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Summary

The physical properties of the different horizons of soils from 79 sites in South Carolina were determined. Regression analyses of certain physical properties on soil texture showed the following trends:

Bulk density tended to increase as the silt and clay content decreased but was affected considerably by factors other than texture.

The regression equations relating silt and clay to the moisture equivalent and the field capacity accounted for about 88 percent of the variation. The values for these properties increased as the silt and clay contents increased, with the silt having about 61 percent as much effect as the clay.

The equations for the fifteen-atmosphere percentage and the wilting percentage accounted for about 93 percent of the variation indicating a close relation of texture to these properties. The clay was about five times as effective as the silt in increasing the values for these properties.

The best regression equations for available water capacity on a weight basis accounted for 50.6 percent of the variability of the Coastal Plain soils and 64.0 percent of the variability of the Piedmont soils. The equations for available water capacity on a volume basis accounted for 24.8 percent and 77.2 percent of the variability of the Coastal Plain and Piedmont soils respectively.

The pH values of most of the subsoils were in the range from 4.5 to 5.5. The specific gravities of most soils were between 2.60 and 2.70. The pore drainage values under 60 cm tension and the hydraulic conductivities varied widely with different soil types and different horizons in a given soil type. The permeability classification of the soils, based on pore drainage and hydraulic conductivity, indicated that the least permeable zone of a considerable number of the soils was between the 24- and 36-inch depths.

THE PHYSICAL PROPERTIES OF SOME SOUTH CAROLINA SOILS

T. C. PEELE,[1] O. W. BEALE,[2] and F. F. LESESNE[3]

The physical properties of soils greatly affect their capacities to produce crops. They influence such factors as infiltration rates, runoff, erosion, soil aeration and root development, leaching of nutrients, ease of tillage, moisture conduction under saturated and unsaturated conditions, storage of available moisture for plant growth, and others.

The physical properties of a considerable number of soil types were investigated during a period of several years, and the results of these investigations are presented in this bulletin. The physical properties of some of the same soil types in South Carolina, Georgia, and North Carolina were reported recently by Long *et al.* (2), Lutz (3), and in Soil Survey Investigations Report No. 16 (7).

Classification of Soils Studied

The soil series, family, subgroup, and previous designation if different from the present series name are shown in table 1 for the Coastal Plain and table 2 for the Piedmont sites. Increased knowledge and a new classification system since the study was started have resulted in revision of the concept of many soil series, the introduction of many new ones, and the dropping of some. The placement into series, family, and subgroup was made by C. M. Ellerbe, state soil scientist, and R. D. Wells, state soil correlator, Soil Conservation Service, USDA. Classification was made on the basis of descriptions and data available, plus some assumptions made on the basis of general knowledge of the areas from which samples were taken. Many pedons were not described deep enough to make firm classifications.

Methods and Procedure

The sites for investigation were selected by soil scientists of the Soil Conservation Service who identified the soil types as then known, described the soil profiles, and assisted in collecting the

[1] Professor of Agronomy, South Carolina Agricultural Experiment Station.
[2] Soil Scientist, Soil and Water Conservation Research Division, Agricultural Research Service, USDA.
[3] Former Soil Scientist, Soil Conservation Service, USDA.

soil samples. A disturbed soil sample and four soil cores were collected from each horizon studied. The soil cores were collected in thin-walled stainless steel cylinders having an inside diameter of 3.8334 inches, a wall thickness of 0.0833 inch, a length of 3.701 inches, and a total volume of 700 cc. The cylinders were beveled on one end to provide a sharp cutting edge. They were forced into the soil with a hydraulic jack operated against a truss held in place with soil augers. To collect cores from the soil layers below the surface, the upper soil was removed to the desired sampling depth.

The cores were used to measure bulk density, pore drainage, and saturated hydraulic conductivity. The cores were placed in vacuum desiccators with the soil at approximately its field moisture content and allowed to saturate with water under a pressure deficiency of 19 inches of mercury to minimize the entrapment of air. The procedure was as follows: A ring, one-half inch in height, was placed on the top of each core and sealed in place with a wide rubber band. The cores were placed on a plate in the desiccator and the desiccator was evacuated. Water was introduced into the bottom of the desiccator until it reached a level outside the cores one-half inch above the soil surface, and the cores were allowed to stand until water rose above the soil level inside the ring at the top of the cores. The water level was then brought above the top of the ring, the vacuum released, and the cores allowed to stand overnight.

The cores were placed on wire screens over beakers, while maintaining a water head of one-quarter inch above the soil surface, and the hydraulic conductivity of the soil determined. They were then transferred to individual tension plates immediately after removing the excess water on the surface with a sponge or absorbent cotton. The pore drainage in 15 minutes and 15 hours under 60 cm tension was determined by collecting and weighing the water drained. The individual tension plates consisted of a brass pan, 8 inches in diameter, with a drainage tube extending below the center of the bottom of the pan. A wire screen was placed in the pan to facilitate lateral movement of the water. The drainage tube was filled with water to provide 60 cm tension, and the screen was covered with a thick blotting paper which retained the tension of the water column. The tension plates and soil cores were covered during pore drainage measurements to prevent evaporation losses. After completing the pore drainage measurements, the dry weights of the soil cores were determined for calculation of bulk densities.

The disturbed soil samples, collected at the same time as the soil cores, were air-dried and passed through a 2-mm sieve. The material passing through the sieve was used for laboratory analysis. Mechanical analyses of the soils were made by the pipet method (1). Moisture equivalent was determined by the centrifuge method of Briggs and McLane using the procedure recommended by Veihmeyer and Hendrickson (9). The field capacity was estimated from the regression equation of Peele and Beale (5) for South Carolina soils in which $2.62 + 0.865X =$ field capacity, where X is the moisture equivalent. The fifteen-atmosphere percentage was determined by the pressure membrane procedure of Richards (6). Wilting percentage was calculated from the regression equation of Peele and Beale (5), in which $0.99 + 0.97X =$ wilting percentage where X is the fifteen-atmosphere percentage. The available water capacity in percent, on a dry weight basis (g/100g), is the field capacity in percent minus the wilting percentage. The available water capacity on a volume basis

$$(cc/cc) = \frac{(\text{field capacity} - \text{wilting percentage}) \times \text{bulk density.}}{100}$$

The available water capacity on a volume basis (cc/cc) is the same as cubic inches of water per cubic inch of soil or surface inches per inch depth. This value multiplied by soil depth in inches is the amount of rainfall or irrigation required to raise the soil moisture content to that depth from the wilting percentage to field capacity, not considering runoff, evaporation, or moisture movement below this depth.

Specific gravity determinations were made by the pycnometer method, and total porosity was calculated from the specific gravity and bulk density measurements. The pH was determined on 1:1 soil to water mixtures with the glass electrode.

The permeability classes for the hydraulic conductivity values are based on the classification in the Soil Survey Manual (8). The permeability classes for the 15-minute pore drainage values under 60 cm tension are based on the classification reported by Peele (4).

Results and Discussion

The soil types, site numbers, location, and site descriptions are presented in table 3 for the Coastal Plain and table 4 for the Piedmont areas. Detailed profile descriptions, using the classification system current at the time of sampling, were made at each site and are on file in the office of the State Soil Scientist, Soil

Conservation Service, Columbia, S. C., and the Department of Agronomy and Soils, Clemson University.

The horizon, depths sampled, texture, mechanical analysis, bulk density, moisture equivalent, field capacity, fifteen-atmosphere percentage, wilting percentage, and available water capacity for each horizon are shown in table 5 for the Coastal Plain soils and table 6 for the Piedmont soils.

The relation of soil texture to the other physical properties shown in tables 5 and 6 was determined by regression analyses of the physical properties, such as bulk density, moisture equivalent, etc., on the silt and clay percentages.[4] Omitted from the analyses were: the stream bottom soils, Chewacla and Congaree; the tidal marsh soils of the Capers series; site 31, Rutlege sandy loam, because of its high organic matter content; and the Iredell soil because of its montmorillonitic clay. The surface soil horizons (Ap) were omitted in the analysis of bulk density and available water capacity on a volume basis (cc/cc) but were included in all other regression analyses. This was done because the bulk density of the surface soil is influenced by tillage operations.

The equations estimated by the regression analyses for the different properties of the Coastal Plain, Piedmont, and Coastal Plain plus Piedmont soils are listed in this order on pages 4 and 5. The percent variation of the physical properties accounted for by variation in the percent silt and percent clay for each equation is shown. The equations for the different groups of soils are designated by C for the Coastal Plain, P for the Piedmont, and C + P for the combined groups.

Bulk density, g/cc, Y.

		R^2
C	$Y = 1.62 - 0.00007\ (\text{Clay})^2$	11.6%
C	$Y = 1.67 - 0.00147\ \text{Silt} - 0.00326\ \text{Clay}$	10.3%
P	$Y = 1.58 - 0.00007\ (\text{Clay})^2$	34.3%
P	$Y = 1.77 - 0.00155\ \text{Silt} - 0.00651\ \text{Clay}$	36.1%
C + P	$Y = 1.62 - 0.00008\ (\text{Clay})^2$	20.9%
C + P	$Y = 1.69 - 0.00150\ \text{Silt} - 0.00421\ \text{Clay}$	19.2%

Moisture equivalent, Y.

C	$Y = 2.58 + 0.267\ \text{Silt} + 0.413\ \text{Clay}$	85.4%
P	$Y = 1.05 + 0.262\ \text{Silt} + 0.488\ \text{Clay}$	88.5%
C + P	$Y = 2.22 + 0.266\ \text{Silt} + 0.436\ \text{Clay}$	88.2%

[4] The writers are indebted to Dr. C. B. Loadholt, assistant professor of Experimental Statistics, Clemson University, for the regression analyses.

Field capacity, %, Y.

C	$Y = 4.84 + 0.231\ \text{Silt} + 0.357\ \text{Clay}$	85.4%
P	$Y = 3.55 + 0.226\ \text{Silt} + 0.422\ \text{Clay}$	88.6%
C + P	$Y = 4.54 + 0.230\ \text{Silt} + 0.378\ \text{Clay}$	88.2%

Fifteen-atmosphere percentage, Y.

C	$Y = -0.50 + 0.065\ \text{Silt} + 0.349\ \text{Clay}$	93.1%
P	$Y = -3.07 + 0.083\ \text{Silt} + 0.455\ \text{Clay}$	93.2%
C + P	$Y = -1.20 + 0.073\ \text{Silt} + 0.382\ \text{Clay}$	92.8%

Wilting percentage, Y.

C	$Y = 0.29 + 0.070\ \text{Silt} + 0.339\ \text{Clay}$	93.7%
P	$Y = -1.20 + 0.080\ \text{Silt} + 0.441\ \text{Clay}$	93.2%
C + P	$Y = -0.33 + 0.076\ \text{Silt} + 0.371\ \text{Clay}$	93.2%

Available water capacity, g/100g, Y.

C	$Y = 4.82 + 0.161\ \text{Silt} + 0.018\ \text{Clay}$	43.1%
C	$Y = 2.02 + 0.293\ \text{Silt} + 0.145\ \text{Clay} - 0.006\ \text{Silt} \times \text{Clay}$	50.6%
P	$Y = 5.54 + 0.146\ \text{Silt} - 0.019\ \text{Clay}$	62.0%
P	$Y = 4.06 + 0.196\ \text{Silt} + 0.034\ \text{Clay} - 0.002\ \text{Silt} \times \text{Clay}$	64.0%
C + P	$Y = 4.88 + 0.154\ \text{Silt} + 0.006\ \text{Clay}$	46.6%
C + P	$Y = 2.74 + 0.256\ \text{Silt} + 0.107\ \text{Clay} - 0.004\ \text{Silt} \times \text{Clay}$	52.8%

Available water capacity, cc/cc, Y.

C	$Y = 0.08 + 0.0012\ \text{Silt} + 0.0006\ \text{Clay}$	24.8%
C	$Y = 0.04 + 0.0018\ \text{Silt} + 0.0035\ \text{Clay} + 0.00003\ (\text{Silt})^2 - 0.00003\ (\text{Clay})^2 - 0.00007\ \text{Silt} \times \text{Clay}$	36.2%
P	$Y = 0.13 + 0.0018\ \text{Silt} - 0.0012\ \text{Clay}$	67.8%
P	$Y = 0.06 + 0.00952\ \text{Silt} - 0.00253\ \text{Clay} - 0.00008\ (\text{Silt})^2 + 0.00004\ (\text{Clay})^2 - 0.00007\ \text{Silt} \times \text{Clay}$	77.2%
C + P	$Y = 0.09 + 0.0015\ \text{Silt} + 0.0001\ \text{Clay}$	29.5%
C + P	$Y = 0.05 + 0.0017\ \text{Silt} + 0.0032\ \text{Clay} + 0.00003\ (\text{Silt})^2 - 0.00003\ (\text{Clay})^2 - 0.00005\ \text{Silt} \times \text{Clay}$	42.8%

The multiple correlation coefficient for each of the above equations was significant at the 1 percent level.

The regression equations for bulk density accounted for only about 11 percent of the variation for Coastal Plain soils, 35 percent for Piedmont soils, and 20 percent for Coastal Plain and Piedmont soils combined. This means that other factors were more important than texture alone in determining the bulk density of these soils. The equations show a tendency for bulk density to decrease as silt and clay contents increase.

The equations for the moisture equivalent account for 85 to 88 percent of the variation, showing a close relationship of soil texture to the moisture equivalent of these soils. The same is true of the regression equations for field capacity. Both moisture equivalent and field capacity increase as the silt and clay increase with the clay having nearly twice the effect of the silt.

The equations for the fifteen-atmosphere percentage and the wilting percentage account for about 93 percent of the variation showing the close relations of these measurements to soil texture. Both of these values increase as the silt and clay content of the soils increase with the clay having about five times as much effect as the silt.

The equations for available water capacity on a weight basis, g/100g, accounted for 43 to 64 percent of the variation, with the equations for the Piedmont soils accounting for more of the variation than those for the Coastal Plain soils.

The best equation for available water capacity on a volume basis, cc/cc, for the Coastal Plain soils accounted for only 36.2 percent of the variation, whereas 77.2 percent of the variation was accounted for by the best equation for the Piedmont soils. This means that the available water capacity of the Coastal Plain soils, on a volume basis, is affected more by factors other than texture than is true of the Piedmont soils. The equations for this property are based on the subsoils only since bulk density is a factor in determining this property, and in the surface soils it is affected by cultivation.

The available water capacity in depths of 1, 2, and 3 feet are shown in table 7 for the Coastal Plain soils and in table 8 for the Piedmont soils. These values can be used in estimating the amount of water to apply when irrigating these soils. They also give some indication of the drouthiness of the soils for a given rootzone depth. Some of the soils with the highest available water capacity in the 0- to 24-inch and the 0- to 36-inch depths were: Bayboro, Chewacla, Congaree, Alamance, and Iredell. The soils with the lowest available water capacities in these depths were the sandy soils: Charleston, Lakeland, Wagram, and Wando.

The pH, specific gravity, porosity, hydraulic conductivity, and permeability classification are shown in table 9 for the Coastal Plain soils and table 10 for the Piedmont soils. The pH values of the subsoils varied considerably, but most of them were in the range from 4.5 to 5.5. The specific gravities were generally in the range from 2.60 to 2.70 g/cc. Notable exceptions were the Capers soils (salt marsh) with specific gravities about 2.44 and the Iredell and Mecklenburg soils with specific gravities of 2.82 to 2.92.

The percent large pores, as measured by the volume of pores drained at 60 cm tension, varied widely with different soil types and horizons as did the hydraulic conductivities.

The soil permeability classifications of the different soil series are given in table 11 for the 0- to 2-foot depth and in table 12 for the 0- to 3-foot depth. These groupings are based on the lowest permeability classification, determined either by pore drainage or hydraulic conductivity, of any soil layer to the depths indicated. Hydraulic conductivity of soil cores may be influenced in some instances by fortuitous channels due to decayed plant roots or worm holes giving values higher than those from a larger volume of soil in which the channels are not open at both ends. Since a single channel of this type would have only a small effect on the pore drainage value, this measurement can be used to minimize the effects of these channels in arriving at soil permeability values.

The least permeable soils for both the 0- to 24-inch and the 0- to 36-inch depths were Bladen, Capers, Chewacla, and Iredell. The sandy soils, Lakeland, Wagram, and Wando, were the most permeable. In comparing the 0- to 24-inch and 0- to 36-inch depths, it is noted that more of the sites tend to fall in the lower permeability class for the latter depth; this indicates that the least permeable zone of a considerable number of the soils is between the 24- and 36-inch depths.

TABLE 1.—CLASSIFICATION OF COASTAL PLAIN SOILS.

Site no.	Series	Family	Subgroup	Previous designation (if different from series name)[1]
22	Bayboro	clayey, mixed, thermic	Umbric Paleaquults	Hyde
70	Bladen	clayey, mixed, thermic	Typic Albaquults	....
36	Bladen	clayey, mixed, thermic	Typic Albaquults	Weston
41	Bladen	clayey, mixed, thermic	Typic Albaquults	....
4	Bladen	clayey, mixed, thermic	Typic Albaquults	....
35	Bladen	clayey, mixed, thermic	Typic Albaquults	Weston
34	Bladen	clayey, mixed, thermic	Typic Albaquults	Weston
68	Bladen	clayey, mixed, thermic	Typic Albaquults	....
83	Capers	fine, mixed-sulfureous, nonacid, thermic	Typic Thiaquents	Tidal marsh
84	Capers	fine, mixed-sulfureous, nonacid, thermic	Typic Thiaquents	Tidal marsh
58	Capers	fine, mixed-sulfureous, nonacid, thermic	Typic Thiaquents	Tidal marsh
27	Charleston	coarse-loamy, mixed thermic	Aquultic Hapludalfs	....
99	Chewacla	fine-loamy, mixed, thermic	Aquic Fluventic Dystrochrepts	....
98	Chewacla	fine-loamy, mixed, thermic	Aquic Fluventic Dystrochrepts	....
97	Congaree	fine-loamy, mixed, nonacid, thermic	Typic Udifluvents	....
100	Congaree	fine-loamy, mixed, nonacid, thermic	Typic Udifluvents	....
33	Coxville	clayey, kaolinitic, thermic	Typic Paleaquults	....
45	Coxville	clayey, kaolinitic, thermic	Typic Paleaquults	....
28	Coxville	clayey, kaolinitic, thermic	Typic Paleaquults	....
38	Coxville	clayey, kaolinitic, thermic	Typic Paleaquults	....
67	Craven	clayey, mixed, thermic	Aquic Hapludults	Wahee
62	Edisto	coarse-loamy, siliceous, thermic	Glossaquic Fragiudalfs	....
63	Edisto	coarse-loamy, siliceous, thermic	Glossaquic Fragiudalfs	....
20	Edisto	coarse-loamy, siliceous, thermic	Glossaquic Fragiudalfs	....
21	Edisto	coarse-loamy, siliceous, thermic	Glossaquic Fragiudalfs	....
87	Fuquay	loamy, siliceous, thermic	Arenic Plinthic Paleudults	Norfolk
72	Goldsboro	fine-loamy, siliceous, thermic	Aquic Paleudults	....
66	Grady	clayey, kaolinitic, thermic	Typic Paleaquults	....
43	Grady	clayey, kaolinitic, thermic	Typic Paleaquults	....
42	Grady	clayey, kaolinitic, thermic	Typic Paleaquults	....
86	Grady	clayey, kaolinitic, thermic	Typic Paleaquults	....

102	Lakeland	siliceous, thermic, coated	Typic Quartzipsamments	....
29	Leaf	clayey, mixed, thermic	Typic Albaquults	....
57	Lynchburg	fine-loamy, siliceous, thermic	Aeric Paleaquults	Dunbar
76	Lynchburg	fine-loamy, siliceous, thermic	Aeric Paleaquults	Scranton
91	Lynchburg	fine-loamy, siliceous, thermic	Aeric Paleaquults	Dunbar
77	Lynchburg	fine-loamy, siliceous, thermic	Aeric Paleaquults	....
69	Meggett	fine, mixed, thermic	Typic Albaqualfs	Weston
74	Norfolk	fine-loamy, siliceous, thermic	Typic Paleudults	....
44	Norfolk	fine-loamy, siliceous, thermic	Typic Paleudults	....
46	Norfolk	fine-loamy, siliceous, thermic	Typic Paleudults	....
25	Ocilla	loamy, siliceous, thermic	Aquic Arenic Paleudults	Dunbar
37	Portsmouth	fine-loamy, siliceous, thermic	Typic Umbraquults	....
32	Rains	fine-loamy, siliceous, thermic	Typic Paleaquults	Coxville
56	Rains	fine-loamy, siliceous, thermic	Typic Paleaquults	Coxville
61	Rains	fine-loamy, siliceous, thermic	Typic Paleaquults	Coxville
64	Rains	fine-loamy, siliceous, thermic	Typic Paleaquults	Coxville
39	Rains	fine-loamy, siliceous, thermic	Typic Paleaquults	Grady
85	Rains	fine-loamy, siliceous, thermic	Typic Paleaquults	Stono
23	Rains	fine-loamy, siliceous, thermic	Typic Paleaquults	Weston
65	Rains	fine-loamy, siliceous, thermic	Typic Paleaquults	Lynchburg
26	Rains	fine-loamy, siliceous, thermic	Typic Paleaquults	....
47	Rains	fine-loamy, siliceous, thermic	Typic Paleaquults	....
31	Rutlege	sandy, siliceous, thermic	Typic Humaquepts	Stono
75	Varina	clayey, kaolinitic, thermic	Plinthic Paleudults	Marlboro
90	Wagram	loamy, siliceous, thermic	Arenic Paleudults	Norfolk
92	Wagram	loamy, siliceous, thermic	Arenic Paleudults	Norfolk
18	Wando	siliceous, thermic coated	Typic Quartzipsamments	....
71	Yonges	fine-loamy, mixed, thermic	Typic Albaqualfs	Weston
10	Yonges	fine-loamy, mixed, thermic	Typic Albaqualfs	....
8	Yonges	fine-loamy, mixed, thermic	Typic Albaqualfs	Eulonia
73	Yonges	fine-loamy, mixed, thermic	Typic Albaqualfs	Eulonia

[1] The names in this column were the series names or the miscellaneous land-type names given to the sites when sampled.

TABLE 2.—CLASSIFICATION OF PIEDMONT SOILS.

Site no.	Series	Family	Subgroup	Previous designation (if different from series name)[1]
60	Alamance	fine-silty, siliceous, thermic	Typic Hapludults	....
55	Cecil	clayey, kaolinitic, thermic	Typic Hapludults	....
52	Cecil	clayey, kaolinitic, thermic	Typic Hapludults	....
54	Cecil	clayey, kaolinitic, thermic	Typic Hapludults	....
89	Chewacla	fine-loamy, mixed, thermic	Aquic Fluventic Dystrochrepts	....
88	Congaree	fine-loamy, mixed, nonacid, thermic	Typic Udifluvent	....
51	Davidson	clayey, kaolinitic, thermic	Rhodic Paleudults	Lloyd
49	Davidson	clayey, kaolinitic, thermic	Rhodic Paleudults	Lloyd
53	Davidson	clayey, kaolinitic, thermic	Rhodic Paleudults	Lloyd
80	Georgeville	clayey, kaolinitic, thermic	Typic Hapludults	Herndon
59	Georgeville	clayey, kaolinitic, thermic	Typic Hapludults	....
50	Hayesville	clayey, kaolinitic, mesic	Typic Hapludults	....
101	Herndon	clayey, kaolinitic, thermic	Typic Hapludults	....
79	Iredell	fine, montmorillonitic, thermic	Vertic Hapludalfs	....
78	Mecklenburg	fine, mixed, thermic	Ultic Hapludalfs	......

[1] The names in this column were the series names given to the sites when sampled.

TABLE 3.—SOIL TYPE, LOCATION, AND SITE DESCRIPTION OF COASTAL PLAIN AREAS INVESTIGATED.

Site no.	Soil type	Location	Land use or present crop	Site description at sampling time
22	Bayboro clay loam	Hampton County, Buckfield plantation	Johnsongrass	This area was formerly used to grow bulbs and was limed heavily about 5 years ago. It has been drained approximately 25 years.
70	Bladen fine sandy loam	Horry County, ½ mile west of Myrtle Beach	Truck crops	Cultivated land used for truck crops. Ditches, about 300 feet apart, drain the area. Moisture conditions were average with the water table at 32 inches.
36	Bladen fine sandy loam	Beaufort County, ⅞ mile S.E. of Seabrook	Truck crops	This field has been in cultivation for the last 30 years. The area is drained by open ditches, spaced 150 to 200 feet apart.
41	Bladen fine sandy loam	Beaufort County, ¾ mile south of Seabrook	Truck crops	Land cultivated about 30 years, mainly in truck crops. Drainage ditches are about 200 feet apart.
4	Bladen loam	Hampton County	Idle	Land has been cultivated and pastured. Field has surface drainage ditches.
35	Bladen loamy sand	Beaufort County, ¾ mile S.E. of Seabrook	Truck crops	This field has been in cultivation for 30 years. Open ditches, spaced 150 to 200 feet apart, afford drainage for the area.
34	Bladen very fine sandy loam	Beaufort County, ¼ mile south of Seabrook	Truck crops	This field has been in cultivation about 25 years. The drainage system consists of main ditches with laterals 250 to 300 feet apart.
68	Bladen very fine sandy loam	Beaufort County, ¼ mile east of Seabrook	Truck crops	Land cultivated for a long time, mainly in truck crops. Open ditches afford drainage for the area.
83	Capers clay loam	Charleston County, 1½ miles south of Wallace River	White marsh	Old rice field abandoned for many years that is now being developed for pasture.
84	Capers clay loam	Charleston County, 1½ miles south of Wallace River	White march	Old rice field abandoned for many years that is now being developed for pasture.
58	Capers clay	Georgetown County, 10 miles south of Georgetown	Marsh grass	Old rice field that is being reclaimed. Cultivation was recently attempted, but some difficulty was encountered where the surface is shallow.
27	Charleston loamy sand	Charleston County	Truck crops	Field has been in cultivation for many years. Open ditches about 75 feet apart drain the area.

TABLE 3.—SOIL TYPE, LOCATION, AND SITE DESCRIPTION OF COASTAL PLAIN AREAS INVESTIGATED (Continued)

Site no.	Soil type	Location	Land use or present crop	Site description at sampling time
99	Chewacla loam	Kershaw-Sumter County State Prison Farm at Boykin	Lespedeza	Bottom land that has been in cultivation for many years. Free water was noted at a depth of 14 inches.
96	Chewacla loamy sand	(Data missing)		(Data missing)
98	Chewacla loam	Kershaw-Sumter County State Prison Farm at Boykin	Corn	Botton land that has been in cultivation for many years.
97	Congaree fine sandy loam	Kershaw-Sumter County State Prison Farm at Boykin	Grain	This land has been in cultivation for a long time.
100	Congaree loam	Kershaw-Sumter County State Prison Farm at Boykin	Corn	This land has been in cultivation for a long time.
95	Congaree loamy sand	(Data missing)		(Data missing)
33	Coxville fine sandy loam	Williamsburg County, 1½ miles south of Kingstree	Idle	This area has been in cultivation for many years. Ditches about 160 yards apart afford drainage for the area.
45	Coxville fine sandy loam	Williamsburg County, 1½ miles south of Kingstree	Idle	The land has been in cultivation for many years. Ditches afford drainage for the area.
28	Coxville loam	Dillon County, 3 miles S.E. of Dillon	Hay and corn	Cultivated field with no ditches or tile in the area, other than a highway ditch.
38	Coxville loam	Marlboro Co., 6 miles north of Bennettsville-Fletcher Hwy.	Lespedeza	Land has been cultivated for several years. The soil in the area is very poorly drained.
67	Craven loam	Marlboro Co., 4 miles west of Brownsville, near S. C. Hwy 34, 2 miles south and 2 miles east of the Pee Dee River	Row crops	This is an area that has been in cultivation for many years. An open ditch about 4 feet deep affords drainage for the area.
62	Edisto loamy fine sand	Charleston County	Irish potatoes	The area is in a high state of cultivation with green manure crops turned under every year. Open ditches 100 feet apart drain the area.

63	Edisto loamy fine sand	Georgetown County, 1 mile east of Black River Station	Grain	The area has been cleared recently. Ditches about 400 feet apart provide drainage for the area.
20	Edisto loamy sand	Charleston County 2 miles S.E. of Hollywood	Truck crops	The land has been cultivated about 50 years, principally in truck crops. Drainage ditches are about 75 feet apart.
21	Edisto loamy sand	Charleston County 2 miles S.E. of Hollywood	Truck crops	The land has been cultivated about 50 years. It has an extensive system of drainage ditches, about 75 feet apart.
87	Fuquay loamy sand	Williamsburg County, ½ mile south of Salters	Row crops	This area has been in cultivation for many years. Moisture conditions were average at the time of sampling.
72	Goldsboro sandy loam	Williamsburg County, 6 miles south of Carris, 300 yards east of county road	Cotton	The area is cultivated. Drainage is poor, and there are no drainage ditches.
66	Grady clay loam	Lee County, 1 mile west of Bishopville	Pond	This area is a pond of about 45 acres. It was cleared of mixed hardwood and brush, and probably has never been cultivated.
43	Grady sandy clay loam	Marlboro County, 8 miles N.E. of Bennettsville	Lespedeza	This is a large cultivated field, which receives some runoff from adjacent soils. The natural soil drainage is imperfect. Tile installed some years ago is giving good results.
42	Grady sandy loam	Marlboro County, 9 miles N.E. of Bennettsville	Soybeans	This is a natural depression that has been in cultivation for a long time. Formerly drained by open ditches, it is now tile drained. The area is extremely dry.
86	Grady silt loam	Clarendon County, 5 miles south of Summerton	Hay and corn	This area has been in cultivation many years. Drainage conditions are poor at it receives some runoff from higher areas. Tile has been installed for drainage.
102	Lakeland sand	Lexington County, 4 miles west of Lex. on U. S. Hwy. 1	Peaches	The land has been in cultivation for many years with a cover crop turned under each year.
29	Leaf loam	Marion County, 1½ miles north of West Marion	Pasture	This site was recently cleared of pine and black gum trees. It has been limed, fertilized, and seeded to dallisgrass, lespedeza, and white clover.
57	Lynchburg fine sandy loam	Williamsburg County, 12 miles east of Kingstree	Idle	This area was recently in cultivation, but is now in broomsedge. Drainage canals afford drainage for the area.

TABLE 3.—SOIL TYPE, LOCATION, AND SITE DESCRIPTION OF COASTAL PLAIN AREAS INVESTIGATED (Continued)

Site no.	Soil type	Location	Land use or present crop	Site description at sampling time
76	Lynchburg loamy sand	Clarendon County, 1 mile west of Turbeville, ½ mile north of S. C. Hwy. 54	Corn	The field has been in cultivation for many years. Recently, a main drainage ditch has been dug through the area.
91	Lynchburg loamy sand	Darlington Co., ½ mile S.E. of Hartsville, S. C. Hwy. 151	Cotton	This land has been cultivated for many years and is used for experimental plots. It is a large flat area with a water table at 58 inches.
77	Lynchburg sandy loam	(Data missing)		(Data missing)
69	Meggett loamy fine sand	Beaufort County, 500 feet east of Seabrook packing shed	Truck crops	Land cultivated for a long time, mainly to truck crops. Open ditches, 30 inches deep drain area.
74	Norfolk loamy sand	Williamsburg County, 3 miles south of Carris	Cultivated	The area was recently plowed. It is very flat with a few depression areas of other soils. Soil was somewhat wet with a water table at 41 inches.
44	Norfolk loamy sand	Williamsburg Co., 1½ miles so. of Kingstree, U. S. Hwy. 521	Tobacco	This site has been cultivated for a number of years. The surface drainage is adequate.
46	Norfolk loamy sand	Williamsburg Co., 1½ miles so. of Kingstree, U. S. Hwy. 521	Row crops	This site has been in cultivation for many years. The field was freshly plowed after a cotton crop. The soil moisture condition was average to slightly dry.
25	Ocilla loamy sand	Colleton Co., 6 miles N.W. of Bells Crossroads, Hwy. 641	Pasture	This land was formerly cultivated. It is now in a pasture sod of dallisgrass, carpetgrass, and lespedeza.
37	Portsmouth loam	Darlington County, 5 miles north of Hartsville	Soybeans	The field has been in cultivation for many years. Internal drainage is slow. The effective soil drainage is classed as imperfect. It has been tile drained for 2 years.
32	Rains fine sandy loam	Williamsburg County, 5½ miles north of Kingstree	Carpetgrass	The area shows signs of previous cultivation. The highway ditch 250 feet to the east and a large canal 350 feet to the north furnish drainage for the area.
56	Rains fine sandy loam	Williamsburg County, 12 miles east of Kingstree	Corn	First year in cultivation. Surface drainage is poor.

61	Rains fine sandy loam	Williamsburg County, 6 miles east of Lane	Pasture	The area is drained by open ditches. The water table is at 19 inches.
64	Rains fine sandy loam	Williamsburg County, 6 miles east of Lane	Pasture	The area is drained by open ditches. The soil is very moist with the water table at 19 inches.
39	Rains loam	Marlboro County, 9 miles N.E. of Bennettsville	None (cultivated)	The area has been newly cleared, tile drained, and recently cultivated. The natural drainage of the area is poor.
85	Rains loam	Georgetown County, 2 miles N.E. of Georgetown and ½ mile north of U. S. Hwy. 521	Idle	The area is low and receives some runoff from adjoining areas. A shallow open ditch affords some drainage.
23	Rains loamy sand	Jasper County, 3 miles north of Ridgeland 800 yards west of Hwy. 17	Pasture	Pasture which has been in sod for several years.
65	Rains loamy sand	Lee County, 9 miles east of Bishopville, 6 miles south of U. S. Hwy. 15	Hay and corn	This site has been in cultivation for many years. It is drained by open ditches.
26	Rains sandy loam	Williamsburg County, 12 miles east of Kingstree	Idle	This field was cultivated 2 years previous to sampling. A recently dug drainage ditch was about 150 feet from the sampling site.
47	Rains sandy loam	Williamsburg County, 6½ miles north of Kingstree	Grain	The area is cultivated. There are a few ditches through the area and one improved canal in the natural drainageway.
31	Rutledge sandy loam	Charleston County, 9 miles north of Charleston, on U. S. Hwy. 17	Oats	This field apparently has been in cultivation for a long time. It is drained with open ditches spaced about 300 feet apart.
75	Varina fine sandy loam	Williamsburg County, 10 miles N.W. of Andrews	Tobacco	This area has been in cultivation for many years. Surface drainage is well established.
90	Wagram loamy sand	Williamsburg County, 2 miles south of Greeleyville, 200 ft. west of S. C. Hwy. 261	Row crops	The site is an old idle field that was recently reclaimed. It is now in cultivation.
92	Wagram loamy sand	Williamsburg County, 3 miles south of Greeleyville, near S. C. Hwy. 261	Row crops	This site has been in cultivation for many years. Associated soils are Norfolk sandy loam and Portsmouth sandy loam.

TABLE 3.—SOIL TYPE, LOCATION, AND SITE DESCRIPTION OF COASTAL PLAIN AREAS INVESTIGATED (Continued)

Site no.	Soil type	Location	Land use or present crop	Site description at sampling time
18	Wando loamy fine sand	Charleston County, 100 yds. west of Yonges Island P. O.	Truck crops	This field has been in cultivation about 50 years. It is drained by open ditches 75 to 100 feet apart.
71	Yonges loam	Horry County, ½ mile west of Myrtle Beach	Truck crops	This is a cultivated area. Ditches spaced 300 feet apart afford drainage for the area.
10	Yonges loamy sand	Charleston County, ½ mile north of Yonges Island P. O.	Truck crops	This field has been in cultivation about 50 years. It is drained by open ditches, 75 to 100 feet apart.
8	Yonges loamy sand	Charleston County, 1 mile north of Yonges Island P. O.	Crotalaria	The field has been cultivated about 50 years and is drained by open ditches about 100 feet apart.
73	Yonges loamy sand	Georgetown County 2 miles N.E. of Georgetown and ½ mile north of S. C. Hwy. 521	Small grain	This area is used to grow corn and small grain. Drainage ditches are about 200 feet apart and about 2 feet deep.

TABLE 4.—SOIL TYPE, LOCATION, AND SITE DESCRIPTION OF PIEDMONT AREAS INVESTIGATED.

Site no.	Soil type	Location	Land use or present crop	Site description at sampling time
60	Alamance silt loam	Lancaster County, north of Lancaster at intersection of Hwy. 522 and 906	Oats and lespedeza	This area has been in cultivation a long time. The slope is 1%.
55	Cecil loamy sand*	Oconee County, Clemson Univ., Ravenel runoff plots	Corn, vetch, and rye	The area has been in cultivation 100 years or more.
52	Cecil sandy loam	Anderson County, intersection Hwy. 178 and 88	Small grain	The area has been in cultivation for many years. The slope is 8%.
54	Cecil sandy loam	Oconee County, 1 mile S.W. Seneca River, Hwy. 76	Corn, vetch, and rye	The area probably has been in cultivation for 100 years or more. The slope is 8%.
89	Chewacla silty clay loam	Spartanburg County, 3 miles east of Spartanburg, ½ mile west of Springdale dairy farm	Truck crops	This is bottom land, and at times it is flooded. The soil was recently plowed and was wet at time of sampling.
88	Congaree silty clay loam	Spartanburg County, 3 miles east of Spartanburg, ½ mile west of Springdale dairy farm	Truck crops	This is bottom land, and at times it is flooded. The field was plowed recently and was wet at time of sampling.
51	Davidson clay loam	Oconee County, 2 miles south of Salem on Hwy. 288	Cotton	This field has been in cultivation for 30 to 40 years. An inadequate terrace system was poorly maintained, and there was some gullying in the field.
49	Davidson sandy clay loam	Anderson County, 5 miles north of Ander., on Hwy. 178	Cotton	This field has been in cultivation for many years. A terrace system has been established, but it has not been maintained.
53	Davidson sandy loam	Oconee County, 2 miles north of Westminster	Idle	This field has been idle for 4 years. It probably has been in cultivation for 50 years or more.
80	Georgeville silt loam	Lexington County, 8 miles N.W. of Lex., Lake Mur. rd.	Orchard	This site has been in cultivation for many years. Cotton and other cultivated crops have been grown.
59	Georgeville very fine sandy loam	Lancaster County, 6 miles east of Lancaster, Hwy. 906	Idle	This land was formerly cultivated, but is now partially covered with pines and vines. The slope is 4%.

TABLE 4.—SOIL TYPE, LOCATION, AND SITE DESCRIPTION OF PIEDMONT AREAS INVESTIGATED (Continued)

Site no.	Soil type	Location	Land use or present crop	Site description at sampling time
50	Hayesville sandy loam	Oconee County, 5 miles N.W. of Westminster, 2 miles north of Hwy. 76	Cotton and corn	This field probably has been in cultivation for 25 to 30 years.
101	Herndon silt loam	Lexington County, 8 miles N.W. of Lex., Lake Mur. rd.	Orchard	Peach orchard 6 years old. The area between the trees was formerly in lespedeza but is now cultivated.
79	Iredell fine sandy loam	York County, 2 miles south of Oak Ridge School	Idle	This area has been cultivated for many years. It had been plowed recently prior to sampling.
78	Mecklenburg loam	York Co., ½ mile so. of Hwy. 21 on bypass around Rock Hill	Pasture	This area was cultivated for many years and had been used for cotton, corn, and small grain production.

* The surface soil of this Cecil profile is thicker than normal because of overwash material.

TABLE 5.—MECHANICAL ANALYSIS, BULK DENSITY, MOISTURE EQUIVALENT, FIELD CAPACITY, FIFTEEN-ATMOSPHERE PERCENTAGE, WILTING PERCENTAGE, AND AVAILABLE WATER CAPACITY OF COASTAL PLAIN SOILS.

Site no.	Soil series	Horizon	Depth	Texture	Mechanical analysis Sand	Silt	Clay	Bulk density	Moisture equiva-lent	Field capacity	Fifteen-atmosphere percent-age	Wilt-ing percent-age	Available water capacity	
			Inches		%	%	%	*g/cc*		%			*g/100g**	*cc/cc**
22	Bayboro	Ap	0-12	Clay loam	33.0	33.8	33.2	1.32	30.1	28.7	14.2	14.8	13.9	0.18
	"	Btg	12-36	Clay	35.1	24.8	40.1	1.31	29.5	28.1	14.8	15.3	12.8	0.17
70	Bladen	Ap	0-10	Fine sandy loam	66.7	18.6	14.7	1.19	16.2	16.6	6.4	7.2	9.4	0.11
	"	B21tg	10-19	Clay	39.8	15.5	44.7	1.19	26.9	25.9	16.4	16.9	9.0	0.11
	"	B22tg	19-38	Sandy clay	45.5	17.6	36.9	1.19	25.7	24.9	14.9	15.4	9.5	0.11
	"	Cg	38-72	Sandy clay loam	78.5	1.0	20.5	1.35	14.2	14.9	5.6	6.4	8.5	0.11
36	Bladen	Ap	0-10	Fine sandy loam	74.5	19.3	6.2	1.40	12.2	13.2	3.1	4.0	9.2	0.13
	"	Blg	10-19	Sandy loam	74.7	20.6	4.7	1.56	9.9	11.2	2.7	3.6	7.6	0.12
	"	B2tg	20-34	Sandy clay	48.7	13.7	37.6	1.58	24.9	24.2	13.6	14.2	10.0	0.16
41	Bladen	Ap	0-13	Fine sandy loam	69.5	24.9	5.6	1.49	12.3	13.3	3.0	3.9	9.4	0.14
	"	A2	13-20	Sandy loam	70.1	22.9	7.0	1.48	11.1	12.2	2.6	3.5	8.7	0.13
	"	B2tg	20-36	Clay	36.8	15.1	48.1	1.33	31.8	30.1	18.7	19.1	11.0	0.15
	"	Cg	36+	Sandy clay loam	48.5	18.6	32.9	1.64	25.4	24.6	13.1	13.7	10.9	0.18
4	Bladen	Ap	0-9	Loam	61.4	32.6	6.0	1.45	16.3	16.7	3.2	4.1	12.6	0.18
	"	Btg	9-36	Clay	25.9	23.2	50.9	1.22	35.6	33.4	17.8	18.3	15.1	0.18
35	Bladen	Ap	0-8	Loamy sand	78.4	17.1	4.5	1.26	8.5	10.0	2.2	3.1	6.9	0.09
	"	Blg	8-14	Sandy loam	71.2	23.6	5.2	1.51	8.9	10.3	2.2	3.1	7.2	0.11
	"	B2tg	14-36	Sandy clay	47.4	12.1	40.5	1.57	24.0	23.4	13.0	13.6	9.8	0.15
34	Bladen	Ap	0-8	Very fine sandy loam	72.1	21.1	6.8	1.38	10.4	11.6	2.4	3.3	8.3	0.11
	"	Blg	8-17	Sandy loam	63.5	29.7	6.8	1.59	11.0	12.1	2.2	3.1	9.0	0.14
	"	B2tg	17-36	Clay loam	40.1	22.5	37.4	1.50	26.1	25.2	15.0	15.5	9.7	0.15
68	Bladen	Ap	0-8	Very fine sandy loam	66.5	26.5	8.0	1.43	14.6	15.2	3.7	4.6	10.6	0.15
	"	A2g	8-15	Sandy loam	64.7	29.8	5.5	1.63	11.4	12.5	2.0	2.9	9.6	0.16
	"	B21tg	15-28	Clay loam	42.7	26.1	31.2	1.44	22.6	22.2	12.4	13.0	9.2	0.13
	"	B22tg	28+	Clay	34.7	21.6	43.7	1.45	29.4	28.1	17.7	18.2	9.9	0.14
83	Capers	A	0-12	Clay loam	35.1	30.1	34.8	1.12	33.0	31.2	15.4	16.4	14.8	0.17
	"	Cg	12-40	Clay loam	37.3	27.1	35.6	1.26	27.9	26.7	14.3	14.9	11.8	0.15

TABLE 5.—MECHANICAL ANALYSIS, BULK DENSITY, MOISTURE EQUIVALENT, FIELD CAPACITY, FIFTEEN-ATMOSPHERE PERCENTAGE, WILTING PERCENTAGE, AND AVAILABLE WATER CAPACITY OF COASTAL PLAIN SOILS (Continued).

Site no.	Soil series	Horizon	Depth	Texture	Mechanical analysis Sand	Silt	Clay	Bulk density	Moisture equivalent	Field capacity	Fifteen-atmosphere percentage	Wilting percentage	Available water capacity	
			Inches		%	%	%	*g/cc*		%			*g/100g**	*cc/cc**
84	Capers	A	0-12	Clay loam	24.2	41.9	33.9	0.95	37.0	34.7	18.6	19.0	15.7	0.15
	"	Cg	12-40	Clay loam	23.9	40.4	35.7	1.13	33.8	31.8	17.2	17.7	14.1	0.16
58	Capers	All	0-9	Clay	8.3	33.6	58.1	1.00	51.4	47.1	32.1	32.1	15.0	0.15
	"	A12g	9-20	Clay	3.7	31.1	65.2	0.90	48.2	44.3	32.1	32.1	12.2	0.11
	"	Cg	20-96	Clay	12.4	37.0	50.6	0.93	46.9	43.2	30.0	30.1	13.1	0.12
27	Charleston	Ap	0-10	Loamy sand	89.5	4.1	6.4	1.60	7.6	9.2	2.3	3.2	6.0	0.10
	"	Bt	11-30	Sandy loam	81.2	2.8	16.0	1.50	9.8	11.1	5.3	6.1	5.0	0.08
99	Chewacla	Ap	0-10	Loam	42.3	41.4	16.3	1.43	26.0	25.1	9.5	10.2	14.9	0.21
	"	C1	10-19	Loam	40.6	35.3	24.1	1.41	25.2	24.4	11.4	12.0	12.4	0.17
	"	C2	19+	Silt loam	11.0	65.5	23.5	1.15	36.7	34.4	15.0	15.5	18.9	0.22
96	Chewacla	A11	0-8	Loamy sand	81.5	14.0	4.0	. . .	8.8	10.3	2.1	3.0	7.3	. . .
	"	A12	8-16	Loamy sand	77.5	18.0	4.5	. . .	8.5	10.0	1.2	2.1	7.9	. . .
	"	C1	16-24	Sandy clay	46.7	17.2	36.1	. . .	23.8	23.3	11.9	12.6	10.7	. . .
	"	C2	24+	Clay loam	43.4	25.1	31.6	. . .	25.6	24.8	15.0	15.5	9.3	. . .
98	Chewacla	Ap	0-8	Loam	46.8	39.5	13.7	1.20	28.8	27.5	10.2	10.9	16.6	0.20
	"	C1	8-16	Silt loam	19.8	54.1	26.1	1.48	29.6	28.2	14.2	14.8	13.4	0.20
	"	C2g	16+	Silty clay loam	11.4	57.9	30.7	1.50	31.8	30.1	17.2	17.7	12.4	0.19
97	Congaree	Ap	0-8	Fine sandy loam	66.5	24.5	9.0	1.23	18.8	18.9	6.1	6.9	12.0	0.15
	"	C1	8-16	Clay	19.8	23.7	56.5	1.37	32.2	30.5	15.8	16.3	14.2	0.19
	"	C2	16-30	Clay loam	43.4	22.2	34.4	1.38	34.1	32.1	16.3	16.8	15.3	0.21
	"	C3	30+	Clay loam	25.0	42.4	32.6	1.52	27.6	26.5	11.3	12.0	14.5	0.22
100	Congaree	Ap	0-8	Loam	48.1	33.4	18.5	1.41	24.7	24.0	8.5	9.2	14.8	0.21
	"	C1	8-24	Loam	34.2	44.3	21.5	1.17	29.7	28.3	12.5	13.1	15.2	0.18
	"	C2	24-53	Clay loam	21.2	48.0	30.8	1.28	33.8	31.9	16.0	16.5	15.4	0.20
95	Congaree	A11	0-8	Loamy sand	84.5	13.0	2.5	. . .	5.3	7.2	. . .	2.2	. . .	. . .
	"	A12	8-16	Loamy sand	80.5	17.0	2.5	. . .	5.8	7.6	. . .	2.2	. . .	. . .

	”	C1	16-30	Sandy clay loam ...	77.5	2.2	20.3	...	13.4	14.2	...	8.0	...	...
	”	C2	30+	Sandy loam	62.2	26.8	11.0	...	7.4	9.1	...	4.6	...	...
33	Coxville	Ap	0-7	Fine sandy loam ...	67.5	21.1	11.4	1.41	14.3	15.0	4.3	5.2	9.8	0.14
	”	Blg	8-14	Sandy loam	65.3	22.2	12.5	1.55	11.4	12.5	4.4	5.3	7.2	0.11
	”	B2tg	14+	Clay loam	42.9	17.4	39.7	1.65	22.5	22.1	14.8	15.3	6.8	0.11
45	Coxville	Ap	0-7	Fine sandy loam ...	63.1	27.1	9.8	1.25	17.7	17.9	5.8	6.6	11.3	0.14
	”	B21tg	7-14	Clay loam	42.0	22.2	35.8	1.65	21.7	21.4	13.6	14.2	7.2	0.12
	”	B22tg	14-24	Clay	36.2	19.3	44.5	1.56	26.0	25.1	16.5	17.0	8.1	0.13
	”	B23tg	24+	Clay	38.5	16.4	45.1	1.59	26.5	25.5	17.2	17.7	7.8	0.12
28	Coxville	Ap	0-5	Loam	44.2	41.6	14.2	1.43	20.5	20.4	7.1	7.9	12.5	0.18
	”	B1tg	9-18	Clay loam	32.3	38.7	28.9	1.61	20.1	20.0	11.2	11.9	8.1	0.13
	”	B2tg	18+	Clay loam	30.9	29.5	39.6	1.56	24.6	23.9	15.7	16.2	7.7	0.12
38	Coxville	Ap	0-5	Loam	46.1	31.5	22.4	1.07	18.9	19.0	8.8	9.5	9.5	0.10
	”	B21tg	5-12	Clay loam	30.5	29.6	39.9	1.40	21.7	21.4	14.2	14.8	6.6	0.09
	”	B22tg	12+	Clay	26.3	30.9	42.8	1.45	23.3	22.8	15.6	16.1	6.7	0.10
67	Craven	Ap	0-6	Loam	41.5	42.1	16.4	1.56	19.5	19.5	7.3	8.1	11.4	0.18
	”	B21t	6-13	Silty clay	19.0	41.0	40.0	1.49	30.1	28.7	17.8	18.3	10.4	0.15
	”	B22t	13-26	Clay loam	24.9	35.8	39.3	1.52	30.1	28.7	17.8	18.3	10.4	0.16
	”	B3t	26+	Clay loam	32.3	34.7	33.0	1.61	29.3	28.0	16.8	17.3	10.7	0.17
62	Edisto	Ap	0-12	Loamy fine sand ...	77.8	15.6	6.6	1.33	11.5	12.6	3.3	4.2	8.4	0.11
	”	B	12-18	Sandy loam	69.8	16.5	13.7	1.57	12.1	13.1	4.7	5.5	7.6	0.12
	”	A’2&B	18-26	Sandy loam	69.7	14.1	16.2	1.56	12.2	13.2	5.0	5.8	7.4	0.12
	”	A’2	26-30	Sandy loam	73.9	14.5	11.7	1.57	9.7	11.0	4.1	5.0	6.0	0.09
	”	B’X	38-42	Sandy loam	69.1	12.8	18.1	1.61	15.6	16.1	6.7	7.5	8.6	0.14
63	Edisto	Ap	0-6	Loamy fine sand ...	72.3	16.9	10.8	1.37	13.3	14.1	5.1	5.9	8.2	0.11
	”	A2	6-14	Sandy loam	66.8	15.5	17.7	1.60	13.8	14.6	6.4	7.2	7.4	0.12
	”	B	14-18	Sandy clay loam ...	63.1	16.1	20.8	1.57	14.2	14.9	7.7	8.5	6.4	0.10
	”	A’2&B	18-24	Sandy loam	64.2	18.4	17.4	1.62	13.2	14.0	6.4	7.2	6.8	0.11
	”	B’X	30-34	Sandy clay loam ...	60.6	16.7	22.7	1.48	15.7	16.2	9.5	10.2	6.0	0.09
	”	B’X	42-46	Sandy loam	72.1	11.4	16.5	1.48	15.7	16.2	9.5	10.2	6.0	0.09
20	Edisto	A	0-18	Loamy sand	80.6	13.1	6.3	1.30	7.6	9.2	2.0	2.9	6.3	0.08
	”	B1	18-24	Sandy loam	70.5	11.8	17.7	1.66	12.1	13.1	5.3	6.1	7.0	0.12
	”	B2	24-36	Sandy clay loam ...	61.0	15.8	23.2	1.64	16.4	16.8	8.2	8.9	7.9	0.13

TABLE 5.—MECHANICAL ANALYSIS, BULK DENSITY, MOISTURE EQUIVALENT, FIELD CAPACITY, FIFTEEN-ATMOSPHERE PERCENTAGE, WILTING PERCENTAGE, AND AVAILABLE WATER CAPACITY OF COASTAL PLAIN SOILS (Continued).

Site no.	Soil series	Horizon	Depth	Texture	Mechanical analysis Sand	Silt	Clay	Bulk density	Moisture equivalent	Field capacity	Fifteen-atmosphere percentage	Wilting percentage	Available water capacity	
			Inches		%	%	%	*g/cc*		%			*g/100g**	*cc/cc**
21	Edisto	Ap	0-9	Loamy sand	84.1	9.1	6.8	1.41	7.6	9.2	2.0	2.9	6.3	0.09
	”	A2	9-29	Sandy loam	75.6	15.8	8.6	1.48	9.0	10.4	2.4	3.3	7.1	0.11
	”	BX	29-36	Sandy loam	67.0	13.1	19.9	1.75	15.6	16.1	6.2	7.0	9.1	0.16
87	Fuquay	Ap	0-8	Loamy sand	91.2	5.5	3.3	1.44	4.8	6.8	1.2	2.2	4.6	0.07
	”	A2	8-26	Loamy sand	89.3	7.2	3.5	1.50	3.8	5.9	0.8	1.8	4.1	0.06
	”	B1	26-38	Sandy loam	75.0	5.4	19.6	1.63	12.5	13.4	6.5	7.3	6.1	0.10
	”	B2tcn	38-50	Sandy clay loam ...	65.1	6.5	28.4	1.70	15.4	15.9	9.0	9.7	6.2	0.11
72	Goldsboro	Ap	0-6	Sandy loam	79.3	11.4	9.3	1.19	10.8	12.0	2.8	3.7	8.3	0.10
	”	A2	6-13	Sandy loam	77.7	13.1	9.2	1.52	8.7	10.1	2.3	3.2	6.9	0.10
	”	B1	13-21	Sandy clay loam ...	69.2	7.8	23.0	1.53	13.1	14.0	6.9	7.7	6.3	0.10
	”	B21t	21-28	Sandy clay loam ...	66.4	6.2	27.4	1.67	16.2	16.6	9.8	10.5	6.1	0.10
	”	B22t	28-36	Sandy clay loam ...	67.3	6.8	25.9	1.70	13.6	14.4	8.6	9.3	5.1	0.09
	”	B23t	36+	Sandy clay loam ...	74.0	5.3	20.7	1.71	15.9	16.4	9.2	9.9	6.5	0.11
66	Grady	Ap	0-4	Clay loam	29.6	33.4	37.0	1.36	24.3	23.6	14.2	14.8	8.8	0.12
	”	B21tg	4-12	Clay	15.4	31.2	53.4	1.42	25.2	24.4	17.9	18.4	6.0	0.09
	”	B22tg	12-22	Clay	11.8	30.6	57.6	1.46	27.3	26.2	20.3	20.7	5.5	0.08
	”	B23tg	22-33	Clay	28.9	29.6	41.5	1.63	20.5	20.4	14.4	15.0	5.4	0.09
	”	B24tg	33+	Clay	35.4	24.6	40.0	1.67	20.4	20.3	13.8	14.4	5.9	0.10
43	Grady	Ap	0-5	Sandy clay loam ...	57.8	17.4	24.8	1.50	15.7	16.2	8.2	8.9	7.3	0.11
	”	B21tg	5-17	Sandy clay	45.1	18.7	36.2	1.49	19.6	19.6	12.0	12.6	7.0	0.10
	”	B22tg	17+	Sandy clay loam ...	45.3	27.7	27.0	1.64	21.0	20.8	14.1	14.7	6.1	0.10
42	Grady	Ap	0-5	Sandy loam	62.9	22.4	14.7	1.50	15.3	15.9	5.8	6.6	9.3	0.14
	”	B1g	5-19	Sandy clay loam ...	57.4	17.2	25.4	1.69	15.6	16.1	8.6	9.3	6.8	0.11
	”	B2tg	19+	Sandy clay	50.1	14.5	35.4	1.66	19.3	19.3	11.6	12.2	7.1	0.12
86	Grady	Ap	0-7	Silt loam	15.6	61.1	23.3	1.42	28.5	27.3	9.6	10.3	17.0	0.24
	”	B1g	7-15	Clay loam	21.1	44.3	34.6	1.66	24.8	24.1	14.8	15.3	8.8	0.15
	”	B2tg	15-32	Clay	17.6	31.4	51.0	1.58	29.0	27.7	19.3	19.7	8.0	0.13

102	Lakeland	Ap	0-8	Sand	91.2	4.5	4.3	1.50	5.0	6.9	1.3	2.3	4.6	0.07
	"	C1	8-22	Sand	89.0	7.0	4.0	1.67	4.3	6.3	1.2	2.2	4.1	0.07
	"	C2	22-42	Sand	89.6	5.5	4.9	1.56	4.3	6.3	1.3	2.3	4.0	0.06
	"	C3	42-60	Sand	93.2	3.0	3.8	1.59	3.4	5.6	1.2	2.2	3.4	0.05
29	Leaf	Ap	0-5	Loam	27.7	46.9	25.4	1.28	29.3	28.0	11.3	12.0	16.0	0.20
	"	Btg	8+	Silty clay loam	15.3	48.2	36.5	1.51	25.7	24.9	15.2	15.7	9.2	0.14
57	Lynchburg	Ap	0-8	Fine sandy loam	73.9	18.5	7.6	1.27	9.3	10.7	2.9	3.8	6.9	0.09
	"	B21t	8-15	Clay loam	43.4	27.5	29.1	1.34	20.0	19.9	10.7	11.4	8.5	0.11
	"	B22tg	15-32	Sandy clay loam	48.7	21.4	29.9	1.56	20.8	20.6	12.6	13.2	7.4	0.12
	"	B23tg	32+	Sandy clay loam	49.8	19.5	30.7	1.61	21.4	21.1	13.1	13.7	7.4	0.12
76	Lynchburg	Ap	0-8	Loamy sand	80.6	15.5	3.9	1.46	9.1	10.5	2.9	3.8	6.7	0.10
	"	A2	8-16	Loamy sand	78.8	15.0	6.2	1.72	7.6	9.2	2.4	3.3	5.9	0.10
	"	Btg	16-30	Sandy loam	70.5	9.6	19.9	1.66	12.3	13.3	7.2	8.0	5.3	0.09
	"	C	30-40	Loamy sand	81.2	11.1	7.7	1.88	7.4	9.0	2.6	3.5	5.5	0.10
91	Lynchburg	Ap	0-8	Loamy sand	81.0	16.0	3.0	1.59	6.7	8.4	1.9	2.8	5.6	0.09
	"	B21t	8-14	Sandy clay loam	54.4	19.1	26.5	1.58	15.6	16.1	8.9	9.6	6.5	0.10
	"	B22tg	14-30	Sandy clay loam	58.7	18.9	22.4	1.60	14.3	15.0	8.4	9.1	5.9	0.09
	"	B23tg	30+	Sandy clay loam	61.3	16.5	22.2	1.70	13.6	14.4	8.0	8.8	5.6	0.10
77	Lynchburg	A	0-6	Sandy loam	55.3	34.1	10.6	1.36	18.9	19.0	4.5	5.4	13.6	0.18
	"	B1	6-16	Sandy loam	64.1	24.5	11.4	1.73	11.2	12.3	3.6	4.5	7.8	0.13
	"	B21	16-27	Sandy loam	57.1	23.3	19.6	1.71	14.7	15.3	7.4	8.2	7.1	0.12
	"	B22tg	27+	Sandy clay loam	56.4	19.3	24.3	1.73	16.8	17.2	8.7	9.4	7.8	0.13
69	Meggett	Ap	0-8	Loamy fine sand	78.9	17.9	3.2	1.33	9.6	10.9	2.4	3.3	7.6	0.10
	"	A2g	8-16	Sandy loam	71.1	25.2	3.7	1.65	9.6	10.9	2.1	3.0	7.9	0.13
	"	B21tg	16-25	Clay loam	42.4	20.6	37.0	1.45	26.1	25.2	15.5	16.0	9.2	0.13
	"	B22tg	25-36	Clay loam	44.9	18.1	37.0	1.55	26.0	25.1	14.9	15.4	9.7	0.15
	"	B3g	36+	Sandy clay loam	58.5	15.6	25.9	1.69	20.4	20.3	10.5	11.2	9.1	0.15
74	Norfolk	Ap	0-10	Loamy sand	79.8	14.9	5.3	1.49	8.9	10.3	1.9	2.8	7.5	0.11
	"	B21t	10-20	Sandy clay	51.5	11.6	36.9	1.36	20.0	19.9	12.5	13.1	6.8	0.09
	"	B22t	20-34	Sandy clay loam	60.0	11.6	28.4	1.57	18.0	18.2	10.7	11.4	6.8	0.11
	"	B23t	34-42	Sandy clay loam	62.0	8.7	29.3	1.73	18.0	18.2	11.4	12.0	6.2	0.11
44	Norfolk	Ap	0-8	Loamy sand	85.9	10.0	4.1	1.31	6.1	7.9	1.3	2.3	5.6	0.07
	"	A2	8-18	Loamy sand	79.9	15.4	4.8	1.66	6.6	8.3	1.3	2.3	6.0	0.10
	"	B1	18-30	Sandy clay loam	63.5	12.2	24.3	1.49	16.2	16.6	8.0	8.8	7.8	0.12

TABLE 5.—MECHANICAL ANALYSIS, BULK DENSITY, MOISTURE EQUIVALENT, FIELD CAPACITY, FIFTEEN-ATMOSPHERE PERCENTAGE, WILTING PERCENTAGE, AND AVAILABLE WATER CAPACITY OF COASTAL PLAIN SOILS (Continued).

Site no.	Soil series	Horizon	Depth	Texture	Mechanical analysis			Bulk density	Moisture equiva-lent	Field capacity	Fifteen-atmosphere percent-age	Wilt-ing percent-age	Available water capacity	
					Sand	Silt	Clay							
	"	B2t	30-40	Sandy clay loam . . .	60.3	11.4	28.4	1.66	18.6	18.7	11.2	11.9	6.8	0.11
46	Norfolk	Ap	0-8	Loamy sand	88.5	8.3	3.3	1.18	5.2	7.1	1.2	2.2	4.9	0.06
	"	A2	8-19	Loamy sand	82.8	13.6	3.6	1.54	5.6	7.5	0.9	1.9	5.6	0.09
	"	B21t	19-36	Sandy clay loam . . .	59.5	12.7	27.8	1.48	17.7	17.9	9.9	10.6	7.3	0.11
	"	B22t	36+	Sandy clay loam . . .	59.4	12.4	28.2	1.62	19.0	19.1	12.0	12.6	6.5	0.11
25	Ocilla	Ap	0-6	Loamy sand	85.4	11.5	3.1	1.57	7.3	8.9	1.6	2.5	6.4	0.10
	"	A2	6-23	Loamy sand	81.8	10.7	7.5	1.56	6.7	8.4	1.9	2.8	5.6	0.09
	"	Bt	23-36	Sandy loam	67.6	16.2	16.2	1.59	12.1	13.1	5.7	6.5	6.6	0.10
37	Portsmouth	Ap	0-13	Loam	45.9	34.5	19.6	1.28	24.8	24.1	8.6	9.3	14.8	0.19
	"	B1g	13-26	Loamy sand	81.4	10.4	8.2	1.58	6.4	8.2	2.5	3.4	4.8	0.08
	"	B2tg	26+	Sandy loam	69.8	10.8	19.4	1.82	12.3	13.3	6.3	7.1	6.2	0.11
32	Rains	Ap	0-6	Fine sandy loam . . .	59.2	29.7	11.1	1.45	16.2	16.6	4.2	5.1	11.5	0.17
	"	B1g	6-14	Sandy clay loam . . .	47.6	27.2	25.2	1.66	17.7	17.9	10.6	11.3	6.6	0.11
	"	B2tg	14+	Sandy clay loam . . .	45.0	27.0	28.0	1.74	18.9	19.0	11.1	11.8	7.2	0.13
56	Rains	Ap	0-6	Fine sandy loam . . .	62.5	26.3	11.2	1.13	20.5	20.4	7.0	7.8	12.6	0.14
	"	B1g	6-20	Sandy loam	54.7	26.2	19.1	1.58	15.4	15.9	7.1	7.9	8.0	0.13
	"	B2tg	20-38	Clay loam	42.9	23.8	33.3	1.56	21.8	21.5	13.5	14.1	7.4	0.12
61	Rains	Ap	0-5	Fine sandy loam . . .	61.6	31.4	7.0	1.30	19.9	19.8	5.1	5.9	13.9	0.18
	"	A2g	5-12	Sandy loam	57.4	29.0	13.6	1.58	15.8	16.3	5.3	6.1	10.2	0.16
	"	B21tg	12-20	Clay loam	40.9	25.8	33.3	1.50	22.7	22.3	12.8	13.4	8.9	0.13
	"	B22tg	20-30	Clay loam	41.1	27.2	31.4	1.46	22.7	22.3	12.4	13.0	9.3	0.14
64	Rains	Ap	0-5	Fine sandy loam . . .	62.6	29.1	8.3	1.60	18.3	18.4	4.9	5.7	12.7	0.20
	"	B1g	5-11	Sandy loam	57.2	29.8	13.0	1.25	14.9	15.5	5.0	5.8	9.7	0.12
	"	B21tg	11-18	Clay loam	44.1	27.8	28.1	1.62	20.0	19.9	10.7	11.4	8.5	0.14
	"	B22tg	18-36	Clay loam	40.4	28.3	31.3	1.57	21.8	21.5	12.3	12.9	8.6	0.14
39	Rains	Ap	0-5	Loam	50.7	31.9	17.4	1.10	19.8	19.7	7.5	8.3	11.4	0.13
	"	Btg	5-21	Clay loam	35.5	33.6	30.9	1.66	19.8	19.7	11.4	12.0	7.7	0.13

85	Rains	Ap	0-8	Loam	44.1	32.2	23.7	1.06	34.3	32.3	13.4	14.0	18.3	0.19
	”	B1g	8-14	Sandy loam	61.5	21.7	16.8	1.47	16.0	16.5	6.4	7.2	9.3	0.14
	”	B21tg	14-30	Sandy clay loam	48.4	18.7	32.9	1.45	22.4	22.0	13.1	13.7	8.3	0.12
	”	B22tg	30+	Sandy clay loam	48.8	18.3	32.9	1.46	23.8	23.2	13.0	13.6	9.6	0.14
23	Rains	Ap	0-6	Loam sand	79.5	12.7	7.8	1.72	10.1	11.4	2.9	3.8	7.6	0.13
	”	A2g	6-17	Sandy loam	70.1	19.1	10.8	1.67	9.7	11.0	3.0	3.9	7.1	0.12
	”	Btg	17-36	Sandy clay loam	59.7	14.7	25.6	1.67	15.6	16.1	7.5	8.3	7.8	0.13
65	Rains	Ap	0-6	Loamy sand	53.5	39.2	7.3	1.59	14.9	15.5	3.2	4.1	11.4	0.18
	”	B1g	6-12	Loam	49.3	36.8	13.9	1.80	13.7	14.5	5.0	5.8	8.7	0.16
	”	B21g	12-24	Sandy loam	54.8	33.3	11.9	1.79	12.5	13.4	4.2	5.1	8.3	0.15
	”	B22g	24+	Sandy loam	63.6	27.2	9.2	1.92	10.1	11.4	2.7	3.6	7.8	0.15
26	Rains	Ap	0-5	Sandy loam	68.7	17.5	13.8	1.42	14.7	15.3	4.0	4.9	10.4	0.15
	”	B1g	5-12	Sandy clay loam	56.1	21.2	22.7	1.51	16.2	16.6	7.7	8.5	8.1	0.12
	”	B2tg	12-36	Sandy clay loam	52.6	16.0	31.4	1.53	18.5	18.6	10.2	10.9	7.7	0.12
47	Rains	Ap	0-8	Sandy loam	70.5	19.9	9.6	1.42	13.8	14.6	4.6	5.5	9.1	0.13
	”	B1g	12-24	Sandy loam	63.9	17.9	18.1	1.72	15.4	15.9	8.4	9.1	6.8	0.12
	”	B21tg	24-35	Sandy clay loam	58.0	15.6	26.4	1.74	16.2	16.6	10.0	10.7	5.9	0.10
	”	B22tg	35+	Sandy clay loam	61.1	5.1	33.8	1.70	19.7	19.7	11.8	12.4	7.3	0.12
31	Rutlege	Ap	0-7	Sandy loam	63.1	24.6	12.3	0.83	39.7	37.0	17.3	17.8	19.2	0.16
	”	Bg	7-20	Sandy loam	73.1	15.6	11.3	1.01	21.1	20.9	9.6	10.3	10.6	0.11
75	Varina	Ap	0-8	Fine sandy loam	66.5	26.8	6.7	1.28	11.5	12.6	2.8	3.7	8.9	0.11
	”	B21t	8-18	Clay loam	36.8	25.9	37.3	1.42	22.0	21.7	13.6	14.2	7.5	0.11
	”	B22t	18-36	Clay	29.1	24.4	46.5	1.44	27.8	26.7	18.9	19.3	7.4	0.11
	”	B23t	36+	Clay	20.2	21.7	58.1	1.48	32.5	30.7	22.7	23.0	7.7	0.11
90	Wagram	Ap	0-8	Loamy sand	86.8	10.2	3.0	1.23	5.6	7.5	1.3	2.3	5.2	0.06
	”	A2	8-28	Loamy sand	85.3	11.5	3.2	1.58	4.7	6.7	0.7	1.7	5.0	0.08
	”	B21t	28-40	Sandy clay loam	64.6	12.8	22.6	1.66	13.9	14.6	7.4	8.2	6.4	0.11
	”	B22t	40+	Sandy clay	53.3	10.2	36.5	1.57	20.6	20.4	13.6	14.2	6.2	0.10
92	Wagram	Ap	0-9	Loamy sand	85.6	11.2	3.2	1.38	4.7	6.7	1.2	2.2	4.5	0.06
	”	A2	9-32	Loamy sand	85.8	12.0	2.2	1.56	3.6	5.7	0.7	1.7	4.0	0.06
	”	Bt	32+	Sandy clay loam	65.2	14.0	20.8	1.48	11.7	12.7	6.8	7.6	5.1	0.06
18	Wando	Ap	0-12	Loamy fine sand	80.8	12.4	6.8	1.34	7.6	9.2	2.9	3.8	5.4	0.07
	”	C	12-48	Loamy sand	83.0	12.6	4.4	1.53	4.9	6.9	1.5	2.4	4.5	0.07

TABLE 5.—MECHANICAL ANALYSIS, BULK DENSITY, MOISTURE EQUIVALENT, FIELD CAPACITY, FIFTEEN-ATMOSPHERE PERCENTAGE, WILTING PERCENTAGE, AND AVAILABLE WATER CAPACITY OF COASTAL PLAIN SOILS (Continued).

Site no.	Soil series	Horizon	Depth	Texture	Mechanical analysis Sand	Silt	Clay	Bulk density	Moisture equivalent	Field capacity	Fifteen-atmosphere percentage	Wilting percentage	Available water capacity	
			Inches		%	%	%	*g/cc*		%			*g/100g**	*cc/cc**
71	Yonges	Ap	0-10	Loam	49.7	34.7	15.6	1.15	26.0	25.1	10.1	10.8	14.3	0.16
	"	B1g	10-26	Clay loam	40.4	28.8	30.8	1.50	21.7	21.4	10.2	10.9	10.5	0.16
	"	B2g	26-50	Clay	27.4	28.0	44.6	1.51	27.4	26.3	15.5	16.0	10.3	0.16
	"	B3g	50+	Sandy clay loam	68.2	4.1	27.7	1.35	19.7	19.7	8.8	9.5	10.2	0.14
10	Yonges	Ap	0-12	Loamy sand	79.6	15.0	5.4	1.33	9.7	11.0	2.2	3.1	7.9	0.11
	"	B2tg	12-36	Sandy clay loam	58.4	14.3	27.3	1.59	20.9	20.7	9.5	10.2	10.5	0.17
8	Yonges	A	0-16	Loamy sand	80.0	16.0	4.0	1.55	8.2	9.7	2.1	3.0	6.7	0.10
	"	Btg	16-24	Sandy clay loam	50.8	16.3	32.9	1.49	23.2	22.7	10.8	11.5	11.2	0.17
73	Yonges	Ap	0-8	Loamy sand	81.5	11.0	7.5	1.31	11.3	12.4	3.3	4.2	8.2	0.11
	"	A2	8-14	Sandy loam	79.0	12.0	9.0	1.60	8.6	10.1	3.3	4.2	5.9	0.09
	"	B1g	14-24	Sandy clay loam	65.5	11.0	23.5	1.62	16.4	16.8	8.6	9.3	7.5	0.12
	"	B21tg	24-36	Sandy clay loam	60.2	10.2	29.6	1.63	18.5	18.6	10.3	11.0	7.6	0.12
	"	B22tg	36-54	Sandy clay loam	62.7	8.1	29.2	1.48	19.4	19.4	10.8	11.5	7.9	0.12

* The available water capacity in g/100g is the percent on a weight basis and in cc/cc is the same as cubic inches/cubic inch or surface inches per inch depth.

TABLE 6.—MECHANICAL ANALYSIS, BULK DENSITY, MOISTURE EQUIVALENT, FIELD CAPACITY, FIFTEEN–ATMOSPHERE PERCENTAGE, WILTING PERCENTAGE, AND AVAILABLE WATER CAPACITY OF PIEDMONT SOILS.

Site no.	Soil series	Horizon	Depth	Texture	Mechanical analysis			Bulk density	Moisture equivalent	Field capacity	Fifteen-atmosphere percentage	Wilting percentage	Available water capacity	
					Sand	Silt	Clay							
			Inches		%	%	%	*g/cc*		%			*g/100g**	*cc/cc**
60	Alamance	Ap	0-6	Silt loam	38.2	55.0	6.8	1.32	20.2	20.1	3.6	4.5	15.6	0.21
	"	B1	6-16	Silt loam	21.5	59.5	19.0	1.58	23.3	22.8	7.5	8.3	14.5	0.23
	"	B2t	16+	Silty clay loam	19.4	51.8	28.8	1.56	25.8	24.9	11.7	12.3	12.6	0.20
55	Cecil	Ap	0-10	Loamy sand	76.5	17.9	5.6	1.48	8.4	9.9	2.6	3.5	6.4	0.09
	"	A2	10-19	Sandy loam	64.1	21.3	14.6	1.53	12.3	13.3	5.8	6.6	6.7	0.10
	"	B1	19-28	Sandy clay loam	51.8	20.6	27.6	1.60	18.0	18.2	10.1	10.8	7.4	0.12
	"	B2t	28+	Clay loam	44.5	18.6	36.9	1.58	22.2	21.8	14.3	14.9	6.9	0.11
52	Cecil	Ap	0-5	Sandy loam	70.5	20.0	9.5	1.35	16.6	17.0	5.2	6.0	11.0	0.15
	"	B21t	5-18	Clay	34.2	17.9	47.9	1.39	30.7	29.2	20.1	20.5	8.7	0.12
	"	B22t	18-30	Clay	34.6	19.0	46.4	1.40	34.0	32.0	22.1	22.4	9.6	0.13
54	Cecil	Ap	0-8	Sandy loam	74.2	18.1	7.7	1.51	10.1	11.4	4.2	5.1	6.3	0.10
	"	B21t	8-14	Clay	29.9	20.5	49.6	1.45	30.3	28.8	21.4	21.7	7.1	0.10
	"	B22t	14+	Clay	23.7	19.3	57.0	1.35	34.6	32.5	26.4	26.6	5.9	0.08
89	Chewacla	Ap	0-8	Silty clay loam	13.5	51.9	34.6	1.18	36.5	34.2	16.9	17.4	16.8	0.20
	"	C	8+	Clay loam	30.1	39.7	30.2	1.41	29.3	28.0	15.6	16.1	11.9	0.17
88	Congaree	Ap	0-6	Silty clay loam	11.4	51.2	37.4	0.90	35.8	33.6	19.3	19.7	13.9	0.13
	"	C1	6-14	Silty clay loam	19.2	49.5	31.3	1.25	31.9	30.2	15.7	16.2	14.0	0.18
	"	C2	14-30	Clay loam	38.0	33.3	28.7	1.46	26.0	25.1	12.0	12.6	12.5	0.18
	"	C3	30+	Clay loam	24.1	47.9	28.0	1.49	29.7	28.3	14.5	15.1	13.2	0.20
51	Davidson	Ap	0-4	Clay loam	28.4	32.3	39.3	1.29	25.5	24.7	16.3	16.8	7.9	0.10
	"	B21t	4-24	Clay	12.2	27.0	60.8	1.31	33.5	31.6	24.5	24.8	6.8	0.09
	"	B22t	24-32	Clay	10.5	37.9	51.6	1.22	37.0	34.6	26.4	26.6	8.0	0.10
49	Davidson	Ap	0-5	Sandy clay loam	56.5	19.9	23.6	1.34	16.4	16.8	7.7	8.5	8.3	0.11
	"	B1	6-20	Sandy clay loam	48.6	17.5	33.9	1.41	18.9	19.0	10.3	11.0	8.0	0.11
	"	B2t	22-30	Clay	40.7	12.5	46.8	1.49	22.6	22.2	15.0	15.5	6.7	0.10

TABLE 6.—MECHANICAL ANALYSIS, BULK DENSITY, MOISTURE EQUIVALENT, FIELD CAPACITY, FIFTEEN–ATMOSPHERE PERCENTAGE, WILTING PERCENTAGE, AND AVAILABLE WATER CAPACITY OF PIEDMONT SOILS (Continued).

Site no.	Soil series	Horizon	Depth	Texture	Mechanical analysis Sand	Mechanical analysis Silt	Mechanical analysis Clay	Bulk density	Moisture equivalent	Field capacity	Fifteen-atmosphere percentage	Wilting percentage	Available water capacity	Available water capacity
			Inches		%	%	%	*g/cc*		%			*g/100g**	*cc/cc**
53	Davidson	Ap	0-8	Sandy loam	60.8	19.3	19.9	1.57	15.4	15.9	7.9	8.7	7.2	0.11
	”	B21t	8-24	Clay	35.6	19.1	45.3	1.38	24.9	24.2	17.1	17.6	6.6	0.09
	”	B22t	24-38	Clay	32.1	18.2	49.7	1.41	28.1	26.9	20.1	20.5	6.4	0.09
80	Georgeville	Ap	0-7	Silt loam	44.8	38.3	16.9	1.49	18.6	18.7	7.9	8.7	10.0	0.15
	”	B21t	7-20	Silty clay loam	8.8	52.1	39.1	1.44	33.2	31.3	23.0	23.3	8.0	0.12
	”	B22t	20-40	Silty clay	10.9	40.8	48.3	1.46	34.4	32.4	23.7	24.0	8.4	0.12
59	Georgeville	Ap	0-6	Very fine sandy loam	53.7	33.5	12.8	1.44	18.4	18.5	5.7	6.5	12.0	0.17
	”	B21t	6-20	Clay	21.4	36.5	42.1	1.55	28.2	27.0	17.7	18.2	8.8	0.14
	”	B22t	20-36	Silty clay	14.4	42.0	43.6	1.52	32.7	30.9	20.6	21.0	9.9	0.15
50	Hayesville	Ap	0-5	Sandy loam	78.3	10.9	10.8	1.40	9.8	11.1	3.7	4.6	6.5	0.09
	”	B21t	5-24	Sandy clay	47.2	17.7	35.1	1.60	21.7	21.4	13.5	14.1	7.3	0.12
	”	B22t	24-30	Sandy clay	47.5	15.7	36.8	1.56	24.3	23.6	15.5	16.0	7.6	0.12
101	Herndon	Ap	0-6	Silt loam	30.2	60.4	9.4	1.45	17.9	18.1	4.4	5.3	12.8	0.19
	”	B21t	6-21	Silty clay	8.2	46.7	45.1	1.52	32.5	30.7	19.7	20.1	10.6	0.16
	”	B22t	21+	Silty clay	11.5	40.7	47.8	1.55	32.8	31.0	20.6	21.0	10.0	0.16
79	Iredell	Ap	0-5	Fine sandy loam	57.3	34.4	8.3	1.72	13.8	14.6	4.9	5.7	8.9	0.15
	”	B2t	5-18	Clay	16.4	22.9	60.7	1.27	59.1	53.7	28.9	29.0	24.7	0.31
	”	B3t	18+	Clay loam	31.8	30.7	37.5	1.51	37.2	34.8	20.7	21.1	13.7	0.21
78	Mecklenburg	Ap	0-7	Loam	37.1	40.7	22.2	1.58	24.1	23.5	11.7	12.3	11.2	0.18
	”	B21t	7-16	Clay	11.1	24.3	64.6	1.38	39.0	36.4	26.4	26.6	9.8	0.14
	”	B22t	16-30	Clay	7.4	31.0	61.6	1.26	45.3	41.8	30.3	30.4	11.4	0.14
	”	B23t	30+	Clay	16.2	33.5	50.3	1.24	44.6	41.2	27.8	28.0	13.2	0.16

* The available water capacity in g/100g is the percent on a weight basis and in cc/cc is the same as cubic inches/cubic inch or surface inches per inch depth.

TABLE 7.—AVAILABLE WATER CAPACITY OF COASTAL PLAIN SOILS.

Site no.	Soil type	Available water capacity in terms of surface inches of water 0-12" depth	0-24" depth	0-36" depth
22	Bayboro clay loam	2.16	4.20	6.24
70	Bladen fine sandy loam	1.32	2.64	3.96
36	Bladen fine sandy loam	1.54	3.18	5.10
41	Bladen fine sandy loam	1.68	3.33	5.13
4	Bladen loam	2.16	4.32	6.48
35	Bladen loamy sand	1.16	2.88	4.68
34	Bladen very fine sandy loam	1.44	3.19	4.99
68	Bladen very fine sandy loam	1.80	3.42	5.06
83	Capers clay loam	2.05	3.84	5.64
84	Capers clay loam	1.80	3.72	5.64
58	Capers clay	1.68	3.04	4.48
27	Charleston loamy sand	1.16	2.12	3.08
99	Chewacla loam	2.44	4.73	7.37
96	Chewacla loamy sand	*	*	*
98	Chewacla loam	2.40	4.72	7.00
97	Congaree fine sandy loam	1.96	4.40	6.98
100	Congaree loam	2.40	4.64	7.04
95	Congaree loamy sand	*	*	*
33	Coxville fine sandy loam	1.53	2.85	4.17
45	Coxville fine sandy loam	1.58	3.12	4.56
28	Coxville loam	2.01	3.51	4.95
38	Coxville loam	1.13	2.33	3.53
67	Craven loam	1.98	3.89	5.91
62	Edisto loamy fine sand	1.32	2.70	3.92
63	Edisto loamy fine sand	1.38	2.68	3.76
20	Edisto loamy sand	0.96	2.16	3.72
21	Edisto loamy sand	1.14	2.46	4.13
87	Fuquay loamy sand	0.72	1.44	2.56
72	Goldsboro sandy loam	1.26	2.47	3.59
66	Grady clay loam	1.20	2.18	3.29
43	Grady sandy clay loam	1.25	2.45	3.65
42	Grady sandy loam	1.47	2.84	4.28
86	Grady silt loam	2.38	3.97	5.25
102	Lakeland sand	0.84	1.66	2.38
29	Leaf loam	2.16	3.84	5.52
57	Lynchburg fine sandy loam	1.16	2.57	4.01
76	Lynchburg loamy sand	1.20	2.32	3.46
91	Lynchburg loamy sand	1.12	2.22	3.36
77	Lynchburg sandy loam	1.86	3.34	4.87
69	Meggett loamy fine sand	1.32	2.88	4.66
74	Norfolk loamy sand	1.28	2.44	3.76
44	Norfolk loamy sand	0.96	2.28	3.66
46	Norfolk loamy sand	0.84	2.02	3.34
25	Ocilla loamy sand	1.14	2.23	3.43
37	Portsmouth loam	2.28	3.35	4.61
32	Rains fine sandy loam	1.68	3.20	4.76
56	Rains fine sandy loam	1.62	3.14	4.58
61	Rains fine sandy loam	2.02	3.58	5.14
64	Rains fine sandy loam	1.72	3.46	5.02
39	Rains loam	1.56	3.12	4.68
85	Rains loam	2.08	3.56	5.12
23	Rains loamy sand	1.50	3.01	4.57
65	Rains loamy sand	1.98	3.78	5.58
26	Rains sandy loam	1.59	3.03	4.47
47	Rains sandy loam	1.52	2.96	4.18

* Bulk density values were missing.

TABLE 7.—AVAILABLE WATER CAPACITY OF COASTAL PLAIN SOILS (Cont.)

Site no.	Soil type	Available water capacity in terms of surface inches of water		
		0-12" depth	0-24" depth	0-36" depth
31	Rutlege sandy loam	1.67	2.99	4.31
75	Varina fine sandy loam	1.32	2.64	3.96
90	Wagram loamy sand	0.80	1.76	2.96
92	Wagram loamy sand	0.72	1.44	2.08
18	Wando loamy fine sand	0.84	1.68	2.52
71	Yonges loam	1.92	3.84	5.66
10	Yonges loamy sand	1.20	3.16	5.20
8	Yonges loamy sand	1.20	2.96	5.00
73	Yonges loamy sand	1.24	2.62	4.06

TABLE 8.—AVAILABLE WATER CAPACITY OF PIEDMONT SOILS.

Site no.	Soil type	Available water capacity in terms of surface inches of water		
		0-12" depth	0-24" depth	0-36" depth
60	Alamance silt loam	2.64	5.16	7.56
55	Cecil loamy sand	1.10	2.40	3.76
52	Cecil sandy loam	1.59	3.09	4.65
54	Cecil sandy loam	1.20	2.20	3.16
89	Chewacla silty clay loam	2.28	4.32	6.36
88	Congaree silty clay loam	1.74	3.88	6.16
51	Davidson clay loam	1.12	2.20	3.40
49	Davidson sandy clay loam	1.32	2.60	3.80
53	Davidson sandy loam	1.24	2.32	3.40
80	Georgeville silt loam	1.65	3.21	5.01
59	Georgeville very fine sandy loam	1.86	3.58	5.38
50	Hayesville sandy loam	1.29	2.73	4.17
101	Herndon silt loam	2.10	4.02	5.94
79	Iredell fine sandy loam	2.97	6.09	8.61
78	Mecklenburg loam	1.89	3.57	5.37

TABLE 9.—POROSITY, PERMEABILITY, pH, BULK DENSITY, AND SPECIFIC GRAVITY OF COASTAL PLAIN SOILS.

Site no.	Soil type	Horizon	Depth	pH	Bulk density	Specific gravity	Total porosity	Pores drained at 60 cm tension		Hydraulic conductivity	Permeability class	
								15 min.	15 hr.		Based on 15 min. pore drainage	Based on hydraulic conductivity
			Inches		*g/cc*	*g/cc*	%	%	%	*in./hr.*		
22	Bayboro clay loam	Ap	0-12	5.2	1.32	2.53	47.8	1.3	2.0	0.61	3	3
		Btg	12-36	4.6	1.31	2.60	49.6	0.7	1.2	0.30	2	3
70	Bladen fine sandy loam	A	0-10	5.3	1.19	2.47	51.8	2.8	10.1	0.37	4	3
		B21tg	10-19	5.4	1.19	2.64	54.9	3.9	6.3	9.48	4	6
		B22tg	19-38	5.0	1.19	2.67	55.4	0.6	2.2	0.80	2	4
		Cg	38-72	4.9	1.35	2.67	49.4	4.8	7.6	10.07	5	7
36	Bladen fine sandy loam	Ap	0-10	5.5	1.40	2.59	45.9	4.3	6.9	1.70	4	4
		B1g	10-19	5.4	1.56	2.63	40.7	4.2	7.0	5.49	4	6
		B2tg	20-34	4.8	1.58	2.66	40.6	0.1	0.4	0.11	1	2
41	Bladen fine sandy loam	Ap	0-13	5.3	1.49	2.60	42.7	1.8	. .	0.49	3	3
		A2	13-20	4.8	1.48	2.63	43.7	4.6	. .	7.56	4	6
		B2tg	20-36	4.1	1.33	2.69	50.6	0.3	. .	0.18	2	2
		Cg	36+	4.4	1.64	2.68	38.8	0.1	. .	0.04	1	1
4	Bladen loam	Ap	0-9	4.8	1.45	. . .	. . .	3.5	10.8	1.27	4	4
		Btg	9-36	4.7	1.22	. . .	. . .	0.4	4.8	0.16	2	2
35	Bladen loamy sand	Ap	0-8	5.7	1.26	2.63	52.1	5.2	7.8	8.17	5	6
		B1g	8-14	5.8	1.51	2.64	42.8	4.4	9.7	8.55	4	6
		B2tg	14-36	5.4	1.57	2.68	41.4	0.8	2.1	0.84	3	4
34	Bladen very fine sandy loam	Ap	0-8	5.5	1.38	2.62	47.3	6.3	10.4	8.06	5	6
		B1g	8-17	5.5	1.59	2.65	40.0	3.3	6.4	3.69	4	5
		B2tg	17-36	4.3	1.50	2.68	44.0	1.9	3.7	1.55	3	4
68	Bladen very fine sandy loam	Ap	0-8	5.5	1.43	2.59	44.8	2.2	4.7	0.19	4	2
		A2g	8-15	5.8	1.63	2.64	38.3	1.8	2.6	0.24	3	3
		B21tg	15-28	5.0	1.44	2.67	46.1	1.1	3.9	0.27	3	3
		B22tg	28+	5.3	1.45	2.69	46.1	0.2	1.7	0.06	1	2
83	Capers clay loam	A	0-12	5.9	1.12	2.42	53.7	0.9	2.4	0.74	3	3
		Cg	12-40	5.8	1.26	2.44	48.4	0.4	1.2	0.54	2	3

TABLE 9.—POROSITY, PERMEABILITY, pH, BULK DENSITY, AND SPECIFIC GRAVITY OF COASTAL PLAIN SOILS (Continued).

Site no.	Soil type	Horizon	Depth	pH	Bulk density	Specific gravity	Total porosity	Pores drained at 60 cm tension: 15 min.	Pores drained at 60 cm tension: 15 hr.	Hydraulic conductivity	Permeability class: Based on 15 min. pore drainage	Permeability class: Based on hydraulic conductivity
			Inches		*g/cc*	*g/cc*	%	%	%	*in./hr.*		
84	Capers clay loam	A	0-12	6.1	0.95	2.42	60.7	2.6	6.4	4.23	4	5
		Cg	12-40	5.3	1.13	2.44	53.7	0.25	1.2	0.08	1	2
58	Capers clay	A11	0-9	. .	1.00	. . .	. . .	9.1	12.6	32.68	6	7
		A12g	9-20	. .	0.90	. . .	. . .	7.7	10.9	29.86	6	7
		Cg	20-96	. .	0.93	. . .	. . .	0.3	2.3	0.17	2	2
27	Charleston loamy sand	Ap	0-10	5.3	1.60	2.64	39.4	3.0	10.6	2.0	4	4
		Bt	11-30	5.1	1.50	2.67	43.8	6.2	11.7	8.1	5	6
99	Chewacla loam	Ap	0-10	5.7	1.43	2.66	46.2	1.4	5.1	0.04	3	1
		C1	10-19	5.5	1.41	2.68	47.4	2.5	4.8	6.68	4	6
		C2	19+	5.1	1.15	2.66	56.8	0.8	1.7	0.21	3	3
98	Chewacla loam	Ap	0-8	. .	1.20	2.69	55.4	4.2	8.7	11.39	4	7
		C1	8-16	5.5	1.48	2.70	45.2	0.5	2.0	0.31	2	3
		C2g	16+	5.3	1.50	2.66	43.6	0.2	0.6	0.03	1	1
97	Congaree fine sandy loam	Ap	0-8	. .	1.23	. . .	. . .	7.0	13.5	1.31	5	4
		C1	8-16	. .	1.37	. . .	. . .	1.0	2.7	3.38	3	5
		C2	16-30	. .	1.38	. . .	. . .	0.8	2.4	2.40	3	4
		C3	30+	. .	1.52	. . .	. . .	0.9	3.2	1.81	3	4
100	Congaree loam	Ap	0-8	5.8	1.41	2.67	47.2	2.8	6.5	6.80	4	6
		C1	8-24	5.5	1.17	2.67	56.2	1.8	5.0	3.64	3	5
		C2	24-53	5.2	1.28	2.69	52.4	0.9	2.9	3.84	3	5
33	Coxville fine sandy loam	Ap	0-7	5.1	1.41	2.56	44.9	4.97	11.25	4.12	5	5
		B1g	8-14	5.3	1.55	2.65	41.5	7.15	16.1	9.95	5	6
		B2tg	14+	4.9	1.65	2.64	37.5	2.25	3.82	4.70	4	5
45	Coxville fine sandy loam	Ap	0-7	5.3	1.25	2.57	51.4	6.4	18.1	8.86	5	6
		B21tg	8-14	5.0	1.65	2.63	37.3	2.3	4.8	3.38	4	5
		B22tg	14-24	5.0	1.56	2.63	40.7	0.8	1.8	3.51	3	5
		B23tg	24+	4.8	1.59	2.64	39.8	0.4	1.1	1.62	2	4

28	Coxville loam	Ap	0-5	5.0	1.43	2.58	44.6	1.4	3.4	0.62	3	3
		B1tg	9-18	4.9	1.61	2.65	39.2	1.9	4.0	3.8	3	5
		B2tg	18+	4.7	1.56	2.66	41.4	...	...	...	...	...
38	Coxville loam	Ap	0-5	5.4	1.07	2.55	58.0	20.7	27.8	22.3	7	7
		B21tg	5-12	5.0	1.40	2.63	46.8	6.6	11.0	9.7	5	6
		B22tg	12+	4.9	1.45	2.65	45.3	4.8	7.0	8.3	5	6
67	Craven loam	Ap	0-6	5.9	1.56	2.67	41.6	2.4	5.0	0.26	4	3
		B21t	6-13	5.3	1.49	2.73	45.4	2.3	5.0	1.27	4	4
		B22t	13-26	4.8	1.52	2.72	44.1	1.2	3.2	0.66	3	3
		B3t	26+	4.7	1.61	2.71	40.6	0.3	0.6	0.05	2	2
62	Edisto loamy fine sand	Ap	0-12	..	1.33	...	...	5.2	9.2	0.76	5	3
		B	12-18	..	1.57	...	...	3.7	8.7	3.3	4	5
		A'2&B	18-26	..	1.56	...	...	3.1	5.4	0.7	4	3
		A'2	26-30	..	1.57	...	...	2.1	3.2	0.9	4	4
		B'X	38-42	..	1.61	...	...	1.0	2.0	0.2	3	3
63	Edisto loamy fine sand	Ap	0-6	..	1.37	...	...	4.0	11.1	1.3	4	4
		A2	6-14	..	1.60	...	...	2.3	5.9	0.6	4	3
		B	14-18	..	1.57	...	...	1.9	5.4	1.3	3	4
		A'2&B	18-24	..	1.62	...	...	2.5	6.0	1.9	4	4
		B'X	30-34	..	1.48	...	...	1.2	3.7	0.4	3	3
		B'X	42-46	..	1.48	...	...	1.0	2.9	0.7	3	3
20	Edisto loamy sand	A	0-18	5.0	1.30	2.63	50.6	3.6	4.5	3.33	4	5
		B1	18-24	5.5	1.66	2.66	37.6	1.6	3.8	0.59	3	3
		B2	24-36	6.1	1.64	2.69	39.0	2.2	3.3	2.41	4	4
21	Edisto loamy sand	Ap	0-9	5.2	1.41	2.64	46.6	3.4	12.9	1.88	4	4
		A2	9-29	5.2	1.48	2.63	43.7	7.5	14.1	3.40	5	5
		Bx	29-36	5.1	1.75	2.64	33.7	0.3	1.3	0.11	2	2
87	Fuquay loamy sand	Ap	0-8	5.0	1.44	2.62	45.0	18.7	29.6	21.03	7	7
		A2	8-26	4.9	1.50	2.64	43.2	16.7	32.4	44.52	7	7
		B1	26-38	5.1	1.63	2.65	38.5	7.1	10.9	5.22	5	6
		B2tcn	38-50	5.8	1.70	2.65	35.8	1.4	3.7	0.34	3	3
72	Goldsboro sandy loam	Ap	0-6	5.7	1.19	2.60	54.2	17.4	25.1	10.77	7	7
		A2	6-13	5.9	1.52	2.64	42.4	8.3	18.3	7.48	6	6
		B1	13-21	5.4	1.53	2.66	42.5	5.9	11.6	12.28	5	7

TABLE 9.—POROSITY, PERMEABILITY, pH, BULK DENSITY, AND SPECIFIC GRAVITY OF COASTAL PLAIN SOILS (Continued).

Site no.	Soil type	Horizon	Depth	pH	Bulk density	Specific gravity	Total porosity	Pores drained at 60 cm tension		Hydraulic conductivity	Permeability class	
								15 min.	15 hr.		Based on 15 min. pore drainage	Based on hydraulic conductivity
			Inches		*g/cc*	*g/cc*	%	%	%	*in./hr.*		
		B21t	21-28	6.1	1.67	2.67	37.5	2.7	5.2	1.31	4	4
		B22t	28-36	6.2	1.70	2.67	36.3	3.3	5.9	2.38	4	4
		B23t	36+	4.5	1.71	2.66	35.7	2.5	5.0	1.68	4	4
66	Grady clay loam	Ap	0-4	5.2	1.36	2.52	46.0	4.6	8.2	2.33	4	4
		B21tg	4-12	5.5	1.42	2.61	45.6	3.7	6.2	6.01	4	6
		B22tg	12-22	5.4	1.46	2.66	45.1	1.8	2.6	3.13	3	5
		B23tg	22-33	5.0	1.63	2.65	38.5	0.4	1.0	0.23	2	3
		B24tg	33+	5.7	1.67	2.65	37.0	0.8	1.6	0.27	3	3
43	Grady sandy clay loam	Ap	0-5	6.0	1.50	2.62	42.7	9.2	11.7	14.04	6	7
		B21tg	5-17	5.1	1.49	2.66	44.0	6.8	10.8	12.51	5	7
		B22tg	17+	5.2	1.64	2.69	39.0	1.7	4.3	1.14	3	4
42	Grady sandy loam	Ap	0-5	5.1	1.50	2.60	42.3	5.9	13.2	2.00	5	4
		B1g	5-19	4.9	1.69	2.64	36.0	3.0	6.7	2.75	4	5
		B2tg	19+	5.0	1.66	2.65	37.4	2.0	4.0	1.26	3	4
86	Grady silt loam	Ap	0-7	5.5	1.42	2.56	44.5	3.3	9.6	1.23	4	4
		B1g	7-15	5.6	1.66	2.65	37.4	2.5	5.8	2.26	4	4
		B2tg	15-32	5.3	1.58	2.66	40.6	1.1	2.2	3.11	3	5
102	Lakeland sand	Ap	0-8	5.8	1.50	2.62	42.7	13.9	26.7	16.72	7	7
		C1	8-22	5.9	1.67	2.65	37.0	10.5	25.9	24.82	6	7
		C2	22-42	5.5	1.56	2.65	41.1	10.0	28.4	25.24	6	7
		C3	42-60	5.0	1.59	2.65	40.0	18.3	24.5	26.51	7	7
29	Leaf loam	Ap	0-5	5.2	1.28	2.51	49.0	1.1	2.9	0.31	3	3
		Btg	8+	4.5	1.51	2.66	43.2	2.2	4.0	2.08	4	4
57	Lynchburg fine sandy loam	Ap	0-8	. .	1.27	. . .	. . .	14.2	25.8	13.4	7	7
		B21t	8-15	. .	1.34	. . .	. . .	8.3	12.4	6.7	6	6
		B22tg	15-32	. .	1.56	. . .	. . .	3.8	6.1	10.3	4	7
		B23tg	32+	. .	1.61	. . .	. . .	1.5	3.6	2.05	3	4

76	Lynchburg loamy sand	Ap	0-8	6.0	1.46	2.58	43.4	5.5	12.9	1.92	5	4
		A2	8-16	6.1	1.72	2.64	34.8	5.3	11.1	2.52	5	5
		Btg	16-30	5.7	1.66	2.65	37.4	3.0	6.6	1.88	4	4
		C	30-40	5.7	1.88	2.65	29.1	1.1	3.4	0.39	3	3
91	Lynchburg loamy sand	Ap	0-8	. .	1.59	. . .	. . .	13.5	22.2	15.09	7	7
		B21t	8-14	. .	1.58	. . .	. . .	5.6	10.2	8.08	5	6
		B22tg	14-30	. .	1.60	. . .	. . .	5.5	8.7	13.35	5	7
		B23tg	30+	. .	1.70	. . .	. . .	2.4	3.7	4.01	4	5
77	Lynchburg sandy loam	A	0-6	6.0	1.36	2.57	47.1	3.7	12.6	1.42	4	4
		B1	6-16	6.1	1.73	2.66	35.0	3.2	7.2	2.03	4	4
		B21	16-27	5.0	1.71	2.67	36.0	2.3	4.8	2.57	4	5
		B22tg	27+	5.3	1.73	2.68	35.4	0.7	2.4	0.10	2	2
69	Meggett loamy fine sand	Ap	0-8	5.9	1.33	2.62	49.2	2.2	6.6	0.85	4	4
		A2g	8-16	5.8	1.65	2.64	37.5	1.9	3.9	0.20	3	3
		B21tg	16-25	6.0	1.45	2.68	45.9	1.5	3.3	0.24	3	3
		B22tg	25-36	5.6	1.55	2.66	41.7	1.0	2.3	0.27	3	3
		B3g	36+	5.9	1.69	2.67	36.7	0.3	1.6	0.02	2	1
74	Norfolk loamy sand	Ap	0-10	5.8	1.49	2.62	43.1	8.3	15.0	3.79	6	5
		B21t	10-20	5.6	1.36	2.67	49.1	6.9	11.2	11.55	5	7
		B22t	20-34	5.9	1.57	2.68	41.4	5.0	7.9	10.22	5	7
		B23t	34-42	5.3	1.73	2.69	35.7	1.9	3.8	2.70	3	5
44	Norfolk loamy sand	Ap	0-8	6.5	1.31	2.65	50.6	8.2	28.4	11.08	6	7
		A2	8-18	6.3	1.66	2.65	37.4	2.6	11.8	2.74	4	5
		B1	18-30	5.4	1.49	2.66	44.0	6.6	9.4	9.17	5	6
		B2t	30-40	5.1	1.66	2.67	37.8	1.0	2.1	0.79	3	3
46	Norfolk loamy sand	Ap	0-8	6.4	1.18	2.64	55.3	4.4	19.3	6.22	4	6
		A2	8-19	6.3	1.54	2.66	42.1	3.8	15.1	4.38	4	5
		B21t	19-36	5.5	1.48	2.66	44.4	4.1	7.2	5.35	4	6
		22t	36+	5.7	1.62	2.67	39.3	0.9	2.6	0.51	3	3
25	Ocilla loamy sand	Ap	0-6	5.8	1.57	2.64	40.5	9.4	17.3	10.30	6	7
		A2	6-23	5.8	1.56	2.65	41.1	9.2	19.1	11.88	6	7
		Bt	23-36	5.4	1.59	2.65	40.0	7.2	9.4	8.06	5	6
37	Portsmouth loam	Ap	0-13	5.1	1.28	2.54	49.6	5.9	12.2	5.41	5	6
		B1g	13-26	5.8	1.58	2.63	39.9	14.7	19.9	25.17	7	7
		B2tg	26+	5.1	1.82	2.64	31.1	3.6	6.4	5.93	4	6

TABLE 9.—POROSITY, PERMEABILITY, pH, BULK DENSITY, AND SPECIFIC GRAVITY OF COASTAL PLAIN SOILS (Continued).

Site no.	Soil type	Horizon	Depth	pH	Bulk density	Specific gravity	Total porosity	Pores drained at 60 cm tension		Hydraulic conductivity	Permeability class	
								15 min.	15 hr.		Based on 15 min. pore drainage	Based on hydraulic conductivity
			Inches		*g/cc*	*g/cc*	%	%	%	*in./hr.*		
32	Rains fine sandy loam	Ap	0-6	5.0	1.45	2.58	43.8	3.38	7.48	2.24	4	4
		B1g	6-14	5.0	1.66	2.65	37.4	2.60	4.80	2.15	4	4
		B2tg	14+	4.9	1.74	2.67	34.8	1.03	1.75	1.39	3	4
56	Rains fine sandy loam	Ap	0-6	. .	1.13	. . .	. . .	15.3	23.0	10.1	7	7
		B1g	6-20	. .	1.58	. . .	. . .	5.3	10.1	4.0	5	5
		B2tg	20-38	. .	1.56	. . .	. . .	3.0	6.6	4.40	4	5
61	Rains fine sandy loam	Ap	0-5	. .	1.30	. . .	. . .	3.4	4.8	0.81	4	4
		A2g	5-12	. .	1.58	. . .	. . .	2.6	5.6	1.06	4	4
		B21tg	12-20	. .	1.50	. . .	. . .	3.3	5.0	8.20	4	6
		B22tg	20-30	. .	1.46	. . .	. . .	3.2	5.1	10.08	4	7
64	Rains fine sandy loam	Ap	0-5	. .	1.60	. . .	. . .	3.1	6.4	0.4	4	3
		B1g	5-11	. .	1.25	. . .	. . .	1.4	4.4	0.6	3	3
		B21tg	11-18	. .	1.62	. . .	. . .	1.9	4.2	4.4	3	5
		B22tg	18-36	. .	1.57	. . .	. . .	2.5	4.6	10.5	4	7
39	Rains loam	Ap	0-5	4.8	1.10	2.51	56.2	10.5	20.2	9.2	6	6
		Btg	5-21	4.9	1.66	2.65	37.4	5.2	7.2	6.8	5	6
85	Rains loam	Ap	0-8	5.5	1.06	2.42	56.2	2.0	5.0	0.45	3	3
		B1g	8-14	5.1	1.47	2.60	43.5	3.9	7.6	8.05	4	6
		B21tg	14-30	4.8	1.45	2.64	45.1	1.0	2.2	1.75	3	4
		B22tg	30+	5.3	1.46	2.65	44.9	0.4	0.9	0.15	2	2
23	Rains loamy sand	Ap	0-6	5.3	1.72	2.61	34.1	3.6	5.4	1.52	4	4
		A2g	6-17	5.1	1.67	2.67	37.5	5.9	13.8	2.16	5	4
		Btg	17-36	4.7	1.67	2.68	37.7	7.0	9.5	7.50	5	6
65	Rains loamy sand	Ap	0-6	6.0	1.59	2.59	38.6	5.4	10.3	2.11	5	4
		B1g	6-12	5.9	1.80	2.64	31.8	5.57	9.8	5.89	5	6
		B21g	12-24	5.7	1.79	2.64	32.2	5.2	10.0	4.33	5	5
		B22g	24+	5.1	1.92	2.65	27.5	1.9	3.4	0.57	3	3

26	Rains sandy loam	Ap	0-5	5.3	1.42	2.60	45.4	3.8	7.1	2.32	4	4
		B1g	5-12	5.1	1.51	2.67	43.4	2.7	5.2	1.66	4	4
		B2tg	12-36	5.0	1.53	2.68	42.9	4.2	6.8	4.66	4	5
47	Rains sandy loam	Ap	0-8	5.4	1.42	2.57	44.7	6.7	13.9	4.68	5	5
		B1g	12-24	5.1	1.72	2.63	34.6	5.9	9.4	7.08	5	6
		B21tg	24-35	4.7	1.74	2.63	33.8	3.0	5.1	2.63	4	5
		B22tg	35+	4.6	1.70	2.64	35.6	0.6	1.7	0.41	2	3
31	Rutlege sandy loam	Ap	0-7	5.0	0.83	2.05	59.5	0.9	2.9	0.23	3	3
		Bg	7-20	5.3	1.01	2.35	57.0	9.6	14.5	19.20	6	7
75	Varina fine sandy loam	Ap	0-8	5.8	1.28	2.63	51.3	5.1	8.6	1.49	5	4
		B21t	8-18	5.9	1.42	2.68	47.0	4.2	7.8	6.74	4	6
		B22t	18-36	5.6	1.44	2.69	46.5	2.9	4.9	13.75	4	7
		B23t	36+	5.5	1.48	2.71	45.4	0.9	2.1	3.50	3	5
90	Wagram loamy sand	Ap	0-8	5.8	1.23	2.63	53.2	22.1	30.9	28.96	7	7
		A2	8-28	5.7	1.58	2.65	40.4	9.9	22.3	8.23	6	6
		B21t	28-40	5.3	1.66	2.67	37.8	2.3	6.2	0.84	4	4
		B22t	40+	5.0	1.57	2.69	41.7	1.2	3.3	0.50	3	3
92	Wagram loamy sand	Ap	0-9	. .	1.38	. . .	. . .	21.9	29.3	20.75	7	7
		A2	9-32	. .	1.56	. . .	. . .	10.2	25.1	15.53	6	7
		Bt	32+	. .	1.48	. . .	. . .	9.7	13.0	8.07	6	6
18	Wando loamy fine sand	Ap	0-12	7.2	1.34	. . .	. . .	14.7	28.4	31.37	7	7
		C	12-48	7.1	1.53	. . .	. . .	14.5	28.4	23.10	7	7
71	Yonges loam	Ap	0-10	5.2	1.15	2.11	45.5	2.4	9.2	1.63	4	4
		B1g	10-26	5.4	1.50	2.64	43.2	1.8	3.6	0.79	3	3
		B2g	26-50	5.8	1.51	2.65	43.0	2.8	4.1	0.94	4	4
		B3g	50+	6.2	1.35	2.67	49.4	1.1	2.6	1.16	3	4
10	Yonges loamy sand	Ap	0-12	5.8	1.33	. . .	. . .	7.1	18.2	9.67	5	6
		B2tg	12-36	4.0	1.59	. . .	. . .	2.8	7.6	4.52	4	5
8	Yonges loamy sand	A	0-16	5.5	1.55	. . .	. . .	3.5	13.1	7.37	4	6
		Btg	16-24	4.4	1.49	. . .	. . .	1.7	5.6	1.25	3	4
73	Yonges loamy sand	Ap	0-8	4.7	1.31	2.58	49.2	8.3	19.8	3.87	6	5
		A2	8-14	5.1	1.60	2.65	39.6	4.8	11.9	3.07	5	5
		B1g	14-24	5.6	1.62	2.66	39.1	2.1	5.4	2.14	4	4
		B21tg	24-36	5.9	1.63	2.67	39.0	0.7	2.8	0.29	2	3
		B22tg	36-54	6.0	1.48	2.68	44.8	. .	. .	. . .	.	.

TABLE 10.—POROSITY, PERMEABILITY, pH, BULK DENSITY, AND SPECIFIC GRAVITY OF PIEDMONT SOILS.

Site no.	Soil type	Horizon	Depth	pH	Bulk density	Specific gravity	Total porosity	Pores drained at 60 cm tension: 15 min.	Pores drained at 60 cm tension: 15 hr.	Hydraulic conductivity	Permeability class: Based on 15 min. pore drainage	Permeability class: Based on hydraulic conductivity
			Inches		*g/cc*	*g/cc*	%	%	%	*in./hr.*		
60	Alamance silt loam	Ap	0-6	. .	1.32	. . .	. . .	7.0	9.6	1.17	5	4
		B1	6-16	. .	1.58	. . .	. . .	3.5	8.6	0.30	4	3
		B2t	16+	. .	1.56	. . .	. . .	2.9	7.6	0.23	4	3
55	Cecil loamy sand	Ap	0-10	6.3	1.48	. . .	. . .	9.57	24.28	22.60	6	7
		A2	10-19	5.6	1.53	. . .	. . .	15.21	19.99	53.10	7	7
		B1	19-28	5.3	1.60	. . .	. . .	4.79	9.09	8.50	5	6
		B2t	28+	5.0	1.58	. . .	. . .	1.87	4.14	2.72	3	5
52	Cecil sandy loam	Ap	0-5	6.2	1.35	2.61	48.3	10.1	18.2	10.42	6	7
		B21t	5-18	5.1	1.39	2.69	48.3	4.4	7.3	4.91	4	5
		B22t	18-30	5.1	1.40	2.70	48.1	1.3	2.0	1.32	3	4
54	Cecil sandy loam	Ap	0-8	6.0	1.51	2.63	42.6	7.38	17.71	5.10	5	6
		B21t	8-14	5.0	1.45	. . .	. . .	2.32	5.45	1.03	4	4
		B22t	14+	4.8	1.35	. . .	. . .	1.18	2.73	0.56	3	3
89	Chewacla silty clay loam	Ap	0-8	5.6	1.18	2.62	55.0	1.0	3.2	0.48	3	3
		C	8+	5.3	1.41	2.68	47.4	0.8	2.3	1.00	3	4
88	Congaree silty clay loam	Ap	0-6	5.5	0.90	2.63	65.8	14.7	22.3	17.15	7	7
		C1	6-14	5.3	1.25	2.65	52.8	4.6	8.6	1.92	4	4
		C2	14-30	4.9	1.46	2.68	45.5	1.2	4.0	1.72	3	4
		C3	30+	4.7	1.49	2.69	44.6	0.7	2.6	1.16	2	4
51	Davidson clay loam	Ap	0-4	5.6	1.29	2.75	53.1	5.3	12.9	3.17	5	5
		B21t	4-24	5.5	1.31	2.77	52.7	2.4	4.1	3.67	4	5
		B22t	24-32	5.4	1.22	2.81	56.6	1.1	3.2	0.89	3	4
49	Davidson sandy clay loam	Ap	0-5	6.0	1.34	2.68	50.0	9.3	23.1	10.66	6	7
		B1	6-20	5.8	1.41	2.70	47.8	7.8	10.7	28.28	6	7
		B2t	22-30	5.7	1.49	2.70	44.8	2.3	4.8	4.21	4	5

TABLE 10.—POROSITY, PERMEABILITY, pH, BULK DENSITY, AND SPECIFIC GRAVITY OF PIEDMONT SOILS (Continued).

Site no.	Soil type	Horizon	Depth	pH	Bulk density	Specific gravity	Total porosity	Pores drained at 60 cm tension		Hydraulic conductivity	Permeability class	
								15 min.	15 hr.		Based on 15 min. pore drainage	Based on hydraulic conductivity
			Inches		*g/cc*	*g/cc*	%	%	%	*in./hr.*		
53	Davidson sandy loam	Ap	0-8	5.7	1.57	2.69	41.6	8.2	12.6	13.79	6	7
		B21t	8-24	5.4	1.38	2.71	49.1	8.8	12.1	18.00	6	7
		B22t	24-38	5.5	1.41	2.70	47.8	4.5	6.8	7.03	4	6
80	Georgeville silt loam	Ap	0-7	5.5	1.49	2.66	44.0	2.4	6.4	0.74	4	3
		B21t	7-20	5.7	1.44	2.72	47.1	1.3	3.1	0.82	3	4
		B22t	20-40	5.2	1.46	2.73	46.5	0.5	1.4	0.16	2	2
59	Georgeville very fine sandy loam	Ap	0-6	. .	1.44	. . .	. . .	6.4	10.7	2.63	5	5
		B21t	6-20	. .	1.55	. . .	. . .	3.5	5.7	1.31	4	4
		B22t	20-36	. .	1.52	. . .	. . .	1.6	3.4	0.59	3	3
50	Hayesville sandy loam	Ap	0-5	5.6	1.40	2.65	47.2	4.2	23.1	7.07	4	6
		B21t	5-24	5.0	1.60	2.65	39.6	2.1	4.0	2.17	4	4
		B22t	24-30	5.0	1.56	2.67	41.6	1.2	3.7	0.54	3	3
101	Herndon silt loam	Ap	0-6	5.3	1.45	2.64	45.1	2.7	6.5	0.17	4	2
		B21t	6-21	5.5	1.52	2.78	45.3	2.4	4.7	1.11	4	4
		B22t	21+	4.9	1.55	2.76	43.8	0.8	2.8	0.08	3	2
79	Iredell fine sandy loam	Ap	0-5	5.5	1.72	2.92	41.1	1.6	5.9	0.11	3	2
		B2t	5-18	5.3	1.27	2.79	54.5	0.18	0.50	0.01	1	1
		B3t	18+	5.6	1.51	2.82	46.5	0.21	0.64	0.04	1	1
78	Mecklenburg loam	Ap	0-7	5.4	1.58	2.97	46.8	3.9	7.0	1.64	4	4
		B21t	7-16	5.2	1.38	2.87	51.9	0.7	1.5	0.20	2	3
		B22t	16-30	5.0	1.26	2.86	55.9	0.7	1.9	0.37	2	3
		B23t	30+	4.9	1.24	2.85	56.5	0.3	1.2	0.05	2	2

TABLE 11.—SOIL PERMEABILITY CLASSIFICATION OF EACH SOIL SERIES SAMPLED BASED ON LOWEST PERMEABILITY DESIGNATION ACCORDING TO 15-MINUTE PORE DRAINAGE VALUES OR HYDRAULIC CONDUCTIVITIES IN THE 0- TO 24-INCH DEPTH.

Permeability class no.	Soil series
1	Bladen, Capers, Chewacla, Chewacla, Iredell.
2	Bayboro, Bladen, Bladen, Bladen, Bladen, Capers, Capers, Grady, Georgeville, Herndon, Mecklenburg.
3	Alamance, Bladen, Cecil, Cecil, Chewacla, Congaree, Congaree, Congaree, Coxville, Coxville, Craven, Edisto, Edisto, Edisto, Georgeville, Grady, Grady, Grady, Leaf, Meggett, Rains, Rains, Rains, Rutlege, Yonges, Yonges.
4	Bladen, Charleston, Coxville, Davidson, Davidson, Edisto, Goldsboro, Hayesville, Lynchburg, Lynchburg, Lynchburg, Norfolk, Norfolk, Rains, Rains, Rains, Rains, Rains, Varina, Yonges, Yonges.
5	Cecil, Coxville, Lynchburg, Norfolk, Ocilla, Portsmouth, Rains, Rains.
6	Davidson, Lakeland, Wagram, Wagram.
7	Fuquay, Wando.

TABLE 12.—SOIL PERMEABILITY CLASSIFICATION OF EACH SOIL SERIES SAMPLED BASED ON LOWEST PERMEABILITY DESIGNATION ACCORDING TO 15-MINUTE PORE DRAINAGE VALUES OR HYDRAULIC CONDUCTIVITIES IN THE 0- TO 36-INCH DEPTH.

Permeability class no.	Soil series
1	Bladen, Bladen, Capers, Chewacla, Chewacla, Iredell.
2	Bayboro, Bladen, Bladen, Bladen, Capers, Capers, Congaree, Coxville, Craven, Edisto, Georgeville, Grady, Herndon, Lynchburg, Mecklenburg, Rains, Rains, Yonges.
3	Alamance, Bladen, Bladen, Cecil, Cecil, Cecil, Chewacla, Congaree, Congaree, Coxville, Davidson, Edisto, Edisto, Edisto, Georgeville, Grady, Grady, Grady, Hayesville, Leaf, Lynchburg, Lynchburg, Meggett, Norfolk, Norfolk, Rains, Rains, Rains, Rutlege, Yonges, Yonges.
4	Charleston, Coxville, Davidson, Davidson, Goldsboro, Lynchburg, Norfolk, Portsmouth, Rains, Rains, Rains, Rains, Varina, Wagram, Yonges.
5	Coxville, Edisto, Ocilla, Rains.
6	Lakeland, Wagram.
7	Wando.

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