

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 subsoil 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.



A tree planting ceremony (above) marked August's convention of the International Shade Tree Conference. The tree was presented by ISTC to a Houston historical society. National Arborist Assn. members also elected officers during the affair. Shown below, left to right, are: secretary, Kenneth P. Soergel; second vice president Harry A. Morrison; first vice president Edwin E. Irish; and president Winston E. Parker.



ISTC Selects Washington for 1965 Meeting; Officers Named

Members of the International Shade Tree Conference were told during the annual convention in Houston Aug. 17-21 that the 1965 meeting will take place in Washington, D.C., August 16-20. Details of the program and the meeting site will be published in *Weeds and Turf* as the information becomes available.

As is customary, the National Arborist Association will meet jointly next year with ISTC members.

The meeting this year in Houston drew 450 delegates.

As part of the annual convention, both the International Shade Tree Conference and the National Arborist Association elect new officers. Chosen to head the ISTC in the coming 12 months is Joseph Dietrich, Park Superintendent for Greenwich, Conn. New vice president is O. J. Andersen of Trees of Houston (Texas). Dr. L. C. Chadwick remains as Secretary-Treasurer and Dr. Paul Tilford is continuing as Editor. In the National Arborist Association meeting, Winston E. Parker was elected president for the next year's period. He runs N. J. Certified Tree Expert Co. in Moorestown, N.J. First vice president is Edwin E. Irish of the Charles F. Irish Co. in Detroit, Mich. Second v-p is Harry A. Morrison, Arborist, Wilmette, Ill. Elected to the secretary's post was Kenneth P. Soergel who runs Soergel Tree Service in Gibsonia, Pa. Assisting the group in the treasurer's position will be John C. Phillips, Sohner Tree Service, San Anselmo, California.

Dr. Paul Tilford is Executive Secretary of the group, headquartered in Wooster, Ohio.

Ala.-Fla. Turfgrass Meet

(from page 19)

must be used to prevent clogging and the system must be flushed after use to prevent corrosion.

The researcher concluded with a "plug" for soil testing. He said no attempt should be made to establish or maintain a turf without using soil test results for a guide.

The event got underway with Dr. Ben T. Lanham, Jr., Associate Director of the Agricultural Experiment Station, welcoming the group to Auburn University. Speakers at the opening session, and their topics, were: George W. Cobb, Greenville, S. C., architect, "Golf Course Design and Construction"; Bill Rocquemore, Lakeland, Ga., seed and turf dealer, "Soil Fumigation"; and Dr. Raymond L. Self, Ornamental Horticulture Field Station, Spring Hill, "Methods of Grass Planting." O. N. Andrews, Auburn

Extension Service, presided at the opening session.

"Grasses Around the World" was the topic of Dr. Glenn Burton, USDA grass authority from Tifton, Ga., at the annual banquet.

IT-GC Set Feb. 7-12, Cleveland

The annual International Turf-Grass Conference and Show is scheduled to meet next Feb. 7-12 in the Hotel Sheraton-Cleveland, Cleveland, Ohio.

While of primary interest to golf course superintendents, the educational portions of the yearly affair are of note to all turf-grass professionals. Anyone may attend by paying the standard registration fee.

Sponsored by the Golf Course Superintendents Association of America, the show and conference draw about 1,000 delegates each year. For details, write CGSAA at P.O. Box 1385, Jacksonville Beach, Fla.