

1. Legislation is needed when you are subject to oppression or discrimination that is contrary to what is best for the industry or the public interest. Examples of such oppression are ordinances of municipalities which restrict the use of certain toxic pesticides to the point where the applicator cannot guarantee consumers reasonable success from his services. Legislation is then required to repeal these ordinances.

2. Legislation is needed when relief from an obvious injustice cannot be obtained either through regulation, mutual understanding, or from the courts.

3. Legislation is needed when it is desirable for an industry, a public agency, and the general public to sit together in an advisory or technical capacity to see that interests of the industry, the state, and the public are represented and protected by decisions affecting any of the three.

#### Keys to Promoting Your Bill

After you are sure a need for legislation exists, certain ideas should be remembered when you draft necessary proposals. Be specific and accurate. Name the type of infringement or suppression of rights which concerns you. For example, if your problem pertains to particular chemicals, name them specifically.

Another point to keep in mind is that any statute is always subject to interpretation by the court should a citizen or public official take exception to it. Make sure at the outset that any proposed legislation is on firm legal and constitutional grounds, and clearly expressed.

Legislation is a big field; there are some things that can be accomplished and others which are out of reach. If you cannot get everything you want in a package deal, strive for as much as possible. Be *happy* with this but not *satisfied*, and try harder next time. On the other hand sometimes "half a loaf" is *not* better than none at all. If you cannot get enough to do a rea-

sonable job, it is better to back up and start again.

The mechanics of getting a bill through the legislature can be handled in many ways. Meet the lawmakers. Do this early, before the pressures of approaching legislative sessions begin to take time away from both you and the legislators. You will be less of a nuisance lobby to the lawmakers if you avoid a last-minute appeal.

Personal contact with the legislators is an excellent way to gain support. Reasonable discussion without undue pressure will do much more good than floods of form letters and telegrams. Individual, personal letters are good, but stay away from anything that looks like group pressure or coercion.

Some legislators will show a real interest and cooperative attitude. These key interested men are good prospects to sponsor your bill, and to act as floor leaders for it. If you can gain two or three positive voices on the floor, and especially in the committees considering your legislation, half the battle is won.

After a bill is introduced and assigned to a committee, keep in contact with the clerk of that committee. Ask him to notify you when the bill comes up for consideration. Be ready to appear at the hearings prepared to testify *with full facts and data* on any portion of the legislation. All of this may appear to be useless trouble and bother, but it is how our lawmakers work and this is the only way to do business with them.

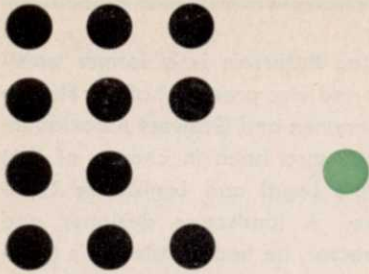
#### Stop Bad Legislation, Too

While it is important to pass *good* legislation, equal thought must be given to the defeat of bad legislation. In the flood of bills introduced every year, sometimes a potentially harmful proposal may slip through. The only solution is to catch such bills *before* they become law. Legislatures publish a daily journal of events. Get a copy from a member of the lawmaking body and study it carefully. This is the best way to be alert to bad deals in the making.

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**Author Peterson** is a former president and vice president of the Florida Nurserymen and Growers Association; he has also been in charge of that group's Legal and Legislative Committee. A landscape designer and contractor, he heads Peterson's Nurseries in Lakeland, Florida. Although his activity has been confined primarily to the Sunshine State, remarks in this article have value for industry-men from Maine to California.

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# WHY JOIN A NATIONAL ASSOCIATION OF SPRAYMEN?

By LARRY NIPP

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At its annual convention in Ft. Lauderdale November 5-7, the Horticultural Spraymen's Association of Florida will attempt to establish a national association of weed, turf, and tree spraymen. This article is an examination of some advantages inherent in belonging to such a group. There are several other regional spraymen's organizations around the country, some of which have also considered a national association. *Weeds and Turf* does not support one organization to the exclusion of another, but is striving simply to present thorough news coverage of all such endeavors, in the belief that a strong national will help immeasurably to further industry interests in general. Also extremely active is the Northwest Chemical Applicators Association, which will hold its annual conference November 30 and December 1 in Yakima, Washington. A letter from the NCAA president, supporting the eventual establishment of a national, appears in this month's *W&T Mailbox* (page 8).

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LET'S list some of the reasons why some people do not choose to join an association:

"Don't like the people in it."

"An association can do nothing for me."

"It's run by a clique."

"It will cost me money."

That about covers most reasons; so let's now take each one and analyze it.

First, no one in his right mind joins an association because he likes the people in it. This is not the purpose of such a group. However, you will be surprised how easy it is to get to like the people in a trade organization—especially when you have so much in common. An association can do much for you. Any time a group of men in the same business as you get together, you have only to keep your ears open and you are bound to learn something. You will find that your immediate competitor will not break his neck to give away his trade secrets, but men from other parts of the state or country will gladly help you with your problem. It may be that he, or they, learned the answer from *your* competitor.

#### Must Give to Receive

Let me say you must be willing to give in order to get from any association. As for the "clique," let me also say this—I have been a member of three associations in my life; I have not noticed anything which can honestly be termed a clique. The man who complains about closed circles of members is usually the same man to refuse every office in the association. He will refuse to serve on any and all committees, and at the meetings he will not voice an opinion. But, after the meeting, he will find fault with everything that took place. So-called cliques are composed of men who will do the job and take the abuse when things go wrong. You will find such groups more than willing to have new blood take over.

As for the cost of belonging, it does not cost—it pays. The cost is returned many times over. You will learn more about your

business just sitting around talking to some other member than you can learn from any book.

#### Association Adds Prestige

The first year the Horticultural Spraymen's Association of Florida held its convention the equipment show alone was worth the price of 10 years' dues, in my opinion. The question and answer panel part of the program was in itself worth more than several years' dues. Now that we in Florida are about to form a national association, the opportunities to learn will be even greater. Memory is short, but all members of the Horticultural Spraymen's Association of Florida probably remember it was through the efforts of that organization that legislation outlawing or restricting spraying in about 10 cities in Florida was defeated. It was through the efforts of that same association that it was brought to light that members were getting bad materials. Often overlooked is the fact that to belong to an association adds prestige to your company in the eyes of the public, and gains public confidence. The public knows that a company joins an association in an effort to uplift the industry.

I believe weed, turf, and tree spraymen can form the largest association of its kind in the world; and I believe this association can benefit us all in many ways. One way will be to stand up to adverse legislation, which I am sure will crop up in many states and many, many communities. Our annual conventions can feature large equipment shows such as we will have this year at the Horticultural Spraymen's Association of Florida convention in Fort Lauderdale, Florida, November 5 through 7. Also, a discussion on various types of contracts and prices at one of the sessions of our convention will do much to help the industry on a national scale. One should bear in mind that every profession and every business has its association composed of members from every branch of the profession or business.

Other benefits, such as an in-

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**Author Nipp** is a past president of the Horticultural Spraymen's Association of Florida, and runs American Power Spraying in Ft. Lauderdale. Currently he is in charge of the HSAF program for establishing a national spraymen's trade association. Interested readers may write him at 3675 S.W. First Street, Ft. Lauderdale. Those who wish to correspond with Robert B. Cockburn, president of the Northwest Chemical Applicators Association, may write him at 1523 63rd Street, Everett, Washington 98202.

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urance program through the association to lower our insurance costs, are possible. The many ways you can benefit from a trade group are too numerous to discuss here, but let me say that the good far outweighs the evil in any association. I hope *Weeds and Turf* readers will join us in Fort Lauderdale on November 5 to 7 at the world-famous Pier 66 Hotel and help us get started on this venture!



# Texas Know-how Creates Homemade

By PAULINE NEFF

**A** LOT of ingenuity on the part of a Dallas nurseryman has turned a used gasoline tank and a small investment into an all-purpose spraying device. Placed on a two-ton truck, it furnishes him with five different sprays or fertilizers on the job at the turn of a valve.

"Our spray truck is the most profitable piece of equipment in the business not only in the

amount of time saved by spray personnel—but because it looks professional. Its appearance brings us lots of business," said Jack Jones of Southwest Landscape Company.

Total cost was \$5,000 including the \$4,000 paid for the truck. Jones said the total cost could be cut to as low as about \$1,000 by using a secondhand truck.

"I wouldn't take three times

what I paid for it, now," Jones says.

Ten years ago Jones used trailers with individual motors for spraying. This meant he had to go back and forth each time he needed a different spray. And the motors were constantly breaking down.

Then he hit on the idea of using an old gasoline tank for a spraying device. He learned these tanks are built with from two to five compartments—and that oil companies sell the old ones at junk prices. He bought one with five compartments—one 250-gallon, two 200-gallon, one 150-gallon and one 175-gallon compartment. Then he asked a spray expert for advice on how to build a spraying device.

"He said it couldn't be done," said Jones. Undaunted, he set out to prove it could.

After paying \$100 for the used tank, he bought a two-ton truck. Next he bought a Myers Triplex pump for \$650.

"I used a pipe-fitter, a welder, a sand-blaster, a garage mechanic—and it took me 2½ months to finish it," Jones reports. "But when we got through, it worked—and I've never had any trouble with it."

The power take-off was tied onto the truck's jack-shaft by a hanger bearing. The pump was mounted at the back of the cab. Lines are tied in through a system of valves at the back of the truck.

When M. Doster brings Southwest Landscape's spray truck into a neighborhood, other calls for service follow because of the varied maintenance jobs the single rig can perform.



## Spray Rig

The pump can produce from 10 to 1000 pounds of pressure. A mechanic was used to set the rpm's on the truck motor so that the pump works efficiently while the motor idles. The mechanic marked this setting on the carburetor.

Jones uses a 300-foot hose and a Bean pistol-grip gun. With this length hose he doesn't ever have to put the truck in a customer's yard. And when he wishes to change sprays, he simply shuts off one valve and opens another.

Liquids are carried in saddle pockets located on the side of the tank. Power equipment is carried at the rear end of the tank where it can be locked.

Jones fills the compartments with water each night by running hoses into the openings located at the top of the tank. This takes about 30 minutes, though it could be much faster using a fire hydrant. The truck has another valve which may be opened to create a suction and draw up water by closing the other valves at the same time—though Jones doesn't often use this method.

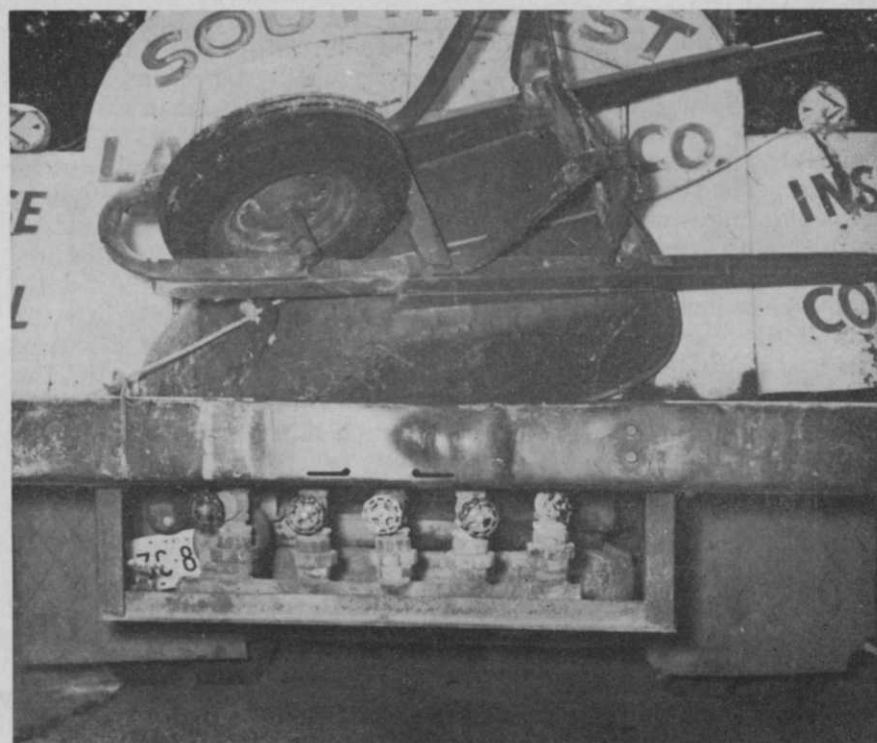
Maintenance costs have been minimal. Basically he keeps the pump oiled and the motor greased. He has the motor overhauled once every two to three years—as opposed to the once-a-month overhauls on the little motors he previously used. The

*(Continued on page 22)*



**A 300-ft. hose allows sprayman Frank Guerrero to spray entire yard without actually putting the truck on customer's lawn.** Guerrero has also been trained to help with tree maintenance jobs.

**Five valves at the back of Southwest Landscape's truck control 5 compartments in the tank.** Tools are carried inside the old tank (note doors).





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## Turfgrass Portraits IV:

# "Wintergrass"

By DR. ROBERT W. SCHERY

Director, The Lawn Institute  
Marysville, Ohio

This is the fourth in a series of nine articles on the basic traits and maintenance procedures for common turfgrasses. Next month author Schery discusses Bermudagrass.

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THERE'S no such thing botanically as "wintergrass."

The term is used particularly in the South, for lawngrasses interseeded into the permanent turf (usually bermuda), to provide attractive green cover during winter. Lawngrasses adapted to cool weather are chosen. Whether they be annual or perennial makes no difference, since their handling is as an annual; come spring they are expected to gradually thin, as the permanent turf revives with warmer weather. The season for wintergrass planting is usually October in the South, onset of bermuda dormancy. The wintergrass should be at its best from Christmas until March, after which there is gradual transition back to bermuda for the summer. Of course many of these same "wintergrasses" are sown in early autumn in more northerly climates to bolster thin turfs, with promise of persisting there.

Traditionally, annual ryegrass has been used to overseed southern turfs. By the pound ryegrass is inexpensive (although more seed ordinarily must be used than with types having a greater

seed count). The large seed is easily planted, sustaining vigorous seedling growth without a great deal of attention. But recently research has taken a second look at winterseeding, wondering whether other lawngrasses might not in many cases be more satisfactory than ryegrass. Such research has centered chiefly on golf turf, where the demand for excellent putting surfaces is great when the winter tourist season is at its height. The findings, of course, spill over to general turf; Mississippi State University especially has checked winterseeding for turfs maintained like a home lawn.

There has been lingering dissatisfaction with ryegrass through the years, because of its aggressiveness, and its failure to give ground gracefully in spring as the bermuda revives. Many years ryegrass is aggressive late into spring, then melts away suddenly; the bermuda has been set back by this late competition, and an ugly transition period ensues at the very height of the attractive spring season. Also, annual ryegrass grows vigorously, requiring more mowing than might other species. Its color is yellowish, contrasted to the bluish green of fine fescues and Kentucky bluegrass (the color usually preferred). And to top it off in recent years, with freezing south to the Gulf, ryegrass has often killed out. Ryegrass will by no means be abandoned, and it seems to suffer less from these faults in the Southwest than the Southeast. But for the more meticulously kept turfs, there is increasing interest in mixtures of fine-textured northern grasses such as the Kentucky bluegrasses, fine fescues, and bentgrasses discussed in previous numbers of this series, and in *Poa trivialis* (rough bluegrass).

### General Observations

Timing is important wherever and with whatever grass winterseeding is practiced. If winterseeding is carried out too soon (or autumn growth of bermuda is lingering), a new seeding may be smothered. It is especially important with superior grasses

such as fine fescues, bluegrass, and bentgrass, to initiate planting just as the permanent grass slows down for winter dormancy. Ryegrass' biggest advantage lies here, in aggressiveness that enables it to grow roughshod whether the timing is quite exact or not.

Timing continues important through the winter, since differing grasses have differing peaks of performance. The fine fescues (varieties include Chewings, Illahee, Pennlawn), and *Poa trivialis* are almost as quick to present a winter cover as is ryegrass, and are possibly not so susceptible to juvenile diseases. Kentucky bluegrass is next in the seasonal sequence, spreading to a beautiful tight turf in mid-winter. Most bentgrasses are slow, but may merit inclusion in winterseeding mixtures because of their fine performance late in winter. With this variation in seasonal performance, it's easy to understand why mixtures of grasses, rather than individual species, are increasingly recommended. Almost all mixtures of the finer grasses contain a fine fescue base for excellent color and relatively quick start.

Southern turfs are usually started from living shoots or sod. There is increasing interest in seeding lawns, as has long been customary in the North. As more bahia, zoysia, centipede, and other southern seed types become available, some of the finer "wintergrasses" well may be included to provide an "any-time-of-the-year" blend. There are definite economies, flexibility, and maintenance advantages, to being able to seed a lawn and bolster it with seed thereafter. Indeed, this would seem a splendid opportunity for professional lawn services, rounding out the slack season while providing greater winter attractiveness to an increasingly sophisticated South.

Winterseeding interest may be divided as for: 1. golf greens, and 2. general turfs (including lawns and fairways). Until recently, research has centered on the intensively managed golf green. Widespread testing, es-



pecially at state universities and experiment stations, has ensued. Max Brown's master's thesis (University of Florida) deals with winterseeding of Tifgreen bermuda, the universal golf green variety in the South. The most intensive study on general turf is probably William James Gill's (Mississippi State University) thesis, "An Evaluation Of Overseeding Procedures For Southern Lawns." Conclusions from these studies will be worth quoting in the following discussion.

### Golf Greens

The advantages and disadvantages of ryegrass, long used for winterseeding golf greens, have been mentioned. In some instances as much as 200 lbs. of ryegrass/M is used (the average is estimated 50 lbs.). Only by keeping the ryegrass "tight" is the putting surface acceptable. Even then ryegrass is said to be "slow" because of succulence. In most instances golf experts have rated the fine fescues, and later in the season Kentucky bluegrasses or bentgrasses, as superior to ryegrass for putting surfaces.

The Milwaukee Sewage Commission organized the testing of seeding mixtures (including a blend furnished by the Lawn Institute) on a wide range of golf courses. The Milwaukee people favor mixtures containing *Poa trivialis*, usually in combination with fine fescues and other fine-textured species. Probably any of the eight combinations scrutinized during the '63-'64 season would rate "tops," compared to desultory ryegrass turfs of a few years ago. The Lawn Institute blend was a combination of two fine fescues, two Kentucky bluegrasses, and Highland bentgrass. *Poa trivialis* was left out because some people object to its yellowish cast, and because the seed (imported) frequently contains winter weeds.

There have been some tests with growth retardants (maleic hydrazide, CCC, Phosphon), for inhibiting growth and perhaps inducing early dormancy in ber-



Winterseeding test plots, such as these at the University of Arizona, help turf professionals discover the best adaptable species.

mudagrass. Some injury to the bermuda has occurred, possibly due to careless application; in middle latitudes there have been reports of definite injury to U-3 bermuda. Successes have been reported, too, although it is uncertain whether the advantages obtained are sufficient to warrant special chemical treatments. Perhaps improved seeding procedures can do as much? Golf courses are accustomed to thinning turf (aerifying, vertical mowing, etc.), and have the equipment for this. Such preliminaries to winterseeding, followed by topdressing and watering, make for little difficulty in establishing wintergrass under this professional care.

### General Turf

For lawns, fairways and similar turf, the specialized equipment used on golf greens is not available, nor the intensive techniques possible. The main needs are for easy autumn establishment, and minimum attention through winter. Ryegrass is good for the former, the finer-textured species better for the latter. If ways can be found to keep winterseeding simple, inexpensive—and this knowledge

becomes widely diffused—winterseeding of southern lawns should become popular. In some sections of the South, less than 1% of the lawns are winterseeded; in other sections, as the posh suburbs around Atlanta and Phoenix, 50% of the lawns may be winterseeded. The practice might seem most appealing in the upper South, where bermudagrass is dormant nearly five months of the year.

Mississippi State University research indicates that for establishing wintergrass the permanent turf should be mowed low prior to seeding. "Low" means in the neighborhood of 1 inch, as compared to a customary height of 1½ or 2 inches. Of all procedures, including vertical thinning, topdressing, etc., low mowing proved the most important.

The same grasses, preferably in mixture, that do the job on golf greens, suffice for lawns. With proper techniques it appears possible to seed quality grasses (centering on the fine fescues) almost as readily as ryegrass, at a 5-lb./M seeding rate. Once established, these offer darker color, greater hardiness, less need for mowing, better spring transition, and so on.



# Undaunted by Dora, Delegates at Auburn Turf Course Study Soil Chemistry, Learn of Fertilizer Needs

By R. E. STEVENSON

Associate Editor, Department of Publications  
Auburn University, Auburn, Ala.

Despite threatening weather from hurricane "Dora," about 100 members of the Alabama-Northwest Florida Turfgrass Association were on hand for the fifth annual Turfgrass Short Course September 10-11 at Auburn University in Auburn, Ala. And those who attended the sessions went home with a wealth of information to use in establishing and maintaining turf.

Major principles of soil science that must be understood for proper turfgrass fertilization were covered by Dr. R. D. Rouse, Professor of Soil Chemistry at Auburn University Agricultural Experiment Station. He said soil is a complex physical, chemical, and biological system that must be clearly understood if it is to be kept in best condition for growing turfgrasses.

As explained by the soil chemist, chemical function of the soil is to supply in useable form nitrogen, phosphorus, and potassium (major elements), plus calcium, magnesium, sulfur (secondary elements), and manga-



Among those taking part in the September 10-11 Turfgrass Short Course at Auburn University were, left to right, Dr. D. G. Sturkie, Agricultural Experiment Station scientist and chairman of the program committee; James E. Moncrief, U. S. Golf Association agronomist, Athens, Ga.; George Cobb, Greenville, S. C., architect; and Association president G. E. Godwin, Birmingham Country Club.

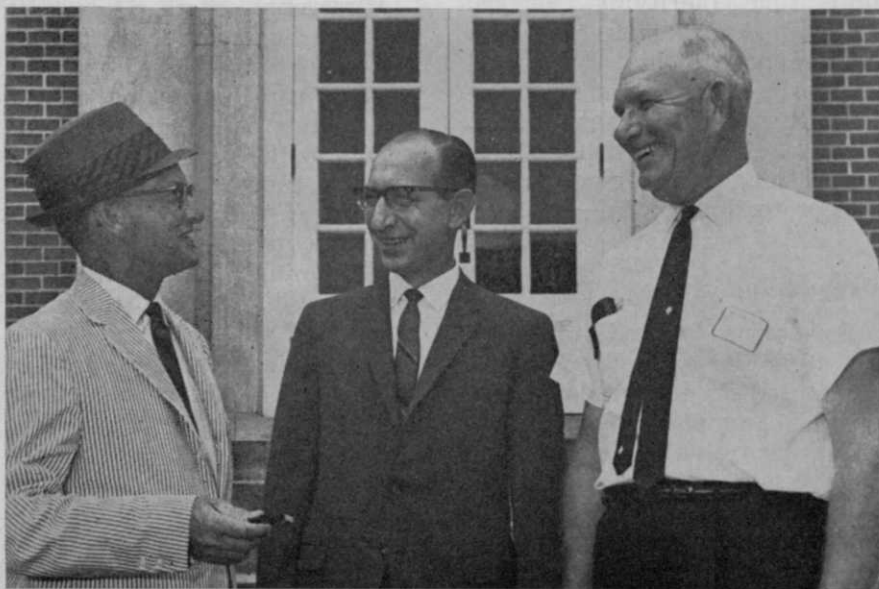
nese, iron, copper, boron, zinc, molybdenum, and chlorine (micronutrients). Although some soils have enough of these 13 elements, most turf areas in the South are deficient and must have fertilizers added. This is especially true for areas that have been prepared for special uses, like golf greens, he pointed out.

Since the fertilizer elements can be bought and applied, the next need is for soil that can hold these materials and release as needed by plants. Different soils have different holding capacities, with the clays and organic materials having greater capacity than sandy soil. This explains why some clay and organic matter is added to sand in preparing greens topsoil.

Another important factor introduced by the scientist concerns methods by which plants obtain nutrients from soils. The practical aspect of this is that all the processes by which large amounts of phosphorus and potassium are obtained require water, a porous soil, and a supply of the 13 elements in the soil. Since all 13 elements must be contained in the soil, this makes soil preparation and soil composition important.

## Soil Needs Large, Small Pores

Correct composition calls for a soil that has enough large pores to permit rapid entry and percolation of water, small pores to hold water needed by plants, and good tilth to permit easy root ramification. Rouse said



Officers were welcomed to Auburn by Dr. Ben T. Lanham, Jr., Associate Director of Auburn University Agricultural Experiment Station. These officials of the Alabama-Northwest Florida Turfgrass Association are (left to right): Association president G. E. Godwin, Birmingham, Dr. Lanham, and Mike Johnson, secretary, also from Birmingham.



these conditions are met by having the proper mixture of sand, silt, clay, and organic matter.

Chemically the soil needs a capacity to hold and supply required elements and without other elements in undesirable amounts. Fortunately, he added, good physical conditions provide the framework for good chemical properties.

From a chemical standpoint, soil preparation is highly important. The researcher stressed that at preparation is the only time to correct acidity. Lime applied after planting cannot be mixed with soil and stays near the surface where it does little good. The same thing is true of phosphorous. Most soils need this element, he stated, and it should be mixed with the sub-soil to promote deep root growth.

The importance of an available supply of all essential elements as soon as grass begins to grow was brought to the group's attention by Dr. Rouse. For soils limed with dolomitic lime and getting phosphorous and potassium incorporated according to soil test, about the only need will be for nitrogen and sulfur (most soils have enough micronutrients). And, he added, sulfur will be supplied if 18-20 per cent superphosphate was used to supply phosphorous. Adequate amounts of nitrogen must be available as soon as root growth begins.

#### Nitrogen Most Important

Nitrogen is the most important element for maintenance, with potassium second. Phosphorous and sulfur needs are about half as high as for potassium. Micronutrients will seldom be needed if the soil pH is favorable and major nutrients are applied in correct amounts. Rouse said the Auburn nitrogen recommendations were sometimes thought to be too low. He explained that the suggested application of 1 lb. of N per 1,000 sq. ft. is recommended because this is about as much as can be readily taken up. Little leaching will occur even when this size application is made every 2 or 3 weeks.



Latest developments in fertilizing turfgrass was the topic of this discussion during the Sept. 10-11 Turfgrass Short Course at Auburn University. Dr. R. D. Rouse (extreme right), soils researcher of the Agricultural Experiment Station, reported results of latest research to, from left, Jim Pursell, Sylacauga; William Nordan, Abbeville; and J. Cooper Marcock, Jr., Atlanta, Ga.

Differences between solid, liquid, granular, or pulverized fertilizers are relatively unimportant, Rouse told the group. The choice should be based on equipment available, cost, and personal preference. The major difference is in ease of burning, with granular material causing less burning of dry grass than liquid or pulverized materials. To minimize burning, Rouse advises applying when soil moisture is good and grass is dry.

Choosing between high- and low-analysis fertilizers is main-

ly a personal decision. The soil chemist named two factors to consider in choosing: (1) high-analysis grades are more likely to be low in sulfur, and (2) most high-analysis materials are formulated from ammonium phosphates, which must be thoroughly mixed with soil or kept away from sprigs or seed to prevent damage to young roots.

Rouse said applying fertilizer in irrigation water is a satisfactory method, but cautioned that completely soluble materials

*(Continued on page 30)*



Talking over latest developments in turfgrass management during September 10-11 Turfgrass Short Course at Auburn University were, left to right, George C. Dickey, Jr., Woodley Country Club, Montgomery; W. T. Kennedy, Montgomery Country Club; and O. N. Andrews, Auburn Extension Service.



## Dichondra Pests and Controls Outlined in Council Bulletin

Listing of the garden pests which attack dichondra, that highly valued and lush southern California ground cover, along with chemical methods of control of the attackers, appears in an article in the July number of *California Turfgrass Culture*. Authors are R. N. Jefferson and A. S. Deal, professors of entomology at the Riverside campus of the University of California.

"Insecticides should be applied only when a pest is present in sufficient numbers to cause damage," the authors believe. Since many insects are normally found in dichondra lawns, and the effects of lack of care and insect infestations may appear similar, one should confirm the presence of insect infestations before insecticides are applied.

DDT and toxaphene will control cutworms as will Dow's carbamate insecticide, Zectran. Cutworms are 1- to 2-inch long, fat-bodied caterpillars, colored dull green, gray, brown, or black (sometimes with stripes), which feed on leaves and crown of new dichondra plants.

"Dichondra injury occurs most

often during summer and early fall months, and is most severe in warm inland areas," the authors disclose. A new lawn with maturing caterpillars can be seriously injured in 2 to 3 days.

Jefferson and Deal recommend a 1% pyrethrum solution in a gallon of water to bring caterpillars to the lawn surface where they can be counted and damage potential assessed. For new dichondra lawns, the authors suggest seeding before May or after September, so young seedlings will be spared the height of cutworm activity.

A new pest discovered in 1962 is a chrysomelid flea beetle. Adults are black and small, 1/25-inch long. They feed on upper leaf surfaces and skeletonize the leaves.

Sprays containing DDT applied at doses recommended for cutworms will control flea beetles when foliage and ground surface is thoroughly sprayed.

### New Moth Pest Uncovered

Slender spotted caterpillars which look like lawn moth larvae (only larger), have been reported damaging dichondra lawns in some southern California counties. Unlike lawn moth

larvae, lucerne moth larvae wiggle actively when disturbed.

Jefferson and Deal suggest Zectran at 3 pints to 100 gallons of water for control of this moth pest since neither DDT nor Sevin appears effective.

Dichondra is beset by vegetable weevil grubs during winter and early spring. Recovery is slow after heavy infestations because dichondra slows growth at this time, the entomologists report.

The grubs are small, green, legless larvae, 3/8-inch long. They feed on foliage at night, and hide in soil in the daytime. Infestations are usually localized because adult weevils cannot fly.

Treatment is warranted if more than an occasional grub is found feeding at night. Sprays of malathion, dieldrin or Zectran are effective controls, according to Jefferson and Deal.

Malathion should be applied at rates recommended for scale insects, dieldrin at rates for thrips and weevils, and Zectran at rates recommended for snails and slugs, to control vegetable weevil grubs.

Spider mites are tiny (1/50-inch long) sap-sucking pests. They cause a speckling of leaves. Later, as leaves dry up, the mites spin fine webs around the affected plants.

Spider mites on dichondra can be controlled with Kelthane or Dimite. At least 2 applications 2 weeks apart are necessary for control.

The common brown garden snail will take baits containing metaldehyde. Slugs do not respond to baits as well. Both pests can be controlled with repeated applications of Zectran. Areas where the pests gather should be drenched with spray.

Jefferson and Deal state that one should not apply insecticide sprays to dichondra when the lawn needs water. Fertilization and adequate watering before any insecticide application guards against injury. One should also wait until foliage is dry before spraying insecticide. Temperatures above 90°F may cause spray to injure turf.

## Mott Offers Mower-Renovator

A new hammer-knife mower, with free-swinging, replaceable blades, slices through thick matted growth to provide aeration and greater soil moisture absorption, Mott Corp. says. Renovating shoe on the new device permits cutting adjustment to the ground or slightly below.

Manufactured in two models, B-9 and B-32, the machines cut swaths of 24 and 32 inches, respectively, and can also be used for mowing fine turf and weedy areas, and for leaf mulching.

Free-swinging knives fold back on contact with obstructions, and then automatically return to cutting position. Throwing of struck objects is minimized with this feature, the company says.

The machines are self-propelled, with two forward speeds and reverse. An 8 1/4-hp. engine

provides power. Optional features include solid or pneumatic tires, dual wheels, riding sulky, 12-volt starter, leaf attachment, front wheels, and discharge shields. Detailed information is available from the company at 500 Shawmut Ave., La Grange, Ill.



Free-swinging, replaceable knives make it possible for this machine to renovate or aerate lawns, mow fine turf or weedy areas, and also perform leaf mulching chores, according to Mott Corp.