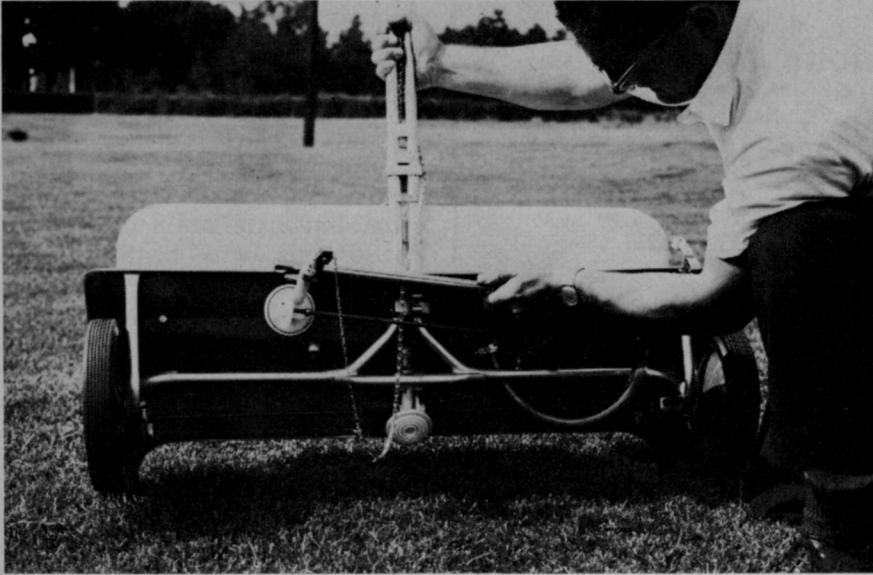
... Driftless Grounds Applicator

All parts that come into contact with chemical solutions and mixtures are made of corrosionproof plastics. The ruggedly built device weighs 30 lbs. empty; overall length is 54 inches with a handle 41½ inches long. Gravity flow supplies its centrifugally operated spray discs. Instant on-off control is actuated by the spring-loaded chain located on plated steel handles. Outside diameter of its rubber wheels is 10 inches. Outside width of the cowl is 41½ inches and its tank capacity is slightly more than

5 gallons. Because its spray-disc dispenser is so close to the ground, there is no chance of chemical drift. And, it's claimed, an operator can walk fast or slow without affecting the rate of application.

A limited number of demonstrator models now being tested by custom applicators show that the device will fill a need for use on smaller spraying assignments, especially over smooth terrain. This would include areas such as roadways, parking areas, and utility substations.

To double the output of Meter Miser, extendable arm mount is removed from storage space underneath hood and mounted on right wheel. The new extension allows operator to spray a 72-inch swath of chemical. Pattern is such that no area as large as a dime is reportedly left uncovered.



Non-corrosive plastic disc spinning under the hood of the Meter Miser applicator affords accurate dosage and drift-free operation. Design of the applicator disc coupled with the pre-measured liquid formula in the tank eliminates the need to calibrate the new chemical applicator.

User Comments

Luther Scott, grounds maintenance manager at Cedarbrook Country Club, Blue Bell, Pa., comments on the hooded construction of the Meter-Miser, noting that "... it allows me to get in close to ornamental shrubs without fear of drift. I use it to spray around the golf tees, greens and sand traps. Since it leaves wheel marks on the turf, I can see where I've been and don't have to be afraid of overdosing any particular section of our turf."

The machine is also being used on grass plots at Penn State. Dr. Joseph Duich also comments on the fact that the wheel marks left by the machine prevent overdosing with chemicals, but he offers the following caution. "If you're going to mix chemicals in the tank," Duich says, "be sure to add water first, then the chemical, then the remainder of the water. This prevents a concentration from building up at the outlet valve which could be harmful when the machine is started." Duich also has used

the Meter-Miser on his own lawn, filling it with DDT and Sevin for control of mosquitoes and lawn insects.

Stauffer's Lawn & Garden Center at Lititz, Pa., has advertised the Meter-Miser on a rental basis: \$.25 per hour (two hour minimum) and recommends mixing broadleaf weedkiller with liquid nitrogen for fast "green-up" on lawns. Other claims he makes in his advertising circular are that the Meter-Miser can be used "... at any time of day ... 31¢ will kill over 50 kinds of weeds on 1,000 square feet of lawn ... 10 minutes time will cover 5,000 square feet ... no guesswork ... feed and weed, apply fertilizer at the same time ..."

Ken Snyder, of Snyder's Tree Service, Martinsburg, Pa., says he has used the Amizine and Weedone Super D formulas for vegetation control and especially likes the machine's ability to "... get in around shrubs without hurting them."

Improved Model

A new feature of the Meter-Miser for 1966 will include a special 18-inch applicator disc attachment, mounted to the side of the present model. Besides doubling output capacity of the machine, the attachment is said to be ideal for use along fence-lines as it sprays through to the opposite side of the fence. Operating in tandem the two discs spray a 72-inch swath of chemical formula in a single pass.

The Meter-Miser is an outgrowth of Amchem's research into finding better, more effective and safer ways to apply industrial chemicals. The company's latest development in this area resulted in the introduction of the "Spray-Disc" applicator, a centrifugally operated system for metering and applying invert-emulsion herbicides. Mounted on a helicopter, the device allows the pilot-applicator to apply these heavy drift-free adhesive-type herbicides with near-pinpoint accuracy.

How to Calculate

Pounds or Gallons of Aquatic Herbicides from Water Surface Acreage

Determining the amount of aquatic herbicide needed for weed control in pools (ponds, lakes) often is a troublesome and wasteful task if dosages are not calculated correctly. Incorrect application rates can mean too much or not enough herbicide may be used, and either poor control or an uneconomical treatment will result.

When recommendations on the label, or from agricultural stations, are given in gallons or pounds of toxicant per surface acre, the only measure needed to calculate a *correct* dosage is the surface area of the pool.

Gallons of concentrate needed for treatment of a surface acre may be calculated as follows.

Formula:

$$\frac{\text{Recommended lbs. of toxicant per acre (A)}}{\text{Lbs. of toxicant per gal. of conc. (B)}} =$$

$$\text{Gallons of concentrate needed for each acre (C).}$$

Example:

(A) = 10 lbs. of toxicant desired for each acre, according to approved recommendations.

(B) = 8 lbs. of toxicant per gallon of concentrate in the aquatic herbicide you are using.

(C) = $\frac{10}{8} = 1.25$ gallons of concentrate needed for each acre.

If a pool surface is 30 acres, 37.5 gallons of concentrate will be needed ($1.25 \times 30 = 37.5$ gallons). Water may be added to the concentrate to facilitate adequate coverage during application.

Pounds of granules to apply for each acre, when recommendations are expressed in pounds of toxicant per surface acre, are calculated as follows. The actual percent of toxicant in the granules is given, by weight, on the label.

Formula:

$$\frac{\text{Recommended lbs. of toxicant per acre (X)}}{\text{Percent toxicant in granules (Y)}} =$$

$$\text{Pounds of granules needed for each acre (Z).}$$

Example:

(X) = 30 lbs. of toxicant desired for each acre according to approved recommendations.

(Y) = Granules are 15% toxicant, or .15 lb. toxicant per lb. of granules, as stated on the label.

(Z) = $\frac{30}{.15} = 200$ lbs. of granules needed for each acre.

If pool surface is 10 acres, then 2000 lbs. of granules will be needed. $200 \times 10 = 2000$.

Granules are usually distributed by the broadcast method, but may be applied in a slurry of water.

Mountain Men Meet Jan. 26-27 For 12th Regional Conference

A thorough exploration of the booming sod industry is on the agenda for the 12th Annual Rocky Mountain Turfgrass Conference at Colorado State University, Fort Collins, Jan. 26-27. Attention will be focused on the industry's production, marketing, and installation problems.

Sessions will begin with a weed identification contest to refresh delegates on weed types.

Talks by P. Eugene Heikes, extension weed specialist, J. W. May, and H. M. Hepworth, of the CSU laboratory, will reveal the newest test results in soil preparation, weed control, turf establishment, and maintenance.

Turf diseases and their relation to weed problems will be explained by Dr. Jack Altman, associate plant pathologist.

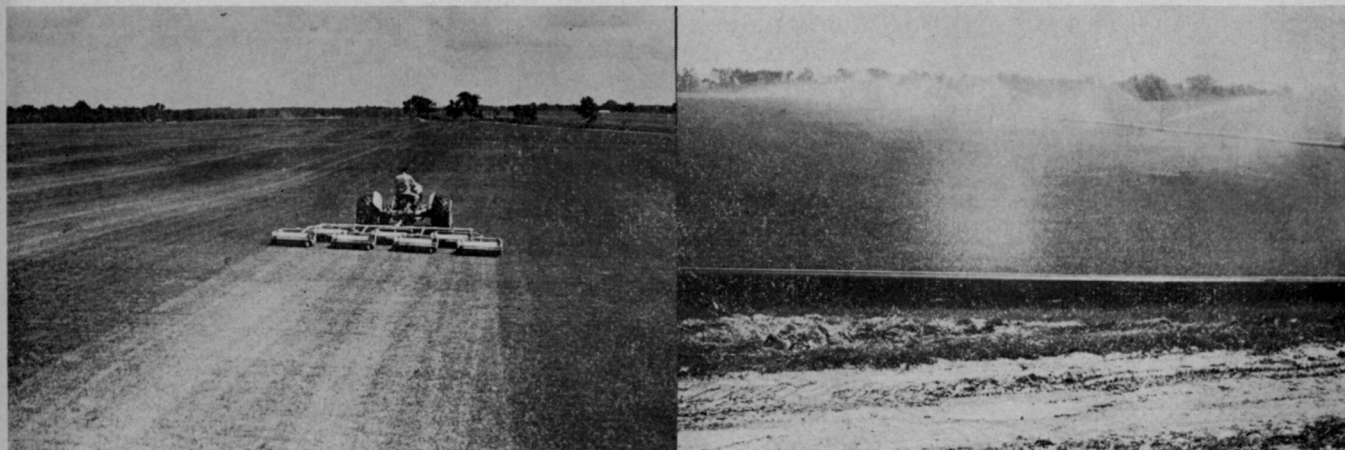
For more details write Prof. Charles M. Drage, Extension Horticulturist, Colorado State University, Fort Collins, Colo. 80521.

U. of Cal. Nursery, Tree, and Turf Men Meet In Feb.

An outline of the program to be presented to nursery, landscape tree, and turf men Feb. 23-25 at the University of California, Davis, indicates a diversified and educational program designed for all segments of the ornamental production industry.

Of special interest will be, "Problems Associated with Low Application Rate Sprinkler Systems and Specialized Turf." Also included are talks on, "Select Your Turfgrass Variety to Meet Your Specified Needs," and "Trees are an Integral Part of California's Highway Beautification Program." In another segment experts are to cover reduction of tree maintenance costs, land use and management as it affects the nursery industry, and a new concept titled "System Engineering Your Nursery Production."

Several outstanding speakers have been engaged for this three-day meeting. Further details will be provided in WTT next month.



"Cultivated" sod on Maryland farms is usually ready to harvest in 12 to 18 months after being fertilized and irrigated and mowed at 2 to 3".

Sod Industry—Big Business In Maryland

By ELWYN E. DEAL

Turf Specialist, Department of Agronomy, University of Maryland, College Park

Sod production and handling is one of the fastest growing industries in Maryland, certainly among agricultural commodities. According to a survey conducted by the Agronomy Department, in cooperation with the county extension agents, some 7,000 acres of sod valued at \$2 million were sold during 1962-63. Recent estimates show that figures for 1964-65 will be about twice that amount.

In the Baltimore and Washington, D. C., metropolitan areas, sod, rather than seed, is being used to establish new lawns around most of the buildings, housing developments, schools, and even private homes. With the tremendous building boom going on in these cities and in adjacent counties, a lot more sod will be needed in the future. Athletic fields, roadsides, parks, cemeteries, and golf courses also use large amounts of sod.

Maryland, located in the transition zone between areas where warm- and cool-season grasses are best adapted, has many types of grasses available. Several bermudagrass and zoysia varieties as well as bluegrasses, fes-

cues, and bentgrasses can be grown. Most of the sod currently used is Kentucky bluegrass or a mixture of bluegrass and red fescue.

4 Kinds of Sod Now Grown

Four general types of sod are being used in turf establishment. There are: cultivated sod, semi-cultivated sod, improved pasture sod, and unimproved pasture sod. Cultivated bluegrass sod is seeded and carefully managed specifically for turf use. Bluegrass or bluegrass-fescue mixtures are seeded at 50 to 75 pounds of seed per acre on a well prepared seedbed. The grass is fertilized, mowed at 2 to 3 inches, and usually irrigated. Sod is ready for cutting in about 18 to 24 months.

Semicultivated sod is often seeded at 25 to 50 pounds of seed per acre on a poorly prepared seedbed, is mowed occasionally at 3 to 4 inches, and not irrigated. It may be used for grazing during one or two seasons and requires 24 to 36 months to become well enough established for cutting.

Improved bluegrass pasture

sod comes from pastures which were used several years for grazing or hay, then the cattle removed for about one year before harvesting sod. During that year the grass is fertilized and mowed at 3 to 4 inches to produce a thicker sod.

The unimproved pasture sod, just as the name implies, is harvested immediately after the cattle are removed. No effort is made to improve the quality of the grass. Such sod is frequently used on slopes, fills or in ditches where cover is needed very quickly and quality is not too important.

Quality Specifications Needed

Unfortunately, specifications are not always set up for purity and quality of sod used around many buildings and in housing developments. Building contractors responsible for the lawn are often more interested in cost rather than quality of the grass. As a result much uncultivated sod from worn out pastures has been used in the past. Weeds, clover, and pasture-type grasses have been brought into the lawn and the homeowner or building



Properly watered and managed after being transplanted, bluegrass sod will continue to grow after installation.

superintendent has to contend with them later. Recently, however, with more high quality sod available at lower prices, and with increasing public demand for better sod, conditions have improved.

Sod prices in Maryland range from about 6 cents per square yard for semicultivated bluegrass sod uncut in the field to \$12 per yard for some of the new bermudagrass varieties. The average price for high quality common Kentucky and Merion bluegrass cultivated sod is 40 to 55 cents per yard, cut, and delivered to the buyer. Meyer zoysia, the most popular warm-season grass in the state, usually sells for \$1.50 to \$2.50 per yard or 5 to 10 cents per 2-inch plug.

Other popular grasses available in Maryland include Tufcote, U-3, and Tifgreen bermudagrasses; Emerald and Midwest zoysias; Penncross bentgrass sod, and Arlington and Congressional bentgrass stolons.

Because of the tremendous increase in popularity of sod, many farmers and other land owners are converting farm acreage to sod production. Numerous requests for information on sod management are received at the University of Maryland each month. Among the list of "other land owners" are businessmen, military personnel, doctors, and others who have retired to the "country." They view this as an opportunity to conserve soil and water and at the same time receive a profit from their land.

Several growers in Maryland

now have as much as 2000 or more acres of land in cultivated sod. They use different planting dates so that sod is ready to harvest at various times rather than all at one time. New growers usually start with a small acreage and gradually build up the size of their operation.

Mechanized Sod Cutting Preferred

Presently most of the sod is cut with the usual self-propelled sod cutter. Then it is rolled and loaded on trucks by hand. Much of the hand labor will probably be eliminated in the near future with the development of machines to cut and roll or fold the sod in a single operation. Sod cut in short lengths can be folded and placed on pallets for loading and unloading with a forklift, thus increasing the speed of operation and reducing expenses.

One zoysia grower in Maryland has developed a highly mechanized system for cutting and packaging Meyer zoysia plugs. A self-propelled plugger cuts several rows of 2-inch plugs at a time and loads them into boxes. The boxes are hauled to a packaging shed where each plug is carefully examined for purity, uniformity and quality before being packaged for sale in retail stores in the area.

Most of the sod in the state is produced by reputable growers. However, there are some sod contractors who still buy poor sod very cheap, usually old pastures, and do a poor job of installing the sod. A strong organization of qualified sod growers and contractors is badly needed to help combat this situation. Much could be accomplished if a unified effort is made to discourage this type of operation. An attempt is now being made to form such an organization.

Because of the long period of time now required to produce marketable bluegrass sod—often 18 to 36 months—the Agronomy Department at the University of Maryland has recently started a research project to find ways of reducing the time to 12 to 18 months or less if possible. For producers who market sod as



Rolls of top-quality Merion bluegrass sod, one square yard each, ready for installation at a new construction site.

their major source of income, time is a very important factor.

Construction Boom Sod Boom

With the construction boom expected to continue in and around Maryland, the sod market is expected to grow at a very rapid rate. High quality sod of adapted grass varieties is certain to be in great demand as consumers are better educated about the value of using good sod rather than poor quality cheap sod.

V-C Chemical Grows in Texas

Expansion of a fertilizer marketing program into southern Texas is announced by V-C Chemical Co., the agricultural chemicals division of Mobil Chemical Co.

V-C president Charles T. Harding says the company will market nitrogen as well as other fertilizer materials and agricultural chemicals from its Lubbock and Pecos headquarters. Stafford L. Beaubouef, formerly with John Deere Chemical Co., will direct operations. Distribution points are established from McAllen in the east to Fabens in the west.

Rutgers Renames Ag College

Known for more than a century as the College of Agriculture, this Rutgers University (New Brunswick, N.J.) school has been renamed the College of Agriculture and Environmental Sciences.



This Kansas City, Mo., convention center plaza awaits delegates to the 37th International Turfgrass Conference and Show, Feb. 13-18. Sponsored by the Golf Course Supts. Assn. of America, conference will be held in huge municipal auditorium at right. Headquarters for the turf show will be in the Muehlebach Hotel at left. Huge garage is under plaza.

3,000 Expected to Attend 37th International Turfgrass Conference and Show, Feb. 13-18

Establishment of a new attendance record is anticipated when an estimated 3,000 or more delegates from the United States and many parts of the world attend the 37th Annual Turfgrass Conference and Show, Feb. 13-18, at the municipal auditorium, Kansas City, Mo. It is sponsored by the Golf Course Superintendents Assn. of America.

GCSAA officials base their predictions on previous experience and on the heavy advance registrations by exhibitors. To date, exhibit space reservations are said to be already 30% above last year's figure for the show when 2600 registrants met in Cleveland, Ohio.

Kansas City's huge municipal auditorium will be the scene of the 1966 exhibit. Headquarters for the conference will be established in the Muehlebach Hotel. Five other hotels and motor inns in the downtown area also have been reserved to house delegates to the conference.

Nearly 50 speakers and panelists will appear on the program which begins on the morning of the 14th and concludes on the 18th. Committees have also programmed several social affairs. A full program of entertainment, sightseeing and shopping tours has been arranged for women. The GCSAA's get-acquainted party will be held on the evening

of the 14th and the annual banquet and show is set for Feb. 17.

The Heart of America GCSAA Chapter is host for the conference. Advance reservations should be made through the GCSAA office, 3158 Des Plaines Ave., Des Plaines, Ill. 60018. Hotel reservations, however, should be sent to the GCSAA Housing Bureau, c/o Kansas City Convention & Visitors Bureau, 1030 Baltimore, Kansas City, Mo. 64105.

Rutgers Conducts 10-Week Turf Course

A special turf course for workmen who want to learn the finer points of turf development and care had its first class Jan. 4 at Rutgers' College of Agriculture and Environmental Science, New Brunswick, N.J. It will continue for 10 weeks.

According to Dr. Westervelt Griffin, assistant dean of the college, many men participating in this program aim to become golf course foremen or superintendents, estate managers, or supervisors of industrial, military or roadside grounds.

This year's series is the first term of a two-year educational program. It covers turfgrasses, weed identification, turfgrass machinery, business writing, insect pests and their control, soils,

and diseases of turfgrasses and ornamentals. Next year's emphasis will be on the more advanced aspects of these subjects.

Davis Named Exec. Secy. As Arborists Move to Washington

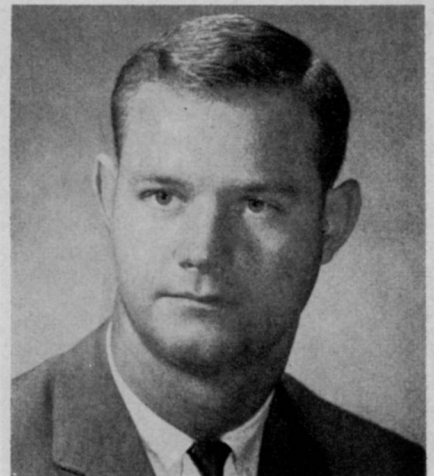
Naming of a new executive secretary and establishment of a national headquarters in the nation's capital was announced recently by Edwin F. Irish, President of the National Arborist Assn., Inc.

Named executive secretary is Clarke W. Davis, of Tampa, Fla., who assumed his new post in the Washington, D. C. headquarters Jan. 1. Davis was formerly administrative assistant to James F. Griffin, executive secretary of the Florida Nurserymen and Growers Assn.

According to President Irish, naming of the new executive secretary and establishment of the new headquarters marks the beginning of a new era in which emphasis on greater publicity and improved public relations for the association and the tree-care industry will be maintained.

Dr. Paul E. Tilford, who has been executive secretary since 1942, has retired. He will, however, continue to serve the association in a technical counseling capacity. Dr. Tilford continues as editor of the International Shade Tree Conference.

Address of the new National Arborist Assn. headquarters is: 616 Southern Building, Fifteenth and H Streets, Washington, D. C.



Clarke W. Davis, new NAA Exec. secretary.

Weed Society of America to Attract 800 Specialists at St. Louis Meeting, Feb. 8-11

"The Control of Weeds and Woody Plants in Rights-of-Way and Other Industrial Sites," is one of 12 subjects covered in papers which will be read before the Weed Society of America Annual Meeting in St. Louis, Mo., Feb. 8-11, at the Sheraton-Jefferson Hotel.

Society President Dr. G. F. Warren of Purdue University, Lafayette, Ind., predicts some 800 research and education specialists will attend the four-day meeting, representing chemical companies, public service organizations, public health and regulatory agencies, equipment manufacturers, and others.

A discussion of weed control efforts will take on broader connotation when Dr. A. S. Crafts addresses the assemblage during the annual Society banquet. His subject: "A View of How People Around the World Are Working to Combat Weeds," is based on personal experience and observation while he studied

weed research and control practices during an 18-month worldwide junket.

Dr. W. R. Furtick, of Oregon State University, Corvallis, says that papers and reports will be presented on every phase of weed control, including weed control in agronomic and horticultural crops, pastures and rangelands, and forests.

Weed control in turf and regulatory aspects of weed control are also on the agenda. Not to be overlooked and equally as important to applicators is the comparatively new field of aquatic weed control. Other speakers will cover chemical and mechanical weed control equipment, and the ecological, physiological and edaphic aspects of weed control.

Soil Society Prints Glossary

A 22-page glossary of soil science terms, reprinted from the May-June issue of the Soil Science Society of America Pro-

ceedings, is available to WTT readers.

Containing about 850 definitions commonly used in many soil science endeavors, it was prepared by the SSSA Committee on Terminology, and is a revision of its popular 1962 edition.

The glossary is priced at 25 cents per single copy. In lots of 10 or more, cost is 20 cents per copy. Orders may be placed with the SSSA central office, 677 South Segoe Rd., Madison, Wis. 53711.

Southern Turfgrass Conference At Memphis, Feb. 28-March 1

"Better Methods for Better Turf," will be the dominating theme as golf course superintendents, and turfmen meet to form the Southern Turfgrass Conference at the Peabody Hotel, Feb. 28 to March 1, in Memphis, Tenn.

Keynoter for what is anticipated to be the largest registration of turfmen ever to attend this conference will be Dr. William Daniel of Purdue University. Also scheduled to speak before this assembly are Dr. O. J. Noer, Dr. Lloyd Callahan, S. A. Frederiksen, James Homes, James Latham, Dr. Coleman Ward, and W. R. Thompson, Jr.

Also included will be a showroom displaying equipment and materials of import to the greensman, and others of the turfgrass industry.

Smith-Douglass Introduces "Golf Green" Turf Products

A new "Golf Green" line of turf products is now available from Smith-Douglass Div. of the Borden Chemical Co., according to J. R. Stiffler, manager of turf and garden products.

Turf foods in the group are named Golf Green Turf Food, Golf Green Weed and Feed, and Golf Green Crabgrass and Insect Control, and will be sold by Smith-Douglass Nutro dealers throughout the country.

Golf Green Turf Food is said to be a high-analysis, lightweight turf nutrient with three types of nitrogen to promote good growth



SPRAY IT SAFE . . .

Specify PRATT products to give your trees the level of pest-proofing protection and horticultural health that their value warrants. Arborists and custom sprayers—the professionals who have to be certain of the right results—depend on the complete, premium quality line of safe and sure PRATT dormant and summer oils, emulsifiable concentrates for hydraulic and mist blowers, and oil base concentrates for thermal fog equipment. Send for the circular that tells you why—and how: "PRATT'S SHADE TREE SPRAY BULLETIN." It's free.



B. G. PRATT COMPANY
215 21st Avenue / Paterson, N.J.

chemically combined into homogeneous pellets.

Golf Green Weed & Feed contains 2,4-D and 2,4,5-TP (Silvex) weedkillers to control broadleaf and chickweed type weeds, including dandelion, ragweed, plantain, henbit, common chickweed and others.

Golf Green Crabgrass and Insect Control has the same properties as the other new products plus Dacthal for pre-emergent crabgrass control and Aldrin to kill lawn insects.

More information on the new Golf Green line may be obtained by writing to the Smith-Douglass Turf and Garden Division, P.O. Box 419, Norfolk, Va.

New Herbicides Show Promise For Southern Naiad Control

Researchers with the Plantation Field Laboratory, Ft. Lauderdale, a branch of the Florida Agricultural Experiment Station, say four new herbicides may well provide the means for control of southern naiad, an underwater aquatic weed. The new herbicides are acrolein, endothall, diquat and paraquat.

R. D. Blackburn, assistant agronomist, explained that diquat and paraquat were the "two most promising materials evaluated." In another report, Dr. Lyle W. Weldon, also an assistant agronomist, said, that although endothall and acrolein gave the "most rapid kill" of southern naiad, re-treatment was needed at the end of four months. In comparison, re-treatment after using diquat was not necessary for 18-21 months.

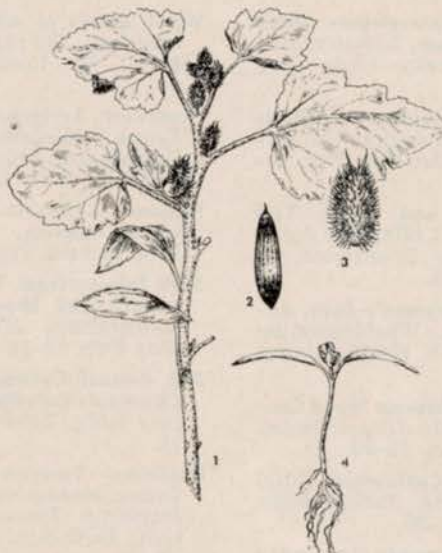
Both men emphasized that diquat and paraquat were the only herbicides that were not toxic to fish.

Measurements of water flow have been made in South Florida irrigation channels showing that southern naiad and other underwater weeds may "reduce water flow as much as 97%." The researchers also said that many canals dug for recreational purposes have been closed due to health hazards from the submerged aquatics.

Know Your Species

COCKLEBUR

(*Xanthium pensylvanicum*)



Cocklebur grows from southern Canada throughout the United States to Mexico, being very common in the Mississippi Valley. This pesky species is known for its sticky burs and is sometimes called clotbur, sheepbur, button bur, ditch bur, hedgehog burweed, or sea burdock. It is found in ditches, along fencerows and roadsides, in abandoned or poor pastureland, and in lowlands.

Cocklebur is an annual, hairy-stemmed, bushy plant. It is pale green and reproduces only by seeds.

Its generously branched taproot is stout, woody, and penetrates deeply in the soil. Stems (1) grow erect from two to five feet tall. They are ridged, rough, hairy, and often have distinct red spots. Stems are branched and give the plant a bushy appearance.

Leaves are either toothed or lobed, and they branch alternately from the stem. Leaf size varies from one to three inches wide and two to five inches long. The upper surface is dark- or yellowish-green, and the lower surface is pale green. Both surfaces are very rough.

Seeds (2) are produced in pairs within a burry pod. At maturity seed burs (3) are hard, woody, and covered with hooked prickles and are from 1/2 to one inch long.

Seeds are 1/2 inch long, dark brown, rather flat and slender, and have pointed tips. Usually only one of the seeds in each bur germinates during the first year, and seeds may remain in burs for several years before germinating. Burs easily stick to fur and human clothing and "hitchhike" sometimes great distances before they drop.

Seedlings (4) are very poisonous to livestock if eaten. Young plants are most dangerous just after seeds germinate. Hogs are extremely susceptible to the poisonous seedlings, and sheep, cattle, horses, and chickens have been poisoned. The poison (xanthostrumarin) decreases as the plant grows.

Cocklebur is difficult to control in floodplains, but applications of either 1/4 to 3/4 lb. 2,4-D ester or 1/2 to 1 lb. amine per acre will give control.

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

(DRAWING FROM UNIVERSITY OF ARIZONA AGRICULTURAL EXTENSION CIRCULAR 265, TUCSON)

Meeting Dates



- First Annual Pennsylvania Shade Tree Symposium**, Nittany Lion Inn, University Park, Jan. 11-13.
- 8th Annual Agricultural Pesticide Conference**, Purdue University, Lafayette, Ind., Jan. 17-18.
- 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 Weed Conference**, Hotel Robert Meyer, Jacksonville, Fla., Jan. 18-20.
- Agricultural Ammonia Institute Meeting**, Adolphus Hotel, Dallas, Texas, 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.
- Southern Chapter, International Shade Tree Conference Meeting**, Andrew Jackson Hotel, Nashville, Tenn., Jan. 20-21.
- Rutgers Golf and Fine Turf Short Course**, College of Agriculture, New Brunswick, N.J. Jan. 20-21.
- California Agricultural Aircraft Assn., Inc., Meeting**, Cabana Motor Hotel, Palo Alto, Jan. 20-22.
- Ohio Short Course for Arborists, Turf Management Specialists, Landscape Contractors, Garden Center Operators and Nurserymen**, Sheraton-Columbus Hotel, Columbus, Jan. 24-27.
- Rocky Mountain Turfgrass Conference**, Colorado State University, Fort Collins, Jan. 26-27.
- New England Nurserymen's Assn. Annual Meeting**, Hotel Kenmore, Boston, Mass. Feb. 1-3.
- Canadian Nursery Trades Assn. Annual Meeting**, Skyline Hotel, Toronto, Ontario, Canada, Feb. 2.
- Midwestern Shade Tree Conference, Winter Meeting**, Muehlebach Hotel, Kansas City, Mo., Feb. 2-4.
- 18th Annual Colorado Pesticide Applicator's Short Course**, Continental Denver Motor Hotel, Denver, Feb. 8-9.
- Weed Society of America, Annual Meeting**, Sheraton-Jefferson Hotel, St. Louis, Mo., Feb. 8-11.
- Northwest Turfgrass Assn., Golf Course Management Workshop**, Washington State University, Pullman, Feb. 9-10.
- National Arborist Assn., Midwinter Meeting**, International Inn, Tampa, Fla., Feb. 13-16.
- 37th International Turfgrass Conference and Show**, Municipal Auditorium, Kansas City, Mo., Feb. 13-18.
- 2nd Annual Colorado Agriculture Chemical Exposition**, Community Bldg., Greeley, Feb. 15-16.
- Northwest Turfgrass Assn., Golf Course Management Workshop**, Puyallup Experiment Station, Puyallup, Wash., Feb. 16-17.
- International Shade Tree Conference, Southern Chapter, Annual Meeting**, Andrew Jackson Hotel, Nashville, Tenn., Feb. 20-22.
- Pennsylvania State University Turfgrass Conference**, on campus, University Park, Feb. 21-24.
- Annual Nursery, Landscape Tree, and Turf Conference**, University of California, Davis, Feb. 23-25.
- Southern Turfgrass Conference**, Hotel Peabody, Memphis, Tenn., Feb. 28-Mar. 1.
- Texas Weed Control Assn., Annual Weed Conference**, Holiday Inn West, Amarillo, March 3.
- Midwest Regional Turf Conference**, Purdue University, West Lafayette, Indiana, March 7-9.
- 36th Annual Michigan Turfgrass Conference**, Kellogg Center, Michigan State University, East Lansing, Mar. 16-17.
- Wisconsin Turfgrass Conference**, Wisconsin Center, Madison, March 22-23.
- Wisconsin Park & Recreation Assn. Annual Meeting**, Hotel Eau Claire, Eau Claire, March 23-25.
- 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.

Midwestern Shade Tree Conference Meets Feb. 2-4

Problems pertaining to selection of species, planting, and maintenance of shade trees, and ornamental shrubs will be discussed in formal papers when the Midwestern Chapter, International Shade Tree Conference meets in Kansas City, Mo., Feb. 2-4. Place selected to accommodate this 21st annual event is the Muehlebach Hotel.

Following the presentation of each paper a question and answer period will be held.

The three-day meeting, open to all who are interested in the care of trees and shrubs, is expected to attract from 300 to 350 persons. Tools, supplies and materials used in arboricultural work will be on display.

The program includes work shop sessions with such subjects as tree taxonomy, anatomy, physiology and root diseases. Discussions will also center around year-round care of shade trees, shade trees in landscape architecture, use of fertilizer, shade tree selection and many more subjects of moment.

Information pertaining to this event may be obtained by writing to Noel B. Wysong, Secretary, Midwestern Chapter, International Shade Tree Conference, 536 N. Harlem Ave., River Forest, Ill.

Suppliers Personnel Changes

Morton Chemical Co., Chicago, reports that Benjamin J. Scaralia has been appointed northeastern regional manager of the Agricultural Products Division, of Morton International, Inc. In making the announcement Dr. R. P. Seven, general manager of agricultural products said Scaralia will be responsible for sales of all agricultural specialties. In another statement Morton says it has acquired the services of Ed Aharonian, Jr., who assumes duties as sales representative for agricultural products in New York and the New England States.

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.

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Introduction of the Astro Goggle, a new eye protector that may be worn over prescription glasses and offers unobstructed vision was made recently by Willson Products Div., producer of many industrial safety products. Willson adds that it has utilized years of research and experience to produce this inexpensive, yet efficient eye protection. The goggles are available in green, amber or clear. Details from Willson Products Div., The Electric Storage Battery Co., 2nd and Washington Sts., Reading, Pa.

All-Wet wetting agent @ \$45.00. Write Box 14, Weeds Trees and Turf magazine.

TREE SPRAYING Business for sale. Long Island, New York. Write Box 15, Weeds Trees and Turf magazine.

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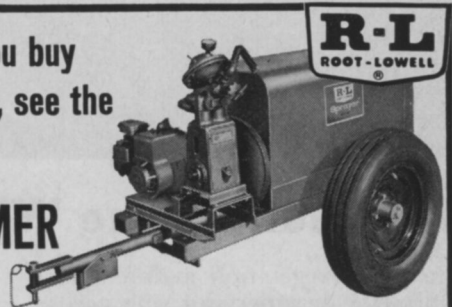
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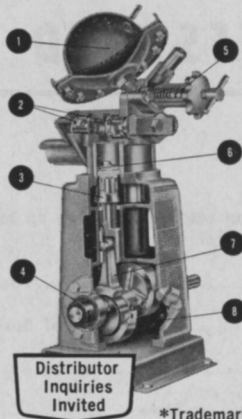
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Flowering Ornamentals Can Control Roadside Erosion

Flowering and ornamental plants normally grown in home gardens and landscapes can help control and beautify rural highway embankments, says Harold B. Harper, extension soil conservationist at Kansas State University, Manhattan.

A USDA research project in Georgia, covering a 9-year period, shows that daylilies, iris, crownvetch, English ivy, periwinkle, honeysuckle, broomsedge, and other native plants

have the most potential for roadside erosion control and beautification.

Crownvetch was one of the most promising plants in the USDA study, Harper reports. Daylilies and iris, planted three feet apart, covered the test banks in two years. Rooted cuttings of two small vines—periwinkle and English ivy—formed a good protective cover but were not as showy as daylilies.

Native broomsedge developed an excellent cover and withstood drought well in the USDA trials.



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"Nobody Home" Again. In November we told how a Monterey, Calif. reader lets his not-at-home customers know he's been there. Now Raymond E. Lee, manager of the Tree Service Dept. for Ralph Synnestvedt & Asso. of Glenville, Ill., sends us a sample of what he uses. Ray writes, "We do a lot of custom tree and shrub spraying, especially for Dutch Elm Disease, scale and canker worm control, and we used to get an occasional beef saying 'you sent me a bill, but never did the job' (oil spray is hard to demonstrate after a few days.)" His 3"x5" white card is printed in green ink. On one side is a humorous cartoon depicting two gremlins spraying a tree, plus the simple message: "Dear Client: Your protective spray was applied today," followed by the company's name. There's a line on top for the date and one at the bottom for the foreman's signature. The reverse side reads: "Remember! We are at your service for ALL types of tree care: Pruning, Feeding, Surgery, Removals. Just phone if there is anything we can do for you. Park 4-1300." Jokingly, Lee says, "Before we had these cards, I always sprayed a window or two if no one was at home, but this newer approach is not so messy!"

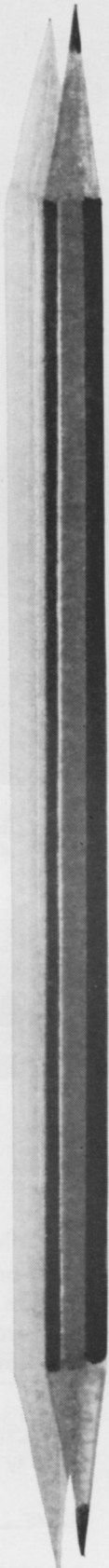
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And why not? More and more turfgrass, weed control, and tree maintenance conferences are being held in resort areas where delegates can enjoy the outside beauties of nature while they're inside talking about how to enhance and preserve it. Roy Goss told us the recent Northwest Turfgrass Conference at Hayden Lake (Idaho) Golf & Country Club was a big success, partially because of the great surroundings. There were over 35 ladies there who toured nearby Coeur d'Alene Lake by excursion boat and then motored to Mount Spokane. There was plenty of parking and early arrivals took part in a golf tournament on the scenic course of the country club. We're seeing more ladies at these meetings, too; another reason for staging conferences in resort areas . . . or maybe we're just looking for an excuse to escape the everyday hubbub of big city life.

* * *

Add five. Not long ago, Dr. Joseph E. Howland, of New Canaan, Conn., was presented Rhode Island's 4-H Alumni Recognition Bronze Plaque at a special Leader Recognition Dinner in Hills Grove, R.I. Dr. James Cobble, University of Rhode Island Dean of Agriculture, made the presentation to Dr. Howland who is now assistant to the president of O. M. Scott & Sons and editor of its "Lawn Care" magazine. Howland, an active 4-H club member in Rhode Island from 1930 to 1940, was former garden editor of "House Beautiful" and associate editor of "Better Homes & Gardens." It's no wonder he's responsible for so many of those beautiful publications Scott puts out. Dr. Joe can now add five more H's to his name: Dr. Joseph E. Howland, Honorary HHHH.

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