Green Section Gives Soil Testing Advice

Turfletter of Southeastern Office of USGA Green Section, B. P. Robinson, director, gives some soil testing information that in itself probably will be worth to Green Section regional turf service subscribers the cost of their year's fee, with all the rest of the service being a bonus.

Robinson writes:

"Clubs subscribing to the Regional Turf Service may have their soil analyzed at the Georgia Coastal Plain Experimental Station. The laboratory is supported by tax funds from the State of Georgia. The Station, therefore, does not have authority to test out-of-state soils without a small charge to offset its expenses; this fee is 50 cents per sample. Clubs within the State of Georgia do not pay a fee for the service. Other States within the Southeast have laboratories for testing soils. Various methods are used and recommendations vary according to the type of test run.

"The Southeastern Office would be in a better position to make recommendations to golf clubs if the samples were tested at one laboratory. The Regional Director is accustomed to making recommendations based upon tests from the Tifton laboratory.

Purpose of Soil Testing

"The question often arises, 'How much and what kind of lime or fertilizer should we use?' It is difficult to follow standard recommendations due to wide variation in soils and previous fertilization. Soil testing helps to remove some of the guesswork in fertilizing turf. Plants require some 15 chemical elements for growth. Of these, nitrogen, phosphorous, potassium, calcium and magnesium are most likely to be deficient in Southeastern soils.

"Soils vary widely in their fertility and in their fertilizer requirements. Knowing which element or elements are lacking will enable the superintendent to get the most out of his fertilizer dollar. Soil tests can help determine the kind and amount of elements a particular soil needs.

Soil Sampling

"The proper sample is the most important step in any analysis. If one realizes that results obtained from testing a small amount of soil may be used for making recommendations on several fairways or greens, the need for a good sample becomes evident. Every sample should be a thorough mixture of soil taken from at least ten different locations within an area

from which a soil analysis is desired. This is a composite sample. Specific instructions for sampling and mailing to the laboratory are as follows:

"1. Take a thin vertical slice of soil to a depth of 2 in. to 3 in. from at least ten different places within the area. Combine all 10 portions, mix thoroughly without touching with the hands, and save about ½ pint of the mixture.

"2. Samples may be taken from representative fairways, greens, or tees. For instance, a club may wish to sample its first 9 and second 9 greens separately and make a composite sample of each 9 greens. In some cases it might be desirable to keep samples separate for areas which have distinctive soil types or drainage conditions, i.e., low and high areas. From 5 to 10 samples should be sufficient for each club.

"3. A trowel, spade, auger, or broken golf shaft may be used in sampling.

"4. Samples should be taken and sent to the laboratory between April 1 and September 1. Do not send samples at other periods of the year. It would be best to have results of soil analysis before the Regional Director's annual visit to the club. Do not sample immediately after fertilization.

"5. Place the soil in a paper carton (½ pint ice cream cartons, etc.) or other suitable containers that will not crush or break, number, label and wrap samples in cardboard boxes for mailing. Include check or money order to cover expense of testing—50¢ per sample. Address as follows:

B. P. Robinson
USGA Green Section
Georgia Coastal Plain
Experiment Station
Tifton, Ga.

"6. Keep a personal record of where the samples were taken, results of the laboratory, and suggestions of the agronomist. This record over a period of years should give an indication of the amount of fertilizer which should be applied in order to keep soils in a good state of fertility.

What Are Soil Tests?

"Soil tests measure the amount of available plant nutrients in the soil. Available plant nutrients are nutrients which turf grasses can obtain for immediate growth. There are, however, nutrients held in soils which plants cannot utilize for growth. Tests are made on each soil for pH (acidity), available pounds per acre of nitrate nitrogen, phosphorous, potassium, calcium and magnesium. These are the

elements most likely needed in Southeastern soils.

The pH Test

"Measurements of soil reaction (whether acid or basic) are made with a pH meter. It is an accurate measurement, and when the soil type and turf grass are known liming recommendations can be made based on pH. Soils high in clay and organic matter require more lime to raise to a given pH level than light sandy soils.

Available Plant Nutrients

"NITRATE NITROGEN. Nitrates may vary in soil from day to day, as they are readily subject to leaching and plant use. Chemical soil tests indicate the general level of nitrates and may be of some help in indicating the need for nitrogen.

"PHOSPHATE. Some heavily fertilized putting greens are building up a reserve of phosphorous. An excess of phosphorous may be detrimental to plant growth. Most soils, however, are low in phosphorous except those that have been fertilized with phosphorous fertilizers for several years. A soil test will indicate the phosphorous level.

"POTASH. The amount of potash in Southeastern soils varies considerably. A soil test is very helpful in indicating potash needs of a soil.

"CALCIUM. Soil pH, in most cases, indicates the level of available calcium in soils. A low pH coupled with low available calcium indicates need for high liming rate. Some soils such as those with high organic matter and clay may have low pH with fairly high available calcium. This indicates lime is still needed for some grasses. Such soils have a high capacity to hold and exchange nutrients. High pH and hikh available calcium indicate no lime is needed.

"MAGNESIUM. In general, soils that are high in calcium contain ample magnesium. Putting greens may, however, have a good supply of calcium and still be low in magnesium content. Magnesium deficiencies may be corrected by the use of soluble magnesium salts in fertilizers or by applying finely ground limestone containing magnesium (dolomitic limestone). A soil test will indicate if this element is needed."

BALCONY SCENE

The Haig and Ed Rankin, gen. mgr., Walter Hagen div. of Wilson's, perch on the Baltusrol clubhouse and relax while the laboring lads on the course are needing some of the great shots Walter used to play when he was a contestant in National Open championships. Walter looks better than he's looked for years and finds the strain of opening the mail containing royalty checks much easier to take than his routine in the glamorous days.