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Connecticut Agricultural Experiment Station
New Haven

Soil Testing Service

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The Soils Department of the Agricultural Station has developed simple, rapid, and reasonably reliable methods for estimating the approximate amounts of readily available or active forms of the various chemical elements in the soil that affect the growth of crops. Some of the tests described in Bulletin 333 have been improved, while others have been added to the list. In addition to soil acidity, the following may now be determined by these methods:

1. Nitrogen as nitrates
2. Nitrogen as ammonia
3. Phosphorus, as readily soluble phosphates
4. Potassium } in active form
5. Calcium }
6. Magnesium }
7. Aluminum } in active form
8. Manganese }
9. Iron }

As a result of the development of these methods, the Station is now in a position to offer a greatly improved service in the testing of soils and the diagnosis of soil deficiencies or abnormalities. It is particularly important in this time of low prices, that the use of fertilizers, manure and lime on each field should be guided by the specific requirements of its soil. Otherwise fertilizer will be wasted, or labor and expense dissipated on a crop that may fail through improper soil treatment.

Directions for Soil Sampling

In these microchemical methods, very small amounts, scarcely more than a teaspoonful of soil, are used in the actual test. When one realizes that the results obtained from this small amount furnish the basis for diagnosing an acre or more of soil weighing about two millions of pounds, the necessity of careful and accurate sampling is readily apparent.

For each field or area in question, take 10 or more uniform slices of soil, using a spade or trowel—on cultivated fields to plow depth; on permanent sod to a depth of 2 inches.

Mix these thoroughly. Remove stones, coarse roots or hard clods, and take a half pint as a representative sample to be sent for examination.

If there are distinct types of soil in the field, or differences in past treatment or crops, these should be sampled separately as above.

Each sample should be packed in a clean container not previously used for drugs, chemicals, or similar foreign substances which might contaminate the soil. A new paper ice cream carton is quite satisfactory for the purpose.

Directions for Sending

All packages containing soil samples, and letters that accompany them, should be addressed to:

Soils Department,
Conn. Agricultural Experiment Station,
P. O. Box 1106,
New Haven, Conn.

The package should bear the sender's name.

If possible the sender should call at the Station to discuss the interpretation of the tests reported to him.

A form is given on the following sheet, which should be filled in as fully as possible, torn out and sent in with the sample or samples. Knowledge of the physical character of the soil, of the crop growth and of the past use of fertilizers, lime and manure is essential to reliable diagnosis of the soil.

Form for Soil Record

Soil record No.....

Field sample Nos.....

.....

Name.....

Address.....

.....

Locate samples by number and direction of north by arrow on outline map of field.

Designation of field.....

Soil description

(Underscore terms that apply.)

Topographic location: Level, rolling, steep, in valley, on slope, on hill crest.

Drainage: Excessive, good, fair, poor.

Surface soil: Depth.....inches.
Color: Black, dark brown, grayish-brown, brown, reddish-brown.
Texture: Coarse sand, loamy sand, sandy loam, fine sandy loam, loam, silt loam, clay loam.
Structure: Soft, loose, crumbly, firm, hard, cloddy.
Stone or gravel: Very stony, gravelly, no stone, no gravel.

Subsoil: Thickness.....inches.
Color: Light brown, yellow brown, yellow, reddish-yellow, yellowish-drab, grayish-drab.
Texture: Sandy, gravelly, loamy.
Structure: Mellow, firm, compact.
Stone or gravel: Very, slightly, stony, gravelly, no stone, no gravel.

Substratum: Loose and stony, compact "hardpan," gravel, sand, clay.
Color: Gray, yellowish-gray, light brown, reddish-gray, brownish-red, drab.

Field history

This season, 19.....
Crop.....yield.....
Fertilizer.....lbs. per A.....
analysis in row ☐ or broadcast ☐.....
.....
Lime.....tons per A.
hydrated ☐
limestone ☐
.....
Manure.....tons per A.
Kind.....

Last season, 19.....
Crop.....yield.....
Fertilizer.....lbs. per A.....
analysis in row ☐ or broadcast ☐.....
Lime.....tons per A.
hydrated ☐
limestone ☐
.....
Manure.....tons per A.
Kind.....

Previous treatment:.....
.....
.....
.....

Crops to be grown during next three years:
19.....
19.....
19.....

Is drainage assisted by tile ☐ or open ditches ☐

Special problems:.....
.....

No form can be devised that will fit all cases, and as much supplemental information as possible should be written on the back of this sheet.