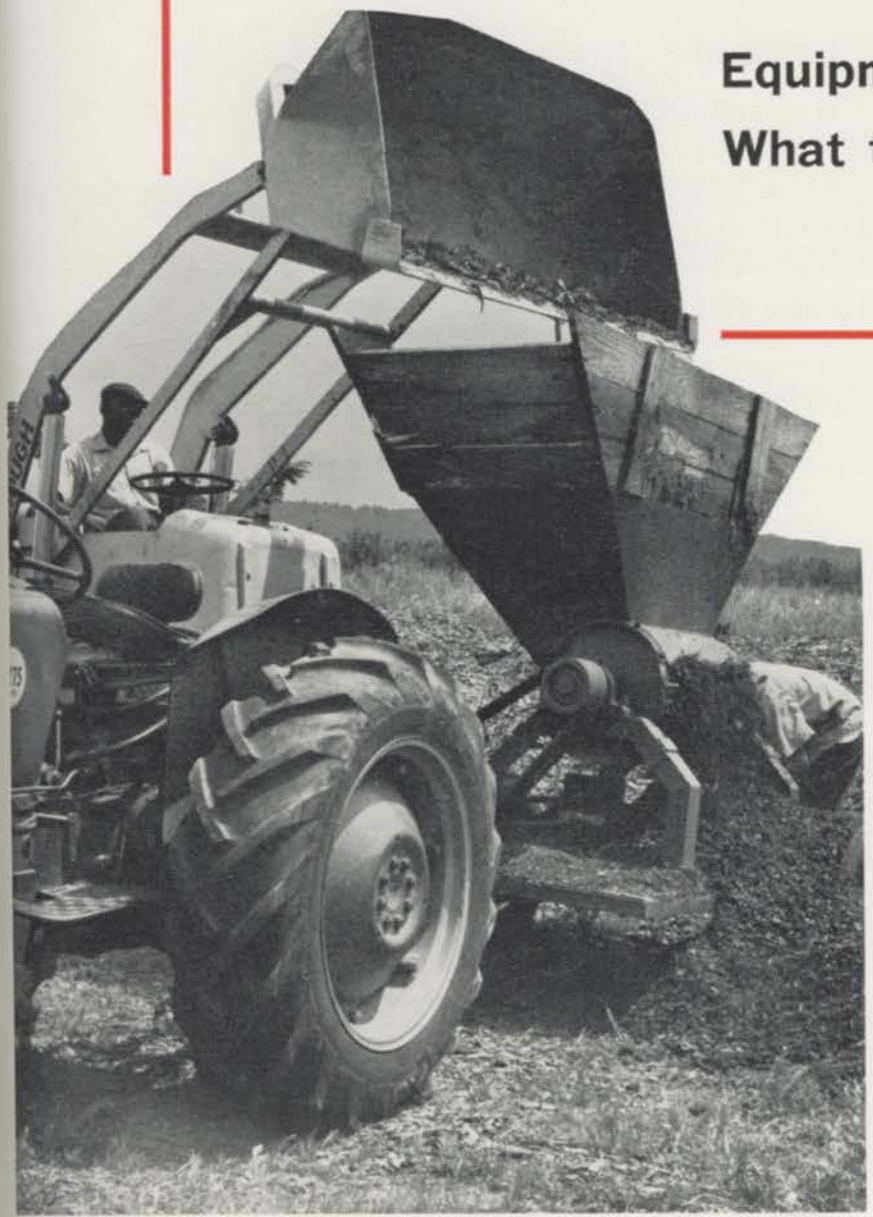
WEEDS TREES and TURF

FORMERLY WEEDS AND TURF

June 1965



Equipment Panorama – What to Use on the Job

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ALSO:

Brush Control at TVA—Part 1 12

Exclusive WTT Feature:

Turf Coloring Compounds

page 16

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

Applied by helicopter or PCB spreader, U.S. Borax herbicides help make weed killing pay off!

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CONTRACTOR'S WEED KILLER SELECTOR CHART

	PHYSICAL FORM			METHOD OF APPLICATION		TYPES OF VEGETATION						
	GRANULES	SOLUTION	EMULSION	DRY	SPRAY	ANNUALS	PERENNIAL BROADLEAVED			PERENNIAL GRASSES		AQUATIC
Product							DEEP ROOTED	WOODY VINES	BRUSH	DEEP ROOTED	SHALLOW ROOTED	
Nonselective												
UREABOR 62	X			X		X			X		X	
UREABOR 8D	X			X		X					X	
MCG	X			X	X	X	X			X	X	
MCG-D	X			X	X	X	X			X	X	
BOROCIL	X			X		X				X	X	
MAINTAIN			X		X	X	X	X	X		X	
SODIUM ARSENITE		X			X	X	X	X	X	X	X	X
Semiselective												
TRITAC D			X		X	X	X	X	X			
BENZABOR	X			X		X	X	X	X			

The chart above is a partial list of U.S. Borax herbicides and their applications. For more information or for technical assistance, contact U.S. Borax at: 50 Rockefeller Plaza, New York, N.Y. 10020; 3075 Wilshire Blvd., Los Angeles, Calif. 90005; 1700 E. Sherwin Ave., Des Plaines, Ill. 60018; 1720 Peachtree Rd. N.W., Atlanta, Ga. 30309; 79 S.E. Taylor St., Portland, Ore. 97214; or 3915 Lemmon Ave., Dallas, Tex. 75319.

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SEVIN is the registered trade mark of Union Carbide Corporation for carbaryl insecticide.

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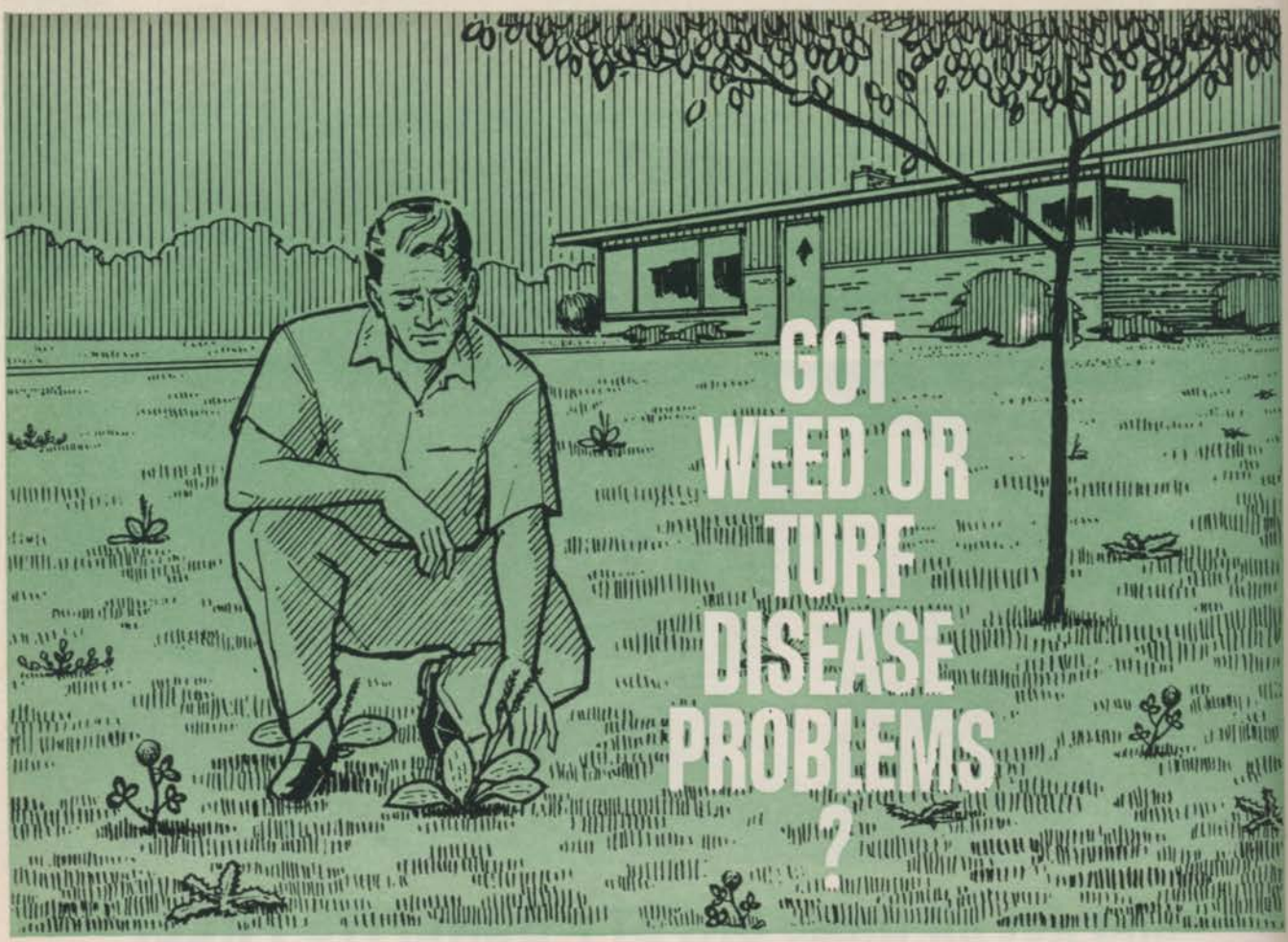

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WEEDS TREES and TURF

FORMERLY WEEDS AND TURF

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The Seed Situation Today

While the cost of replacing faulty lawns and greens, and of turf maintenance in general, continues to rise, prices of lawn seed still wallow at inordinately low levels.

Unfortunately, the low cost of grass seed is in large degree a result of foreign imports and inconsequential tariff protection. It is impossible to harvest bluegrass seed profitably in Kentucky and north from Missouri into Canada, when imports are landed in New York at not much more than 20 cents a pound.

Essential quality of this imported seed is not necessarily to be impugned. However, as far south as Kentucky it has not proved very durable in USDA comparison tests. It seems logical that domestic seed is better adapted to domestic conditions, since, for example, bluegrass that has *survived* in a certain region has the wherewithal to *withstand* local conditions.

There have been reports of weed inclusion in imported seed. Recently New York State declared annual bluegrass a "noxious weed"; this plant is almost invariably a component of imported seed, but is rarely found in natural bluegrass from our own Midwest.

There is no question that there would be national advantages if the industry did not have to fight importations so strongly. Under the present circumstances, not only is domestic production being partially obliterated, but prices are held unduly low so that future research and development are minimized because low profits forbid such luxuries.

What can we do?

Contract lawn maintenance firms can recommend varieties which are best suited for the areas in which they operate; these will more than likely be domestically produced varieties suited to the local climate. Turfgrass managers in other pursuits, such as golf course superintendents and highway supervisors, should consider the value of U.S.-produced, specially adapted, quality-controlled seed to induce healthy stands of grass with fewer weeds and less chance of loss.

And all of us as citizens would do well to comment to our congressmen that, under present regulations and conditions, the domestic lawn seed industry is not flourishing as it could and should.

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.

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Omission Is Regretted

It was with pleasure that I read the article about our New England Agricultural Chemicals Conference in *Weeds Trees and Turf*, February, 1965. We, of the executive committee, extend our sincere appreciation for the coverage.

There is one adverse comment that Oscar Wyman's (man on extreme right of picture, p. 34) title as cochairman was inadvertently omitted. He has been quite helpful in the conduct of past conferences, as a valued representative from industry, and we appreciate this and look for his continued support.

T. R. Flanagan

Extension Weed Specialist
University of Vermont
Burlington, Vt.

Weeds Trees and Turf is sorry for the omission of Mr. Wyman's title.—Ed.

It's Sterox AA

Regarding the article "Surfactants: How They Increase Herbicide Action," which appeared in *Weeds Trees and Turf*, January, 1965, could you please advise me who is the manufacturer of ethoxylated nonylphenol surfactant which was referred to in the article?

Frank Lichtig

Gramaslindas, CIA
Dorado, Puerto Rico

The ethoxylated nonylphenol surfactant referred to is sold by Monsanto Chemical Co., St. Louis, Mo., under the trade name, "Sterox AA."—Ed.

"Know Your Species" In Booklet Form?

We have been following your series on weed identification entitled "Know Your Species" with interest. It is excellent for quick reference and we are wondering if any plans have been made to supply this series in booklet form.

Ted C. Smith

West Point Products Corp.
West Point, Pa.

It may be possible that a booklet of this type will be published in the future. However, this copyrighted series has quite a way to go before it is concluded.—Ed.

Coincidental Query

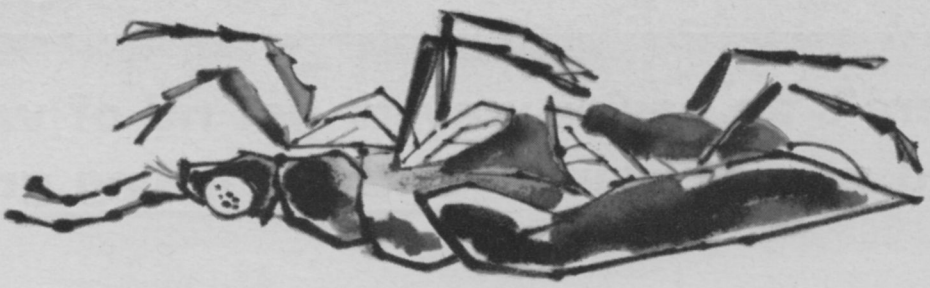
Do you know where I can get a good green dye for lawns? Any information you can give me would be greatly appreciated.

Virginia Barrett

Perma-Lawn
Baltimore, Md.

The current issue of Weeds Trees and Turf magazine includes an article on turfgrass coloring compounds (see pg. 16) and concludes with a list of suppliers who offer products for this purpose.—Ed.

Weeds Trees and Turf welcomes expressions of opinions from its readers. Send ideas and comments briefly as possible to Charles D. Webb, Editor, Weeds Trees and Turf, 1900 Euclid Ave., Cleveland, Ohio 44115



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TVA

Controlling Brush at TVA

Part I

By JOHN R. ALDRED
Botanist, Tennessee Valley Authority
Chattanooga, Tennessee

BRUSH CONTROL is a major and expensive recurring problem connected with a transmission of electric energy in the Tennessee Valley region, because of the numerous species of brush and types of terrain, which vary from swamps and rolling upland to high plateaus and rugged mountains.

Average annual rainfall is more than 50 in., and the average annual temperature is above 60°. These factors contribute to luxuriant growth of vegetation.

TVA's power system includes approximately 13,000 miles of high-voltage transmission lines, which carry power throughout an area of 80,000 sq. miles.

A long-range brush control program, properly planned and with adequate supervision to completion, will gradually lengthen the cycle of costly brush control and abruptly reduce resprouting potential of brush. Successful programming depends on choosing the proper type of maintenance, selecting the proper chemical and the right method of application, scheduling the right time for maintenance, and evaluating results accurately. In order to do this, a thorough study is necessary of conditions on the rights-of-way, such as vegetative growth, height, density of brush, species present, and terrain. These are all important, since each is a determining factor in selecting methods, chemicals, crew, and budget requirements. After these conditions are observed and studied, a schedule is prepared for the proper type of maintenance.

Types of Treatment: Foliage Spray—Ground

In TVA's brush control program, foliage spraying by ground crews consists of conventional spraying using esters, the automatic spray nozzle method, and conventional spraying with ammonium sulfamate (Ammate). Best results for this type of spraying are obtained when application is made immediately after leaves on brush have reached full growth. This condition usually exists about May 15, and spraying may be continued until about Aug. 15 if there is adequate moisture to keep the brush in vigorous growth.

Conventional Foliage Spraying —Esters The low-volatile esters of 2,4,5-T, containing 4 lbs., of acid equivalent per gal., are used and mixed at the rate of 3 gal., of chemicals to 97 gal., of water. The tank should be filled at least one-third with water and the chemical added; then it should be completely filled with water. The material should be thoroughly agitated before using. When the mixture has set overnight, or for several hours, it should be re-agitated before using.

Average volume of material per acre should be 100 gal. of mixture. Spray solution should be applied to the foliage and stems of brush (except pine and cedar) by a Hamilton handgun, moving the gun rapidly and wetting the brush to the dripping point. Pine and cedar require a complete wetting and should be thoroughly drenched. Pump pressure should not exceed 200 lbs.

Regular equipment includes a conventional spray truck with a 500-gal. tank and a 35-gpm John Bean piston-type pump, a 1-ton stake-body truck for hauling chemicals and employees, hose, and Hamilton spray guns. A spray crew consists of a foreman,

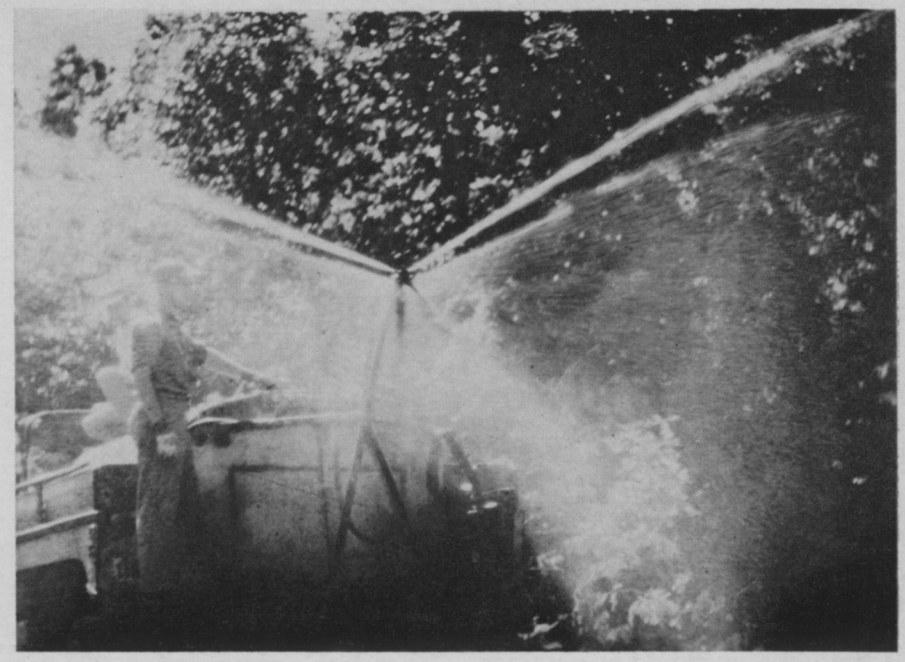
Two workers do their spraying for TVA the easy way . . . while in back of truck or jeep.

truckdriver, and two or three laborers.

This chemical is a selective material which is effective on most broadleaf plants and ordinarily does not affect grasses. It is normally used when necessary to pull hose for spraying in remote areas. It is more economical to use than Ammate.

This is a volatile material, and a number of plants are susceptible to it. Desirable plants off the rights-of-way may be injured or killed as a result of drift or vapor. Extreme care must be taken when spraying in the vicinity of susceptible crops, such as cotton, tobacco, tomatoes, grapes, legumes, potatoes, fruit trees, and ornamental shrubs.

Foliage Spraying—Automatic Spray Nozzle (ASN) The same chemicals and mixing procedures are used with this method as in the conventional foliage spray using esters. Average volume of material per acre should be 50 gal. of mixture.



TVA field worker stays on truck, operates spraying equipment directly from vehicle.

Check Spray Pressure

Before actual spraying begins, equipment should be checked to see that it is properly set to maintain 20 lbs. of working pressure on the nozzle and 100 lbs. of working pressure to the manifold and handgun. In the event that sections of hose are stretched to spray small areas where the truck cannot be driven, pressure to the manifold and handgun may be increased; however, as soon as these areas are sprayed, pressure should be reduced. The truck should travel at a speed of 2 mph on the right-of-way. The truck should be driven in low and second gears and shifted to first gear to maintain a speed of 2 mph on steep, hard pulls. One round trip will be required on 75- and 100-ft. rights-of-way, allowing an overlap in the center of the 75-ft. right-of-way. On 50-ft. rights-of-way, one trip down the center of the right-of-way will be sufficient. The pump is not to be operated in excess of 700 rpm. It should be operated as near to 500 rpm as possible at all times. Clear, clean water should be used, since sand and other foreign matter will ruin nylon rollers and seals.

Regular equipment includes an automatic spray nozzle mounted on an IHC or Reo truck with Hypro pump operated by power take-off (PTO). A 1-ton stake-body truck for hauling chemicals and employees, a Tokheim hand pump, a ⅜-in. spray hose, Hamilton guns, and a knapsack sprayer. The crew consists of a foreman, a truckdriver, and one or two laborers.

One of the main advantages of this method is low cost. It is a rapid method of dealing with extensive areas of dense brush during the growing season.

Because this method is used during the growing season, sensitive crops such as cotton and tobacco can constitute a problem. In general, no spraying should be done within 500 ft. of cotton or 300 ft. of other susceptible crops and plants, such as tobacco, grapes, gardens, legumes, fruit trees, and ornamental plants. This method is limited to areas accessible to power vehicles.

Conventional Foliage Spraying—Ammate Ammate X and spreader-sticker acid are used. Standard mixture is one 60-lb. bag of Ammate to 100 gal. of water, plus 4 oz. of spreader-sticker acid. First, put approximately 200 gal. of water in the 500-gal. tank, with the agitator running; then pour each bag of chemical in slowly so that it is suspended or dissolved in the water. If this procedure is not followed, the crystals will clog the feeder lines and the feeder-line strainer. These mixtures require constant agitation, which should be continued until the mixture is of a smooth orange consistency before using. Agitation should continue while the mixture is being used.

Average volume per acre should not exceed 200 to 500 gal. of mixture, depending upon brush conditions, such as height and density. When this method is being used, all foliage should be wetted thoroughly to runoff, but not overdrenched. Nozzle pressure should be maintained at 200 to 250 lbs.

Regular equipment includes a conventional spray truck with a 500-gal. tank and John Bean pump, a 1-ton stake-body truck for hauling chemicals and employees, hose, and Hamilton spray guns. The crew consists of a foreman, a truckdriver, and two or three laborers.

Ammate is nonvolatile and may be used near susceptible plants. Care must be exercised to prevent the chemical from coming in direct contact with plants off the right-of-way.

This is a contact chemical and

affects plants it contacts as a result of direct spray application or drift. It is used near susceptible crops, where esters cannot be used. This material is corrosive, and care must be taken to prevent damage to equipment. Trucks used for spraying with Ammate should be thoroughly washed every two weeks and sprayed with Ennis fluid.

Spraying With Helicopter

Best results for helicopter spraying are obtained from sprays applied during the lush growth following full-leaf development, which is from about May 15 until July 15.

Low-volatile esters of 2,4,5-T are used. The mixing ratio is 20 gal. of chemicals to 80 gal. of water. Water should be obtained from city water systems and must be free of sand, rust scales, and other trash particles to prevent clogging of screens and nozzles. After the mixing tank has been filled, or while it is being filled, the material must be thoroughly agitated. Agitation should continue until a uniform mixture is obtained. Spray mixture should be agitated two or three minutes before each loading of the helicopter. Material left in the helicopter tank overnight should be thoroughly agitated with a boat paddle before application.

Average volume of material per acre should be 5 gal. of mixture. Daily helicopter spray period normally begins at daybreak, weather permitting, and stops when the wind velocity reaches 3 mph. Spraying is resumed late in the afternoon, if wind velocity decreases to 3 mph, and continues until dark. The helicopter is flown at 30 mph and should have adequate power to climb steep terrain, since spraying should be done uphill to obtain better control of the chemical mixture. Normally two passes are made to cover the full width of the right-of-way. Since rights-of-way are normally 50, 75, or 100 ft. in width, a varying swath width is necessary. This is accomplished by adding or removing nozzles on the spray boom.

Equipment used in servicing TVA's helicopters consists of two 2-ton trucks with no-spin differentials. One truck is equipped with a pump, meter, 1½-inch hose, and 1,100-gal. tank consisting of three compartments, with a mechanical paddle agitator. The other truck is equipped with hydraulic tail lift for loading chemical drums and a 300-gal. aviation gasoline tank. Radios are installed in the helicopter, supervisor's car, chemical-mixing truck, and a sedan delivery used by the mechanic. The crew consists of a supervisor, pilot, helicopter mechanic, and two truckdrivers.

One advantage for use of a helicopter in chemical application is the lower cost realized in areas where accessibility by ground crews is difficult, such as mountains and swamps. Another advantage is the comparative speed. A helicopter can spray 10 or more miles of 100-ft. rights-of-way in a day's operation. If brush is intermittent, it is possible to spray 30 to 50 miles a day. This speed also enables coverage of considerably greater acreage while plants are more receptive to the herbicide.

The major disadvantage of aerial spraying is crop damage, due to drift of small spray particles when wind is excessive: 3 mph or over. The operation requires skillful pilots, experienced in utility right-of-way spraying, and highly specialized equipment and supply units. This equipment is expensive and can be used only for short periods during the day. Also, work is seasonal. Therefore, helicopter spraying must be properly planned and initiated in order to utilize every minute of spray weather.

Basal Spraying

This method of spraying can be performed at any time of year. Normally, it is done after foliage work has been completed. In some instances, weeds, briers, and grasses may interfere with this method; work may have to be deferred until a killing frost.

Low-volatile esters of 2,4,5-T are also used in this type of spraying. Material is mixed by using 3 gal. of chemicals in 97 gal. of diesel oil or No. 2 fuel oil as a carrier. The mixture should be thoroughly agitated before application by running the pump with the spray gun open and circulating the mixture through the bypass and gun into the tank.

Average volume of material per acre should be 100 gal. of mixture, depending on stem count and species. Material should be applied under low pressure, not more than 50 psi. Chemical mixture is applied to the basal portion, or root crown, of each plant to a height of 12 in. above the ground line, including all exposed roots. Wet all foliage and stems on conifers (pine, cedar, etc.). The gun must be held close to the area where the mixture is directed. It is important to wet the complete circumference of the stem to the point of visible rundown at the ground line, since the mixture must penetrate the root collar zone to receive maximum results on brush in dormant stage.

Regular equipment consists of a Reo or IHC truck with Hypro pump operated by PTO, a 1-ton stake-body truck for hauling chemicals and employees, a Tokheim hand pump, ⅜-in. spray hose, Bete guns, knapsack sprayers, and protective clothing and shoes for crew members. The

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The Tennessee Valley, site of the government's vast power complex, has many marshy and mountainous areas, high plateaus, and numerous brush control problems. Handling this complicated maintenance endeavor well equips author John Aldred, TVA botanist, to detail for WTT readers his effective, systematic procedures.

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crew includes a foreman, a truckdriver, and three or four laborers.

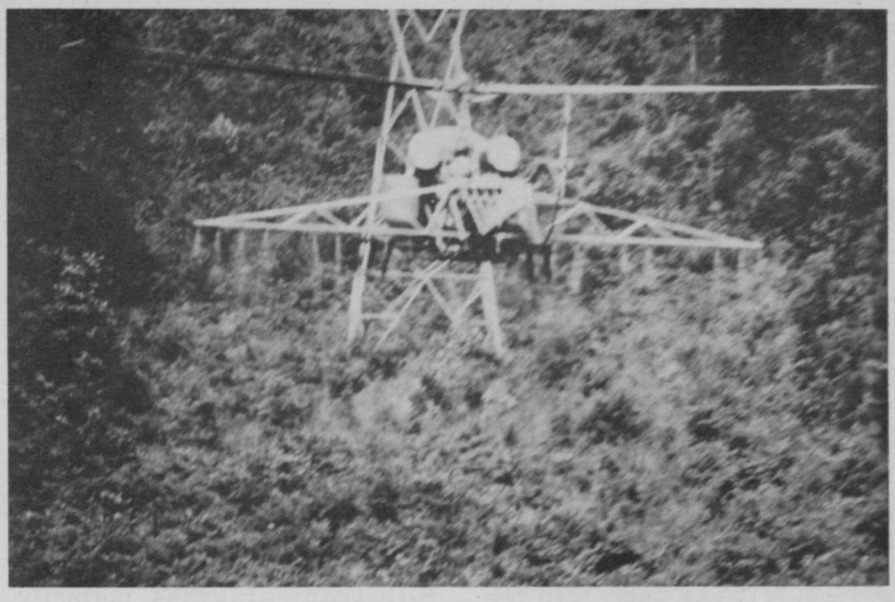
Since this type of application can be made in virtually any season, it permits utilization of labor and equipment over a longer period. It is used primarily as a re-treatment after one or more foliage applications, since it is effective on most species resistant to foliage spray, and it does a good cleanup job. It is also used in the nongrowing season to catch "skips" left by the ASN and helicopter because of susceptible crops. It can be applied in dormant seasons when results of the application will not give "brown-out" to existing foliage. The basal method is generally not hazardous, particularly when low-pressure application is made during the dormant season.

This basal method is not feasible for dealing with dense stands of brush. Sumac, sassafras, and locust should not be treated because of their rooting habits; however, they should be treated if they reach a height hazardous to operation of the line. This method kills original stems of these species; however, in most instances resprouting from the root system occurs, increasing stem population.

Application of Pellets

Pellets can be applied at any time during the year; however, for best results, it should be done in late winter or early spring.

Dybar or Urab pellets are used, and three patterns may be used in applying these pellets: spot, broadcast, and grid. The spot method is more economical on scattered brush. It consists of standing erect and pitching 1 to 2 tbsp. of pellets on the ground at the base of each bush. Large clumps or trees require 3 to 4 tbsp. in spots around the base of the brush or tree. The broadcast method may be applied by hand or mechanical spreader, such as a cyclone seeder, at the rate of 40 to 60 lbs. per acre. If brush is dense, rates up to 100 lbs. may be required. The grid method for dense stands of brush is to pitch 1 to 2 tsp. on the ground every 3 ft. in a grid or checkerboard pattern. If the surface where pellets are being applied is sloping, it is essential that they be dropped on the upper side of brush. On fence rows near crops, apply pellets on the side of the crown of the fence row away from the crop field.



One of TVA's helicopters swoops low to give this brush a lethal dose of chemicals.

Standard equipment includes a truck for hauling chemicals and employees, a spreader for broadcast application, and a bag with shoulder straps or a plastic pail and tablespoon for individual or clump stem treatment. The crew consists of a foreman, a truckdriver, and two to four laborers.

This method is useful for brush control in areas hard to reach with spray equipment. It is also an economical method to clean up "skips" from foliage application and treatment of scattered brush.

Pellets should not be applied near valuable plants or trees, or on areas where their roots may extend. They should not be applied on brush standing in water. Because of economical factors involved, this method should be confined to small areas of brush where it cannot be more economically treated by some other type of maintenance.

Mechanical Maintenance

Rebrushing by the mechanical method is necessary on rights-of-way where brush has been allowed to grow to such a size and density that spraying by ground crews would not be practical. Mechanical cutting of brush only renders temporary relief and must be repeated at frequent intervals. Basic disadvantage of cutting is that stem population is increased and makes each cutting more difficult and more expensive. Also, the established root system provides an excessive amount of moisture and food for vigorous growth of resprouts.

Numerous tools and equipment are used in mechanical methods; most commonly used are power saws with clearing attachments, rotary cutters, and Kaiser blades.

Mechanical cutting with power saws equipped with clearing attachments is the most economical method of cutting areas where there is both small and large brush. The crew should consist of a foreman, truckdriver, and four to six laborers.

The rotary cutter is a good tool for mechanical cutting if used properly. It can be maneuvered in brush stands, cutting up to 2 in. in diameter and leaving larger brush for power saws. However, there are limitations on maneuverability of this machine; its use should be confined to fairly smooth ground which is free of large rocks, etc.

Be sure to watch for the second and concluding segment of Aldred's TVA article in the July issue of *Weeds Trees and Turf*.

How to Use the New

Turfgrass COLORING Compounds

GREEN GRASS may turn yellow or brown, for a variety of reasons: natural dormancy, drought, overuse, insect damage, chemical damage, mismanagement, or disease.

When grass browns out, it immediately loses its usefulness. Turf managers faced with any of the above situations may find turf colorants helpful.

This article describes what turf colorants in general are good for, what is involved in application, and the different qualities possessed by each.

At the outset, we should state that turf colorants are not turf management tools in the strict sense of the term. Colorants do not nourish grass, they do not protect grass against pests, and they do not correct soil conditions which often lead to unsightly brown-outs. They simply color lawns, or patches of turf, to make grass look better. Colorants should not be substituted for good cultural practices when true deficiencies are the cause of yellowing, but there is a definite place for artificial turf coloring.

Colorants can be of special value in the South and West. Sub-tropical grass normally planted in these regions enters dormancy when cool weather sets in. The cultural practice used to make these lawns appear green is to overseed or "winter-seed" with inexpensive cool season or temperate zone grasses.

When grass turns brown in the fall, or earlier if attacked by diseases or insects, turf managers will find the new turf colorants useful. They'll open new avenues of profit for the lawn maintenance company, and help the golf course superintendent, etc., avoid complaints!

Research with colorants has shown that application of a specially formulated emulsion paint, which coats the dormant grass blades, does no harm to grass plants, and makes the lawn green for the remainder of the season. The green color of most formulations now available persists until grass grows up from the bottom, and painted blades are removed with a mower. Observers notice no significant difference in color of the properly painted portion of a grass blade and that portion showing new growth after the dormant period. Colored dormant turf must still be watered regularly.

In northern regions, where well-selected grasses do not enter winter dormancy, but thrive in winter, colorants may temporarily cover insect or disease damage, after proper chemical controls have been applied. During drought, grasses may yellow because of neglect, and after proper watering, may need to "green up" quickly for the sake of appearance. Colorants can be used here too, though manufacturers suggest that turf managers use a probe to test soil moisture on turf which has been treated in a drought area; it may look good, but if not watered roots will die. This advice applies to managers in the South and West, too.

Colorants may be used to cover up a mistake or an accident, such as fertilizer or chemical burn, or even dog urine stain. Such treat-

ment requires more skill and a good eye for color, because the applicator must match the natural green as much as possible, if a spot treatment is applied. Otherwise, total treatment is recommended.

Colorants can act as stopgap measures, used before cultural or chemical treatments, depending upon time of year. For instance, a homeowner may call for service to have a lawn treated for browned-out crabgrass in the early fall. Crabgrass dies out in the heat of late summer and leaves brown spots in turf when it goes.

An operator may use a preemergence crabgrass preventive which is best applied in the spring. In the meantime, artificial colorants can be used to cover dead crabgrass spots and give the lawn a good appearance until the following spring when it is treated.

Several manufacturers of colorants state that their products are used on football or baseball fields. Colorants give the turf a better appearance near the end of the season. This impresses spectators and color television audiences, since games appear on nationwide TV with increasing frequency.

A golf course which had a "rough season" may want to color grass for a special occasion. Again golf matches on color television make really green grass imperative.

What Are Colorants?

Most colorants consist of an emulsifiable paint pigment, similar to house paints, but with no toxic properties to animals or plants. Pigment mixed with water and sprayed on turf coats grass blades; no grass color beneath shows through because these paints are opaque.

Manufacturers claim tests show paints are fade-resistant, harmless to grass, and permanent on grass; that is, once dried, the green color will not resolubilize nor rub off.

One material is an exception, and it will be well to discuss it here. Auragreen* is a mixture of

*See end of article for list of manufacturers of compounds marked *.

malachite green and crystal violet dyes and auramine fungicide. It may be used at a low rate for a temporary touchup of discolored turf. Its fungicidal properties are limited to control of incipient brown patch disease infestations. For brown patch control, it is used at a rate of ½ oz. per 1,000 sq. ft., dissolved in water. The manufacturer warns that the material will stain clothes, shoes, etc. until it dries on the grass. It also shows a "slight tendency to stain" if rewetted.

Fungicidal properties of Auragreen are not long lasting, but color persists "up to several months," according to the manufacturer, depending upon the use, irrigation, and mowing of grass. The company suggests mowing be suspended as long as possible after application for most "mileage" of the color.

This material can be applied frequently with no danger of harm to turfgrasses. Although Auragreen is in a separate class of turf colorants, it bears study as a special-use material.

Turf paints are diluted in water at varying proportions: from 1 part colorant to 7 parts water, to 1 part colorant to 15 parts water. Dilution directions reflect "strength" of the paint formulation. Most manufacturers say 1 gal. of finished spray will cover about 500 sq. ft. adequately. Others may instruct users to spray twice or three times to get "desired" green intensity.

"Desired green intensity" is difficult to define because color is partly a matter of taste. What may be desirable to one person may seem a repugnant green color to another. Greenness of turf is partly dependent upon regular maintenance which grasses receive, so different lawns of the same grass may have a different shade of green. Also, no standard has been set so that one can say that bluegrass is "x" shade of green, and bermudagrass is "y" shade of green.

Cost of material, important to contract applicators, is reflected both in the dilutions for "desired green intensity" and number of passes necessary for a "desired green." At this time, only a careful study of label recommendations and manufacturers' claims can indicate which material should be used. Companies offer trial samples, so that operators can decide by trial and error which material works best.

Matching green color of spray with green grass should be a concern only when colorants are used as touchup treatments. For an overall treatment of a browned-out lawn, color will be more uniform and taste will determine the proper or most-desirable shade. Manufacturers say to wait until southern lawns brown out completely before application of material so that color on turf will be uniform. For overall treatment on green grass, opaque paints will totally cover all grass and impart uniform coloration, but the consideration here is the high variance of color with a neighbor's lawn or other adjacent turf.

Arborists Adopt National Trademark

A stylized tree, enclosed by an outer spade-shaped shell signifying protection, will identify more than 200 members of the National Arborist Association.

The new symbol will be used in advertising, trade papers, on trucks and uniforms, and will appear on all printed matter.

"This trademark was chosen unanimously by the membership because it is distinctive, modern and identifies our profession instantly with a quality connotation," says Winston E. Parker, president of the association.

MEMBER NATIONAL
ARBORIST
ASSOCIATION

Getting Ready For Green Spray

To prepare an area for coloring spray, one should mow the grass as short as is practicable or recommended, remove clippings, and rake lawn to remove any trash or debris. The shorter the grass, the less material is required to coat the leaf blades to the crown. Grass actually growing should not be clipped closer than customary, however, because food production capability of the roots might be impaired. No more than a third of the leaf blade of healthy grass should be removed at one time. This factor will not enter into the preparation of a dormant lawn since leaf blades are nonproductive. Experience will reveal how much material will treat 1,000 sq. ft. of grass at a certain height.

As we pointed out in the beginning, fall treatments of some athletic fields for the sake of appearance are sometimes requested. More coloring will be needed on such a playing field, because grass is usually left at maximum height.

Since paint pigments are relatively permanent, applicators must be careful not to spray adjacent concrete or wood. Some manufacturers instruct users to wet down surrounding concrete before applying color spray. Then if some paint drifts, or splashes onto concrete, it can be rinsed off quickly with water before it sets. Once dry on concrete, scrub brushes, steel wool and sand-rubbing are recommended to alleviate the "giveaway" green stain.

For the greatest safety, users are advised to mask off surrounding concrete drives, or curbs and foundation walls with paper or tarpaulins so that emergency scrubbing of these stainable surfaces will not be needed.

Clothing, too, may be affected by turf color sprays, since paint which gets on the applicator's clothing and shoes does not read-

(Continued on page 27)

Now, you can control both nematodes and insects in turf with one product...new Sarolex.

One application of new Sarolex® nematicide-insecticide . . . that's all it takes now to get long-lasting control of a wide range of plant-parasitic nematodes and insects.

New Sarolex does away with your having to make separate applications of different products in order to obtain effective nematode and insect control in established turfgrasses.

The nematode and insect control that new Sarolex provides is truly remarkable. Greening response in turf severely damaged by nematodes, chinch bugs and other soil pests has been dramatic.

To get the full story on new Sarolex, and to find out how it can drastically cut turf pest control costs, fill in the coupon below.

We'll send you all the details on the many kinds of nematodes and insects Sarolex controls, on length of control, greening response, toxicity, phytotoxicity, and methods of application. Also, information on rates to control both nematodes and insects with one spray, as well as even lower rates for insect control alone.

While Sarolex may be applied at any time of the year, most effective period for treatment is when grass is growing fastest. That starts in May. So, mail the coupon today.

*SAROLEX is a trademark of Geigy Chemical Corporation.

Geigy Agricultural Chemicals
Division of Geigy Chemical Corporation
Ardsley, New York

Please send me complete information on new Sarolex nematicide-insecticide.

Name_____

Company_____

Address_____

_____

Equipment Parade at Callaway Gardens

By FRED GALLE

Director of Horticulture, Callaway Gardens, Pine Mountain, Georgia

Callaway Garden's "A Frame" tree mover is shown here transplanting large Burford Holly.

ESTABLISHMENT, development, and maintenance of a 2,500 acre garden requires use of many types of equipment. A great deal of horticultural work still must be done by hand, but, with the continual rising of labor costs, we combat this with better equipment and better utilization of equipment.

We have developed several pieces of equipment for our own use and have modified others to enable us to do a better job. We know it is important that all our foremen work together with our maintenance foreman to determine how we can best utilize this equipment and become more mechanized.

A good maintenance foreman is essential, and it is necessary to assure he has proper equipment to do the job; keep spare parts available, and have on hand a good supply of common nuts and bolts, along with replacement units of frequently needed items.

We find that a disc grinder is very important for sharpening tools, axes, and other equipment. We have paint sprayers for painting all our equipment. This keeps all our tools clean and ready to use. We maintain our own wheel balancers for trucks and other vehicles, and also a blade balancer for alignment of mower blades, thus reducing vibration of individual small motors. Also, our maintenance equipment includes a portable steam jenny, which is used during maintenance work and prior to painting.

Proper storage of various tools is important. We try to keep them ready to use at all times. We use racks for holding chain saws, tools, and implements.

Taking care of a 2,500-acre garden has made author Galle more cognizant than ever of the value of proper equipment and the necessity for efficient upkeep. Here he tells other vegetation maintenance professionals some of his "secrets."

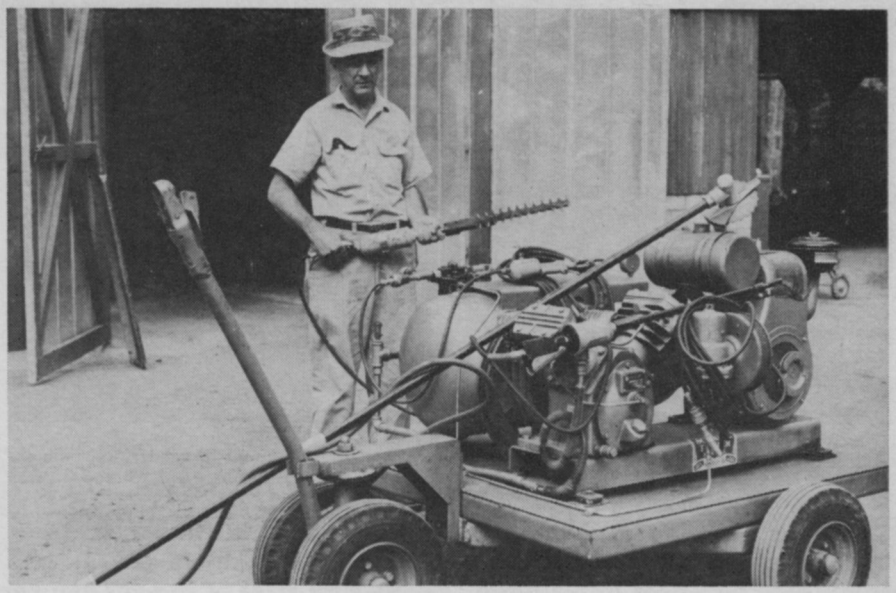
Small hand tools are stored in locked boxes.

In our shop, we also construct our own large wooden signs, which are used on driveways within the gardens. We are presently routing them out of redwood. Our router has a simple attachment for a suction unit to remove dust. We find that a radial arm saw is very good for sign work. For a very inexpensive one we use a laminated sign, consisting of poster board, laminated in Mylar. Signs are prepared on a typewriter equipped with very large characters, or they are sometimes hand printed, and then run through the laminating machine. We use our own machine for engraving laminated plastics for signs and small labels.

One real labor-saving device, which we have used for at least 10 years, is a soil auger. We have augers, varying in diameter from 6 to 24 in. and which, in an average day, can drill 300-400 holes, equivalent of one day's work for a crew of about 20 men. We made an interesting adaptation to this auger several years ago, when we made a blueberry planting. We had to mix organic matter into the soil directly in planting holes. To do this, we made up a simple mixing unit, which, when attached to the auger unit, mixed the peat moss and organic matter with soil already in the hole. This soil mixer has also been used in other planting areas where the basic soil is good and where we only had to add organic matter to the area.

We prepare our own planting soils, usually averaging 300-400 loads of prepared soil each season. Our normal planting schedule includes placing some 10,000 permanent plants each year. We use a front-end loader for soil mixing.

Unfortunately, since we're in an area where very little farm manure is available, we must make our own compost. We use a forage or silage harvester for collecting green material, which can then be composted. We have concrete storage bins where this material is placed for breaking down into organic matter. Each storage bin is 20 x 40 ft. with the

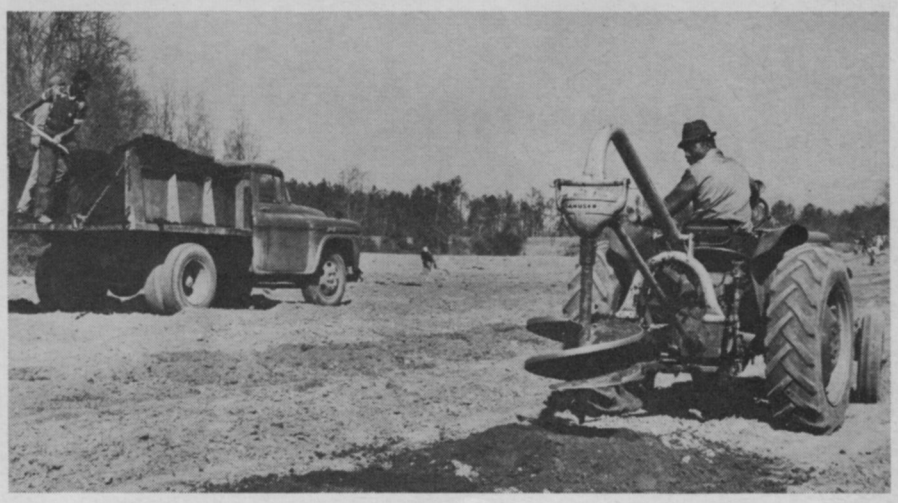


Small tractor unit, sometimes pulled by hand, with pneumatic equipment for pruning.

Loader feeds bark through compost grinder.

Howard Rotovator shown here proved excellent for soil preparation. Callaway Gardens has three of them, as well as one tractor unit.

Here's how Callaway Garden's 24-in. soil auger digs holes for new blueberry plantings.



1½-ton truck with 500-gal. tank and small pump for fighting fires, if needed. In winter, Callaway Gardens keeps several 50-gal. drums on hand for similar use with pickup trucks.

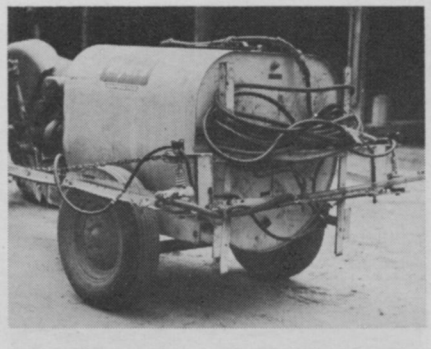
side walls 5 ft. high; each bin has internal drainage. The effluent from these bins goes into a large septic tank, where it can be pumped back into compost bins to activate new batches of material.

Steam Storage Bins

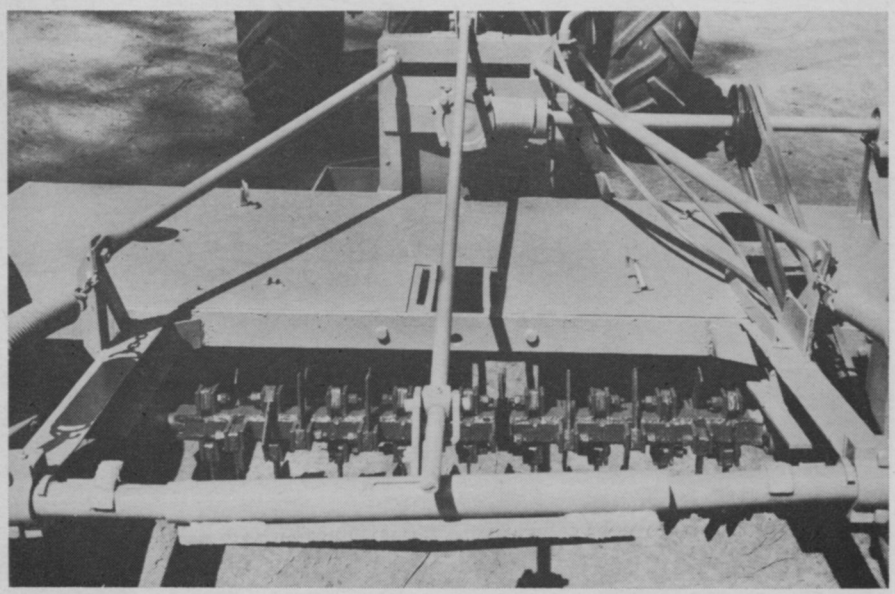
We also sterilize these bins. We use a large 100-hp steam unit, and we lay galvanized pipe which has holes to release the steam, placing these on the bin floor and building the compost pile on top of it.

In many cases, when we plan to mix soil and compost together, we use a Howard Rotavator, a tractor-mounted unit, to mix this material on the apron in front of bins, and then put it into the bins with the loader. We also made our own compost grinding unit. It works much like a hammer mill, but it utilizes the tractor's power take-off (PTO).

Several sizes of screens can be mounted for blocking various materials. We can also shred block sod of bermudagrasses to establish new lawns. This machine breaks sod and we can work out stolons for developing new lawn areas. It is a rugged piece of equipment and, since it is homemade, we feel that it is very practical and well worth the expense. The unit can also be used for grinding corncobs, and also for grinding pine bark and other coarse material which we can utilize as mulch.



200-gal. power sprayer used for spraying herbicides. Unit has handgun and boom rig.



Hammer knife or verticut mower made from old mower frame. Knives are 3 in. apart and covered with heavy metal shield when in operation. Unit is believed to be one of first made.

Collecting mulch for our plantings is a major job, as is cleaning up more than 15 miles of drives within the gardens. Over 10 years ago, we devised a leaf-suction machine, using a 12-in. suction hose at its base and a 25-in. heavy industrial fan. This unit is powered by a 20-hp Wisconsin motor. Later, we put in a vacuum trailer unit on the back of this and now we can go back along the drives and pick up leaves. We still use the large hose and small trailer unit in different areas. This is pulled by a dump truck; the bed is enclosed and leaves are drawn into it.

We have a wide range of mowing units, from a 12-ft. rotary mower for large areas, to the small individual 24-in. units. In many areas, where we are cutting near the public, the Mott Mower is one of our more important units. It is a very safe mower to use around people. We have made several small trailers for moving equipment; rear gates drop down to make a runway for mowers.

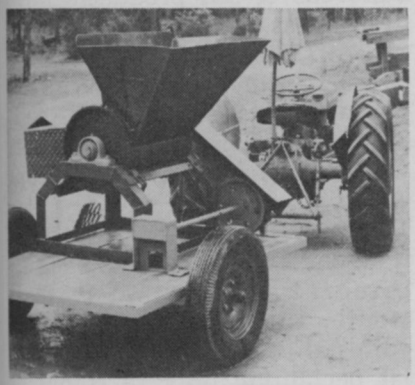
Test New Chemicals

We try to keep informed of all new herbicides available to see how they might be used in our operations. Many times, we test and evaluate some materials for chemical companies.

We have two different sets of spraying equipment, one for use with herbicides and one for general insecticides and fungicides. All spray equipment used for herbicides is marked as such, so these units are not used for general insecticides and fungicides. We also have a back-pack duster and mist unit, as well as a large mist blower.

Summer irrigation can be a major problem. We have several portable pumps we can move to our many lakes for irrigation. Many pumps we use operate on LP gas and others are operated

from the PTO of a tractor. Pipe trailers for hauling irrigation equipment are necessary for getting equipment to the area. We have nearly two miles of irrigation pipe, consisting of 2-to-6-in. sizes. Various adapters are needed so pipe sizes can be assembled. We found that a tensiometer is a great aid in measuring irrigation requirements. Small porcelain Bouyoucos units are buried to a depth at which we wish to read soil moisture, and they become permanent installations. Small battery units are placed on cables attached to underground units, and a reading is obtained for soil moisture needs.



Homemade compost grinder powered from PTO on tractor. Garden workers add large hood when moving loads with a front end loader.

15-gal. sprayer used in planting beds.

Garden's back pack mist blower or mister.

A few years ago, we began using pneumatic pruning equipment. We have a small trailer unit, which we pull by a vehicle or by hand along trails where we can use pruning shears or saws. We made two modifications on our hedge shears for a special pruning job in a grape vineyard. We shortened the blade, and with two units running, we reduced time involved in pruning a 25-acre muscadine vineyard to one-third the time normally needed to prune by hand.

Buy Latest Literature

Office equipment is also necessary for our operation. We have proper storage of catalogs and equipment literature. It is vital that we refer to these files continuously. Also, we try to keep up with the latest publications. Unfortunately, there are many books of little value, and we must evaluate them before buying. After purchasing, we see that they are read by various people within the organization, rather than just occupying space on a shelf.

Storage of photographic slides is a major problem with us. We found that Multiflex cabinets are very good. We do not number slides, but file them under subject matter. It is very simple to pull slides and assemble them into groups for slide presentations.

We are continually on the alert for new and better equipment and for a re-evaluation of our own equipment to see how it is holding up, and to see if there can be some adaptations or modifications to make it more useful.

We have also had good cooperation with major equipment companies. This we feel is very important, for a source of equipment and parts is very essential. With this cooperation we have been able to do a better job throughout our operations.

CURLY DOCK

(Rumex crispus)

Curly dock is a perennial which reproduces from seeds. It may be termed yellow dock, sour dock, or narrow-leaved dock by local inhabitants. It is found in fields, pastures, lawns, meadows, and roadsides throughout the United States and southern Canada. Although there are several other species of *Rumex* called dock, this species is the only one with wavy leaf edges.

Stems (1) which arise from the root crown in the spring are smooth and stout. They may grow to 4 feet high. Several stems may arise from one root crown.

Leaves are lance-shaped, but with curly, or crispy edges. They appear alternately on the stem. Fewer leaves occur on the upper portions of the plant stem. Leaves have no hairs and are smooth.

Flowers are borne on stalks called racemes *(ra-as in rabble,-seems)* which grow from the axils of small upper leaves (2), and from stem ends. The flowers are petalless and small, occurring in whorls about the raceme stalk. Having no petals, they appear greenish, and as they mature, they turn reddish brown. Each flower will have developed 3 seeds, and each group of 3 seeds is surrounded by 3 papery wings, or bracts, which are somewhat heart-shaped (3). These 3 wings under some conditions cause the pod to be borne on the wind for a short distance.

The root is a yellow, deep, stout taproot. The plant is not killed by digging unless the stem is cut off well below the ground line. For this reason, mowing does no permanent good.

Spray in the spring with 2,4-D. Two or three sprayings will kill curly dock.

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

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

WTT's New Monthly Sod Section Debuts in July

A complete section devoted to professional sod production in the United States will be a regular part of *Weeds Trees and Turf* starting next month.

Months in preparation, this new regular feature will discuss subjects of unique interest to the hundreds of sod producers now in business throughout the country. *WTT* editors say thousands of turf professionals in allied pursuits who sell or install sod, or who are called on to treat it, will also find the section interesting.

Called the Sod Industry Section, the department will be an integral part of *WTT* each month, although it will contain editorial and advertising material pertaining only to commercial turfgrass sod production and handling.

Subjects to be covered include new techniques of harvesting, materials handling on the sod farm, labor management, marketing, seeding, irrigation, and similar topics.

In keeping with the editorial approach characteristic of the rest of the magazine, articles will be use-oriented and will be prepared by leading authorities from the field, including major sod farm executives, experts from universities and government agencies, and the *WTT* technical staff.

Inauguration of Sod Industry Section is a result of the editors' awareness that one of the most striking aspects of the overall professional turf market as it exists today is the rapid growth of commercial sod farming. Surveys by this magazine show hundreds of companies are now actively engaged in the business, and more are entering the field every day, in answer to a dramatically increased demand from affluent homeowners, from institutional groundskeepers wanting "instant lawns," and from others who consume this "crop" at an enormous pace.

Be sure to watch for the first Sod Industry Section in *WTT* next month, and every month thereafter.

Three powerful Hooker herbicides for noncrop land

These nonselective weed killers offer broad-spectrum weed control at a low cost.

Used along highways, fence rows, on railroad and industrial sites and other noncrop land, they control a large variety of deep-rooted perennial weeds under a wide range of climatic conditions.

Our new MBC(TM) is fast, easy, highly effective. It gives quick knockdown of vegetation and residual control of broad-leaved and grassy weeds.

Tritac(TM) is a very economical herbicide. As little as four to eight gallons can treat an acre for a season or more. Three formulations—liquid, liquid with 2,4-D, and granular—provide flexibility of treatment.

Hooker sodium chlorate, the original one-shot weed killer, has a forty-year reputation for efficient control.

Our agronomists will be glad to advise you on handling, storing and application of Hooker herbicides and to help with your weed-control problems. Please write Agricultural Chemicals, Hooker Chemical Corporation, 406 Buffalo Avenue, Niagara Falls, N. Y. 14302.

HOOKER CHEMICALS PLASTICS

AGRICULTURAL CHEMICALS

Fla. Applicators Take "Bull by Horns," Set Up National Spraymen's Association

"To be or not to be" . . . a national spraymen's association?

This earnest question is currently being posed by applicators from all corners of the nation. They need an answer. They want a nationwide organization.

Involved in this problem is not so much "if," but rather "how?", according to the stack of letters and inquiries that has passed through the *Weeds Trees and Turf* mailbox during the past several months.

A possible solution to the enigma has been offered by a Floridian who has his sights set on such a unification. Larry Nipp, president of American Power Spraying in Fort Lauderdale, recently announced to *WTT* that he took the first giant step:

"There has been a tremendous amount of interest shown in forming a national spraymen's association. I believe the best way to get the show on the road is for me to get some of these people together."

Committee Formed

Nipp has done just that—and more. He has congregated some 20 contract applicators, who call their new organization the "National Spraymen's Association;" it is currently headquartered in Fort Lauderdale.

This committee has named Nipp acting president, and Craig Anderson, Fort Lauderdale, temporary secretary-treasurer, until the full membership can gather to elect officers.

Nipp told *WTT*: "I know this action may seem presumptuous on our part, but someone had to do something to get the ball rolling. Each Florida member of the board sent Anderson $10 to help defray expenses incurred by the Association. If all interested controllers would do likewise, we would really be on the road to unity."

Association members have drafted bylaws, which they believe will be acceptable to all members. "Of course, the bylaws will be submitted to the full membership for its approval at our national meeting," Nipp explained.

Such a convention is proposed to be held in Cleveland later this year, but no definite plans are in the offing.

Nipp also pointed out that money contributed will help pay for distribution of a monthly newsletter to all charter members; its purpose is to keep applicators abreast of all developments, proposals, etc., in the field.

Ten NSA directors are also members of the Horticultural Spraymen's Assn. of Florida, Inc.: Jack Cuthrell, Jack Cuthrell Co., Fort Lauderdale; Thomas Hamall, Bow Arrow Gardens, Miami; Charlie P. Johnson, Charlie P. Johnson Spray Co., Inc., Miami; Pierre B. and Winnie Nobs, Northwest Power Spray Service, Inc., Miami; Ted Kaplan, King Spray Service, Miami; Marvin Meyer and Raymond Meyers, American Power Spraying of Orlando; Paul Meyers, Florida sprayman; and Lee Horning, Fort Lauderdale applicator.

Rest of the proposed board is: Charles D. Webb, editor, *Weeds Trees and Turf* magazine, Cleveland; William Owen, president, Pesticide Sprayers Assn., Clackamas, Ore.; James Omura, representative, Colorado Applicators Industry, Denver; Robert Cockburn, president, Northwest Chemical Applicators Assn., Everett, Wash.; and industryman Carl Ripper.

Nipp requested that all applications, subscriptions, or any questions about the new organization be mailed to Craig Anderson, Secretary-Treasurer, National Spraymen's Assn., Box A-777, Fort Lauderdale, Fla.

He summed up his feelings like this: "It's my thought that we could charter the NSA in a spot more centrally located than Florida, perhaps somewhere in the Midwest. But no matter where we locate, our main intent is to work with others to establish an organization that will work for the best interests of every sprayman in every state."

WTT Shown in Germany

Weeds Trees and Turf magazine is being put on display at the Frankfurt (Germany) Trade Center Plant and Equipment Maintenance Show, set June 9-16 in Frankfurt. Copies are available for visitors.

A booth sponsored by the U.S. Department of Commerce is displaying *Weeds Trees and Turf*, along with other leading U. S. trade magazines.

Over 250 attended the recently completed 31st annual Iowa Turfgrass Conference, in Ames, Iowa. Pictured are 1965 officers for the Iowa Golf Course Superintendents Assn. From left are: Harold McCullough, superintendent, Oakcreek Park golf course, Des Moines, member of board of directors; Richard A. Burns Jr., parks commissioner and superintendent, Washington Park golf course, Cedar Falls, president; Don Westfall, superintendent, Highland Park golf course, Iowa Falls, vice president; Fred Carey, superintendent, Finkbine golf course, Iowa City, secretary-treasurer; and Harold Kerr, superintendent, Valley Oaks golf course, Clinton, board of directors. This organization presented its 1965 distinguished service award to Herbert Klontz, retired superintendent of Cedar Rapids Country Club in Cedar Rapids. A group spokesman said monthly meetings are planned through November.

How to Use the New Turf Coloring Compounds

(from page 18)

ily come off. Coveralls, which are expendable or disposable, and rubber boots to protect the sprayman, are advised.

Grass should be dry when color spray is applied; while the turf may be moist, there should be no dew or water droplets on grass blades, since these will prevent color from sticking. Spraying can be performed any time the temperature is above 40°F. In the lower temperature ranges above 40°, drying is slower. Normal drying time averages 15 minutes to ½ hour. Some companies suggest that travel on treated grass be avoided for an extra hour after grasses "feel" dry. Formulations should not be frozen. Gradual thawing without agitation will restore frozen colorants.

How To Spray

Suppliers recommend ordinary hand sprayers for small jobs, and power rigs with booms and hand guns for large jobs. One company produces a special applicator for use with its grass colorant.

Even though power sprayers can be used on large jobs, smaller sprayers might help apply spray to delicate areas along walks and near structures.

For large areas, fine mist spray nozzles are recommended to get uniformity of coverage. In close areas, where misting and drift must be avoided, coarser nozzles or reduced pressure can be used to prevent spray on driveways, etc.

Working pressures for both hand and power sprayers should be from 30 to 60 lbs. psi. One manufacturer suggests that nozzles be mounted on a boom 10 in. apart in opposite directions at 10 to 15 degrees off perpendicular to give desired coverage. The boom should be high enough to be sure all grass blades are sprayed from both sides.

For boom rigs, it is advised that booms be rear-mounted so that wheel marks won't show. Some hand-controlled, small power outfits can be pulled instead of pushed. Spraymen with hand guns should work backward, so they do not track through portions which have just been painted.

Mixing instructions vary with the product. In general, however, most recommend basically 1 gal. of finished spray mix to treat each 250 to 500 sq. ft. Sometimes this recommendation is hidden within the directions. One product label may instruct the user to make up a batch of 16 gal. and, on a hasty reading, the user may get the impression that 16 gal. will treat 16,000 sq. ft. Careful examination of the label tells the reader that 16 gal. will treat 16,000 sq. ft. once, but here again, the "desired green intensity" may not be obtained unless "2 or 3" or even "3 or 4" passes with the spray machine are made. This cuts mileage down considerably. Applicators should consider the greatest amount of greenness per dollar spent. Costs per gallon of spray concentrates range from $5 to over $15 per gallon. Prospective users should read label directions and brochures carefully to be certain they know what they are getting.

Directions for most spray concentrates suggest that users partly fill sprayers before adding concentrates, so that the paint emulsion will not adhere to tank sides. Backflow or recycling mixing is not advised because of excessive foaming, but mechanical agitation is recommended.

Since paint residues may tend to harden in the spray rig after application, producers tell users to rinse equipment quickly after use with either plain water, or in some cases, water with some detergent added. Nozzles should receive special cleaning attention.

For very small jobs, a hose-proportioner device may be used to draw and mix concentrate and water; however, these devices normally do not have the desired fineness of nozzle opening and even coverage will require more spray. Thus there may be some waste with spray penetrating into the soil.

What To Watch Out For

In some latitudes, midwinter warm spells may cause grass to begin growth. If the turf has been painted, and growth begins, then stops and enters dormancy again, the spray job will be ruined. Dormant turf will show its "yellow roots."

Some formulations can be combined with small amounts of phenoxy herbicides, such as 2, 4-D. This may be important to applicators in the South and West where dormant lawns weaken and permit broadleaf winter weeds to invade; 2,4-D in a paint mix will destroy most broadleaf weeds. Do not, however, try to mix fertilizers with paint emulsions, manufacturers warn.

Several colorant producers rec-

Northeast Weed Control Conference's executive committee gathers to begin making plans for its 1966 conclave, planned Jan. 5-7 at the Hotel Astor in New York City. Dr. Gideon D. Hill, (seated center) supervisor of herbicide research for E. I. du Pont de Nemours, Inc., Wilmington, Del., is 1965 president of the Conference. Other committee members are: (standing from left) Dr. R. A. Peters, University of Connecticut, Storrs; John E. Gallagher, Amchem Products, Inc., Ambler, Pa.; Eric W. Ashton, Hooker Chemical Co., Niagara Falls, N.Y.; Dr. John Ahrens, University of Connecticut. Seated from left are: Dr. Homer M. LeBaron, Geigy Chemical Corp., Ardsley, N.Y.; Dr. Richard D. Ilnicki, vice president, Rutgers University, Rutgers, N.J.; Dr. Hill; Dr. John A. Meade, secretary-treasurer, University of Maryland, College Park; and Dr. Arthur Bing, secretary-elect, Cornell University, Farmingdale, N.Y.

ommend their products for use on new or model home lawns to "increase the sales potential." Coloring of lawns in a development will certainly make homes appear more attractive; and the idea seems fine if the grass which is sprayed is quality turf to begin with. However, applicators should avoid collaboration with unscrupulous developers who may want to spray a "lawn" of pasture sod and pass it off as quality grass.

Artificial turf-colorant sprays may be considered as an added service for turf maintenance contractors, but as pointed out earlier, color sprays are not a substitute for good maintenance practices.

List of Suppliers

Following is a list of products, manufacturers and their addresses, for those who wish to inquire further about turf color sprays:

Auragreen*; Mallinckrodt Chemical Works, 2nd & Mallinckrodt Sts., St. Louis, Mo. 63160.

C-9*; Cornell Chemical & Equipment Co., 1115 N. Rolling Rd., Baltimore, Md. 21228

Envy*; S. C. Johnson & Son, Inc., Racine, Wis.

Greenstuff*; Krieger Color & Chemical Co., 6531 Santa Monica Blvd., Hollywood 38, Calif.

Greenzit*; W. A. Cleary Corp., New Brunswick, N. J.

Lawn Tint*; Luminall Paints, Inc., 3850 Westside Avenue, North Bergen, New Jersey.

Nu-Type* Green Lawn Spray; The Gregg Co., Box 149, Riverton, N. J.

Stayz-Green*; O. E. Linck Co., Inc., Jct. Routes 3 & 6, Clifton, N. J. 07015

Winterlawn*; Graniteville Co., Graniteville, S. C.

*Trademark names.

Products made by Graniteville Co., Luminall Paint Div., The Gregg Co., and O. E. Linck Co., have the same patent number: 2,870,037.

New Bolens Husky 1000 has extrawide tires to protect turf, 6 forward and 2 reverse speeds.

Two Unusual New Mowers Unveiled by Bolens Div.

Two new "workhorses" designed for professional turf maintenance have been announced by Bolens Div., FMC.

The new Husky 1000, said to be designed for all-day duty on the largest lawns, park areas, and country-sized gardens, is powered by a 10-hp Wisconsin short-stroke, 4-cycle, industrial-type engine. It has a power range lever with six speeds forward and two reverse, and a Bolens exclusive controlled differential for elimination of wheel spinning on heavy jobs.

The compact Estate Keeper is described by the manufacturer as a radical departure from compact tractor design. It can circle trees and shrubs, cut square corners, and edge up to walks.

For complete details, write Bolens Div., FMC Corp., Dept. 78, 215 South Park St., Port Washington, Wis.

An ideal way for lawn spray firms to offer contract mowing at moderate investment is found in Bolens' Estate Keeper, company says.

Meeting Dates

New York State Nurserymen's Assn. Summer Meeting, Cornell University, Ithaca, June 7-8.

Mississippi State Turfgrass Conference, Mississippi State University, State College, June 14-15.

Missouri Assn. of Nurserymen Convention, Holiday Inn, Columbia, June 20-22.

International Shade Tree Conference Western Chapter, Miramar Hotel, Santa Barbara, Calif., June 20-23.

Hyacinth Control Society, 5th Annual Meeting, Seabreeze Holiday Inn, Palm Beach, Fla., June 28-30.

Indiana Assn. of Nurserymen Summer Meeting, Richmond, Aug. 3-4.

Massachusetts Nurserymen's Assn. Summer Meeting, Mahoney's Rocky Ledge Nursery, Winchester, Aug. 4.

Louisiana Nurserymen's Assn. Meeting, Municipal Auditorium, Lafayette, Aug. 5-7.

Southern Nurserymen's Assn. Meeting, Golden Triangle Motor Hotel, Norfolk, Va., Aug. 8-10.

Midwestern Nurserymen, Summer Seminar, J. V. Bailey Nurseries, St. Paul, Minn., Aug. 9-11.

Michigan Assn. of Nurserymen Annual Conference, Kellogg Center, East Lansing, Aug. 11-12.

Rutgers University Lawn & Utility Turf Field Day, New Brunswick, N.J., Aug. 11.

Rutgers University Golf & Fine Turf Field Day, New Brunswick, N.J., Aug. 12.

Texas Association of Nurserymen, Shamrock Hilton Hotel, Houston, Aug. 15-18.

International Shade Tree Conference Annual Convention, Washington-Hilton Hotel, Washington, D.C., Aug. 15-20.

Midwest Regional Turf Field Days, Purdue University, Lafayette, Ind., Aug. 16-17.

Pennsylvania Grassland Council "Forage Progress Days," Milton Hershey Farms, Hershey, Aug. 27-28.

Arkansas Nurserymen's Assn. Annual Meeting, Arlington Hotel, Hot Springs, Aug. 29-31.

Illinois Turfgrass Field Day, University of Illinois, Urbana, Sept. 10, 13.

Penn State Turfgrass Field Day, on campus, University Park, Pa., Sept. 15-16.

Tennessee Nurserymen's Assn. Convention, Holiday Inn, Nashville, Sept. 19-20.

Suppliers Personnel Changes

Amchem Products, Inc., Ambler, Pa., has named J. Lee Van Deren agricultural chemical sales representative in southern California, Arizona, and New Mexico. Van Deren was previously manager of the Marana-Tucson plant of Best Fertilizer of Arizona.

John Bean Div., FMC Corp., releases a joint statement issued by Tracy Carrigan, general manager, and Coleman Buford, general sales manager, announcing Buford's plans to retire July 1, 1965, after 29 years service with the company. Assistant agricultural sales manager John C. Fegtly has been named agricultural sales manager to succeed Buford. He joined the organization last year.

Heyden Newport Chemical Corp. has acquired the services of Dr. Richard J. Marrese and Robert Lindemann, both of whom were formerly associated with Diamond Alkali Co., Cleveland, O. Marrese will assume the new position of coordinator of agricultural chemicals development. Lindemann has been assigned to Heyden's synthetic program as a chemist investigating new materials and testing new compounds relating to agricultural herbicides. In another field move Ron Cheves has been named Southwest regional sales manager for agricultural chemicals. Cheves makes his headquarters in Houston, Texas, and will service accounts in Texas, Oklahoma and New Mexico. He was formerly with Rohm & Haas.

Smith-Douglass Co., Inc., recently promoted Robert C. Richardson to district sales manager, nonfarm sales, in the Midwest. Richardson formerly supervised Smith-Douglass activities in Michigan. In another move Albert L. Fary, nonfarm sales manager, announced that Stark Royall is now district sales manager in the Southwest. In his new assignment, Royall will supervise and develop Nutro sales in Oklahoma, Kansas, and Texas.

U. S. Borax Technical Department vice president Dr. D. S. Taylor, announces appointment of Grover G. Collins to the position of executive assistant to the vice president, Technical Department. George W. Griggs advances to manager of new product development, the post vacated by Taylor.

USDA Registers Thiodan

Damage to ornamentals by rose chafer beetles can now be halted with the use of Thiodan (endosulfan) insecticide, Niagara Chemical Div., FMC Corp., recently announced. Thiodan has received U.S. Department of Agriculture registration for use in controlling this pest on bushes, shrubs, and flowers.

The new chafer control should be applied to ornamentals at a half pound actual Thiodan per 100 gallons of water. Application should be made when insects first appear and then be repeated as often as required. Thiodan was previously registered for control of aphids, whitefly and cyclamen mite.

Turf experts, Robert T. Jones (left), one of the nation's foremost golf course architects, and his coworker, Dr. O. J. Noer, agronomist with Robert Trent Jones, Inc., Milwaukee, Wis., admire new "Tifdwarf" grass, recently released by experiment station in Tifton, Ga.

Hyacinth Controllers Plan Field Trip, Actual Herbicide Application June 28-30

Hyacinth Control Society delegates will get a firsthand look at aquatic weedkillers actually being applied during that organization's 5th annual get-together, June 28-30, at Seabreeze Holiday Inn in Palm Beach, Fla.

Afternoon of the first day is set aside for this demonstration at West Palm Beach field station, Central and Southern Florida Flood Control District.

Featured speakers and their topics Tuesday, June 29, will be: O. C. White, field technical specialist, California Chemical Co., San Francisco, "Status Report on Diquat and Paraquat As Aquatic Herbicides"; Roy R. Younger, aquatic biologist, "Pennsalt's Aquatic Weed Program"; and A. Tabita, Corps of Engineers in Jacksonville, "Control of Obnoxious Aquatic Plants in the Southeast."

How private companies can effectively and profitably use aquatic weedkillers will be explained by Charlie Johnson, president, Charlie P. Johnson Spray Co., Inc., in Miami. Johnson is a longtime commercial applicator.

A panel discussion on perennial aquatic control headaches, incorporating questions and answers from the convention floor, will climax Conference activity, Wednesday morning, June 30.

Those desiring further details of the Hyacinth Control Society Conference can write James D. Gormon, Mosquito Control Director, County of Hillsborough, P.O. Box 1731, Tampa, Fla. 33601.

LBJ May Attend ISTC

President Johnson has been invited to the International Shade Tree Conference's 41st annual convention, planned Aug. 15-19 at the new Washington-Hilton Hotel in Washington, D.C.

Edward A. Connell, public relations chairman for the Conference, said the chief executive might be on hand for the meeting's highlight . . . planting and dedication of a scarlet oak tree.

A unique corollary feature, now being arranged, is the simultaneous planting of trees on each of the 50 states' capitol grounds. For details, write Edward A. Connell, chairman, Public Relations Committee, International Shade Tree Conference, c/o City of Stamford, Conn.

Golf Cart Damage to Turf Discussed at S.E. Conf.

A discussion of the ways golf carts damage turf highlighted activities at the 19th annual Southeastern Turfgrass Conference, concluded recently in Tifton, Ga.

"Number of motorized carts in the nation has grown from 1,000 in 1952 to 100,000 in 1962," Tom Mascaro, president of West Point Products Corp., West Point, Pa., pointed out to some 135 delegates. He called for more efficiency in golf course management. A complete job, such as good fertilization, irrigation, and aeration of soil, will help offset compaction and other harmful effects of cart traffic.

Another important talk came from Dr. Glenn W. Burton, geneticist at Coastal Plain Experiment Station in Tifton. He described a new grass, "Tifdwarf," which he said has just been released to certified seed growers by the station. The new grass is thought to be a Bermuda mutation.

Other subjects discussed during the three-day gathering were irrigation equipment and its use, water movement in soil, mechanics of fertilization, soil problems, and overseeding Bermuda grass with cool-season grasses.

Va. Turfgrass Council Reelects Watson

A. L. Watson of Richmond was reelected president of the Virginia Turfgrass Council as more than 150 attended the 5th annual Virginia Turfgrass Conference in Richmond.

Also named to serve another term were John F. Cook, also of Richmond, vice president; and R. D. Cake, Norfolk, secretary-treasurer.

Watson, supt. of Greenwood Memorial Gardens, and also president of the Central Virginia Turfgrass Assn., presented Cake with a five-year service award during the Conference banquet.

Featured banquet speaker was Dr. E. W. Aiton, director of the Agricultural Extension Service at the University of Maryland, College Park, Md.

Classifieds

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

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

HELP WANTED

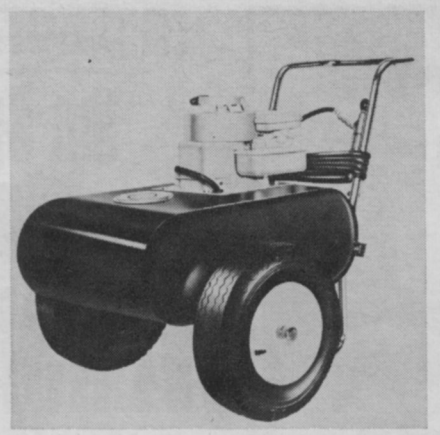
BRANCH MANAGERS, Connecticut through Virginia. To head operations for progressive national corporation specializing in professional management of turf, shrubs and ornamentals. Education, experience and/or interest in turf, horticulture or related fields desirable. Expert sales and technical training by top men in the field. Extraordinary opportunity for advancement. Excellent starting salary plus substantial commissions. Must be willing to relocate if necessary. Send resumé to: Charles W. Ridinger, Director of Personnel and Training, Turf Kings, Inc., 46 John St., Yonkers, N.Y. 10702.

GRADUATE FORESTER to act as a contact man and troubleshooter for an outfit that has been in business over thirty years. We operate in five eastern states, giving complete woody growth control for utilities. Send complete particulars in your first letter, such as formal education, experience, marital status, salary expected, etc. Write Box 8, Weeds Trees and Turf magazine.

FOR SALE

TREE SPRAYING EQUIPMENT: One three-piston, 60-gpm, Hardie high-pressure pump, $400; 400-500 ft. ¾-inch high-pressure hose, used one season, $400; one complete tree spraying unit (37-gpm pump, 500-gal. tank with above hose, two Nelson long-distance guns, Leroy industrial engine), $1900. P. O. Box 71, Commack, L. I., N. Y.

Classified ads in *Weeds Trees and Turf* Bring Results . . . Use Them!



Large rubber wheels permit easy handling.

New Multiuse Sprayer Developed by Oakes

Contract applicators, nurserymen, and all sprayers of chemicals now have the opportunity to use a newly designed, multiuse power sprayer marketed recently by Oakes Mfg. Co.

Boasting a porcelainized 20-gallon steel tank, the new "2025 Trojan" is said to be completely portable. Manufacturers also claim the tank will not be pitted by any insecticide.

Powered by a 2½ h.p., four-cycle motor, the Trojan comes equipped with large rubber wheels, allowing easy manipulation of the unit. It has a chrome-plated steel handle which serves as a parking stand.

Another important feature of the new sprayer is its centrifugal Fiberglas pump which assures jet agitation and 60 to 70 pounds of spraying power.

Further information on the sprayer may be obtained by writing Oakes Mfg. Co., FMC Corp., Tipton, Ind.

Advertisers

INDEX TO ADVERTISEMENTS

Prentiss Weedkillers New

Twenty new weed and brush killers are being added to Prentiss Drug & Chemical Co. products.

New line includes 2,4-D and 2,4,5-T herbicides, which are sold under brand names of Prentox Weedicide and Prentox Brambicide.

Those who want more details can write to Prentiss Drug & Chemical Co., Inc., 101 W. 31st St., New York, N.Y. 10001.

Western Shade 'Treers' Congregate This Month

Western Branch of the International Shade Tree Conference will hold its 32nd annual get-together June 20-23 at the Miramar Hotel in Santa Barbara, Calif.

"Trees—A Most Valuable Asset" is the theme of the four-day conclave, which will be climaxed the evening of June 23 with installation of officers, followed by a dance and entertainment. For details, write C. E. Lee, Secretary-Treasurer. P.O. Box 351, Los Angeles 53, Calif.

Hoover Acquires Lencor Mfg.

Hoover Ball & Bearing Co., Ann Arbor, Mich., has purchased the assets of Lencor Mfg. Co., Lenox, Iowa, producer of dry fertilizer spreaders and other agricultural equipment.

Lencor products will supplement Hoover's Tote Systems Division.

Trimmings

Turf Pioneer Dies. WTT learned recently of the death of Professor Lawrence Sumner Dickenson, one of the leading turf authorities in the nation. In 1958, the veteran agronomist retired from the University of Massachusetts in Amherst, where he led research in golf greens and other fine turf for 45 years. He was among the first to establish the abbreviated 10-week seminars in turfgrass management which have been such a boon to turf professionals who haven't the opportunity to get a degree before starting to work. He lived in Amherst all his life.

* * *

The Spokane Word. *Bill Senske, who runs Chemical Weed and Pest Control in Spokane, Wash., is to be given a word of praise for his latest mailing piece which we just received. Bill's services range from lawn spraying to fertilizing to tree care, with contract mowing thrown in for good measure. His latest brochure features catchy names for his residential service contracts, names no doubt designed to appeal to Mrs. Homeowner. Examples: Ugly-Slug control (twice a season); Lucious-Lawn Service (complete fertilization); Dandy-Lawn Spray (for dandelion, plantain, thistle); and so on. Bill, a pioneer in this industry, keeps moving ahead!*

* * *

Shaw Enough! News is out that longtime industry friend and noted researcher Dr. Warren Shaw, who has been leader of weed investigations in the USDA Crops Protection Research Branch, has been named Acting Pesticides Coordinator, Science and Education, in the office of the Secretary of Agriculture.

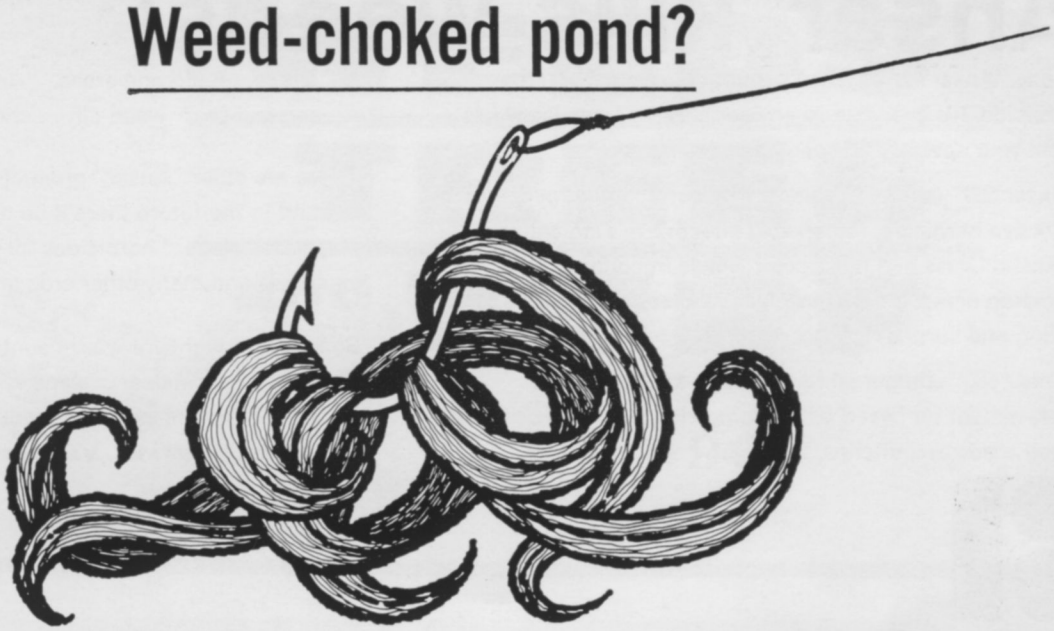
* * *

Ardor for Arbor Day. *One of the most enthusiastic undertakings in the hundreds of Arbor Day projects which went on around the country this spring was the countywide plant-a-tree program held in New City, N. Y. For the third consecutive year, all fourth graders in Rockland County's public school received sugar maple seedling trees to plant in their own yards (trees were donated by the county's 10 Rotary Clubs). We learned of the project through cosponsor Rockland County Extension Service, where county agent Paul A. Lutz has worked happily with this endeavor for three years. To date, 14,000 trees have been planted!*

* * *

Colburn Cops Commendation. Every year on Foresters Day at the University of Minnesota in St. Paul, an Outstanding Achievement Award is presented by the Forestry Club on campus to the Minnesotan who's made the most significant contribution to forestry during the year. Proud recipient of the prize this year is Floyd C. Colburn, Itasca County extension forester who graduated from the U. of Minn. in 1934. He's been with the Extension Service since 1947, and has also received the Superior Service Award from the USDA. We join with industrymen in the land of 10,000 lakes in congratulations!

Weed-choked pond?



FIGHT BACK WITH ORTHO®!

In just ten days, new ORTHO Diquat can give you a clean, weed-free pond

New Diquat makes short work of the common water weeds—water lettuce, water fern, pondweed, coontail, Southern Naiad, water hyacinth and Elodea. Diquat is easily applied by spraying or injection under the water surface. The weeds absorb it, and quickly wilt, collapse and die. (For free-floating weeds, use a standard sprayer.)

Diquat is non-hazardous, used as directed. It would take 20 times the maximum recommended dosage to be at all harmful to fish. It's inactivated immediately on contact with soil, and it doesn't build up in water. In just 10 days (be sure to follow label directions), you can have clear, clean water for irrigation, watering your animals, swimming, or even a fishing hole.

"Helping the World Grow Better"

CALIFORNIA CHEMICAL COMPANY, ORTHO DIVISION, 200 Bush St., San Francisco 20, California

ON ALL CHEMICALS, READ CAUTIONS AND DIRECTIONS BEFORE USE.

Ansar® kills weeds!

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

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

"Ansar 560" is a general herbicide—a long-awaited replacement for 'weed oil.' It completely eliminates weeds along roadways, ditches, fence rows and around buildings and storage areas. "Ansar 560" is more economical than weed oil. . . and far more effective.

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

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

THE ANSUL COMPANY, MARINETTE, WISCONSIN.

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