

SOIL CONSERVATION NEWS

By JAMES H. GRIFFIN, Soil Conservationist



In the above picture Ed Karnowski (right), Albemarle Soil Conservation District soil scientist, is explaining to George Conner, Conservation Aid of Chowan County, some of the physical properties of a soil profile on the John G. Wood (Hayss) farm. Mr. Wood is in the planning stage of working up a complete soil and water conservation plan on the Hayes farm. (Photo by James Griffin).

Quite frequently a farmer will ask "What good is a soil map of my farm?" The primary purpose of a soil survey is to furnish the farmer basic physical land information to guide farm planning for proper application of soil conservation practices. The soil scientist identifies and maps the significant land type of entire farms occurring within the Albemarle Soil Conservation District.

Each soil in the district has been classified. These capability classes represent summarizations, for practical use, of the interpretations of the land facts ascertained and recorded by the soil scientist and other Soil Conservation Service technicians, plus any available helpful information from farmers' experience.

The work unit conservationist will use the land capability maps to guide him in developing, cooperatively with the farmer, a scientific plan for the proper use and protection of all the land on the farm—cropland, forest land, pasture, idle land, etc. Their job, in other words, is to

help farmers to use their land, all of it, according to its capability and treat it according to its needs.

When the soil scientist makes a survey or an inventory of a farm, some of the characteristics which he will observe directly or may be inferred from observable indicators are: effective depth of soil, texture of surface soil and subsoil, permeability (hydraulic coefficient) and natural inherited drainage, indicated usually by the profile coloring, especially gray mottlings. Other significant characteristics observed are: thickness of surface soil or subsoil layers, character of underlying material, available moisture capacity and the amount of organic matter.

The effective depth of soil refers to the depth of soil material which plant roots can penetrate readily in search of water and plant nutrients. It is the depth or layer of soil which is most favorable for growth of roots and for storage of plant-usable moisture and is above a

layer that differs from the overlying material in physical or chemical properties sufficient to prevent or seriously retard the growth of roots. Effective depth of soil should not be confused with such measurements as thickness of surface soil, or depth to the water table. There are only two soils found in Chowan County which have a "hardpan." They are Leon fine sand and St. John fine sand.

Soil texture refers to the relative proportions of the various size groups of individual soil grains in a mass of soil. Specifically, it refers to the proportions of clay (.002 millimeters or less in size) silt (.05 to .002 millimeters in size) and sand (.05 to 2.0 millimeters in size). Texture of surface soil is characteristic closely associated with workability of a soil. An example of this might be the ease at which a Woodstown loamy fine sand found in the Valhalla and Rocky Hock communities will cultivate before or after a rain as compared to an Elkton silt loam found in the St. John's and Greenfield communities. Texture also influences erodibility, permeability, subsoil structure and other soil characteristics.

The permeability or hydraulic coefficient may be defined as the capacity of a soil to transmit water and/or air. It can be expressed quantitatively in terms of rate or flow of water through a unit cross section of saturated soil in unit time under specified hydraulic conditions. Soil texture and structure are the two most important factors which influence permeability of a soil. Light textured soils, i.e. a soil with a light friable sandy clay subsoil will have a higher rate of permeability than a soil with a clay loam subsoil. Soil structure is a condition of the soil material in which the primary particles like sand, silt and clay are arranged into aggregates. Aggregates differ in shape, in size, in stability and in adhesion to one another. As far as hydrological and soil studies have gone, seven degrees of permeability will express the most significant variations of this factor in agricultural soils. These ranges of permeability are from very slow (less than .05 inches of water per hour

which percolates through a saturated undisturbed core under 1/2 inch head of water) to very rapid (more than 10 inches of water which percolates through a saturated undisturbed core under 1/2 inch head of water).

The natural inherited drainage, as stated before, can be noted by the quantity of gray mottlings in the subsoil. Mottling, especially mixtures of grayish, pale yellow or brown in the soil profile are common indicators of restricted or poor aeration caused by presence of excess water. Brighter yellowish or reddish colors and absence, or near absence, of gray mottling indicate much better aeration and drainage. Relief, soil texture, permeability and structure of the subsoil influence the degree of drainage of a soil. The soil scientist recognizes five degrees of drainage. (1) Well drained, (2) Moderately well drained, (3) Somewhat poorly drained, (4) Poorly drained and (5) Very poorly drained.

Soils in Chowan County which have a surface thickness from 18 inches to 30 inches are mapped as "thick surface phase." Usually the texture of these thick surface soils will range from loamy sand to a loamy fine sand. As a result, a soil with a thick surface is placed in a different soil class from that of a soil with a normal surface thickness. This is due largely to the fertility problem the thick surface creates.

Continued on Page 6, Section 2

Openings Now For Inspector Jobs At Harvey Point Base

The District Public Works Officer, Fifth Naval District, U. S. Naval Base, Norfolk, has a number of openings in North Carolina and Virginia for construction inspectors in grade GS-7 with pay at the rate of \$4,980 per year. In North Carolina, inspectors are required for the construction now under way at the new Naval Air Station, Harvey Point. In Virginia, the inspectors are required for work at different locations in the Hampton Roads area.

To qualify, applicants must have had a total of 5 years of experience including 3 years of general experience as a skilled worker in general construction work.

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such as steel, masonry, wood, or reinforced concrete buildings, excavations, foundations, roads, locks levees, piers, sewage disposal, exclusive of journeyman experience in only one of the recognized trades. He must also have had specialized experience as foreman, superintendent or inspector of general construction work.

Applicants should submit a Standard Form 57, "Application for Federal Employment," to the District Public Works Officer, Code DA-210, Fifth Naval District, U. S. Naval Base, Norfolk, Virginia, as soon as possible. SF-57's may be obtained from any Post Office.

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WITH THE FARM WOMEN

By VIRGINIA M. NANCE, Extension Home Economics Editor

One of the newest home demonstration curb markets in the state was opened recently in MARTIN County, according to Home Agent Helen L. Hoskins. "The public was highly complimentary about our opening day," she said, "especially about the women in their uniforms and the fresh appearance of the produce. One woman at West End even used her daughter's bicycle to go from house to house reminding her neighbors about the market." BURKE County home demonstration club members have a special spot in their hearts for Bolivia, says Evelyn W. Watson, home agent. And all because an International Farm Youth Exchange delegate came to the county change delegate came to the county. Continued on Page 6—Section 2

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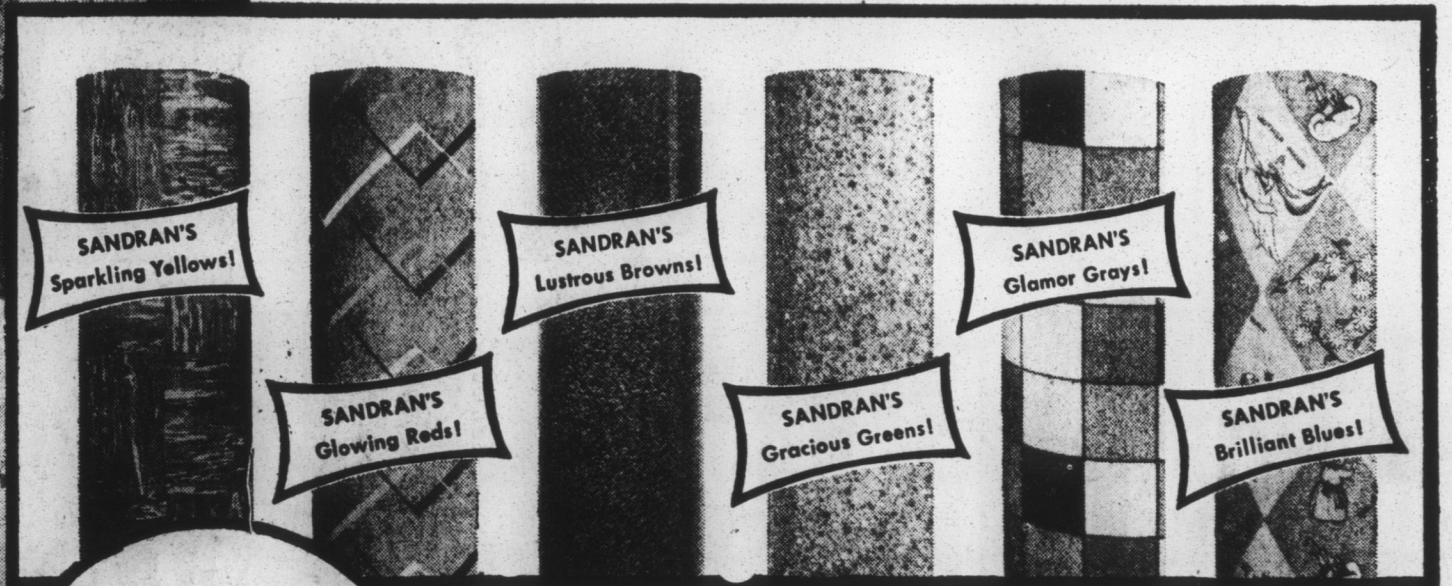
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