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**Chemical
Characteristics
of
Fauquier County
Soils**



**VIRGINIA AGRICULTURAL EXPERIMENT STATION
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CHEMICAL CHARACTERISTICS OF

FAUQUIER COUNTY SOILS*

Introduction

A soil survey has been completed in Fauquier county. This survey was a cooperative effort between the Virginia Agricultural Experiment Station and the Bureau of Plant Industry, Soils and Agricultural Engineering, U.S.D.A. To get the greatest value from the survey, detailed studies were made of the physical and chemical properties of the soils.

The soil survey map shows the extent and location of the various kinds of soil in the county. The soil survey report classifies the kinds of soils and groups them according to use and management classes for specific purposes. These groupings are based on interpretations of certain soil characteristics, such as their morphological, genetic, physical and chemical properties. As an aid in classifying the different soils and in making interpretations for use and management, certain laboratory studies were made in conjunction with the survey. On completion of the field mapping, soil samples were collected for chemical analysis. The chemical data presented here supplements the information included in the soil survey report and related publications.

Explanation of Chemical Data

When a proper balance of plant food and organic matter is maintained in the surface 7 inches of well-drained soil, optimum plant growth may be expected. Certain properties of the soil profile such as effective depth, structure, texture, and consistency are also quite im-

portant. These characteristics largely determine water storage, water movement and crop adaptation to the soil. The parent material, designated by the "C" horizon in Table 1, is in some cases quite important as a source of plant nutrients. Examples of this are found in some of the younger soils such as Brandywine and Catoctin. In Table 1 the "A₀" horizon is not true soil but consists of partly decomposed plants. The "A" horizon includes the portion of the soil which is plowed. In Virginia, that is the layer of the soil most affected by leaching and erosion. The "B" horizons represent layers of subsoil, the "B₂" ordinarily being finer textured than the other layers of the soil profile. Soil parent material is the "C" horizon, and where this is layered, "C₁", "C₂", etc., are used.

Degree of soil acidity is expressed by pH. The following descriptive designations have been applied to pH values:

Extremely acid.....	Below 4.5
Very strongly acid.....	4.5 - 5.0
Strongly acid.....	5.1 - 5.5
Medium acid.....	5.6 - 6.0
Slightly acid.....	6.1 - 6.5
Neutral (essentially).....	6.6 - 7.3
Mildly alkaline.....	7.4 - 7.8
Moderately alkaline.....	7.9 - 8.4
Strongly alkaline.....	8.5 - 9.0
Very strongly alkaline.....	9.1+

Truog phosphorus, a dilute acid soluble phosphorus, estimates the amount of phosphorus readily available to plants in acid soils. Generally, it is considered that 25 ppm. (50 lbs. per acre) is adequate for most crops grown in Virginia.

Calcium, magnesium, and potassium, all exchangeable cations, are important plant nutrients. When in exchangeable form, these elements are available to plants to

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varying degrees. Potassium is generally more available and calcium less available than magnesium. As these bases are removed by plants, aluminum and hydrogen ions take their place. Because aluminum, like hydrogen acts as an acid, the exchangeable hydrogen reported includes exchangeable aluminum. The percent base saturation is the proportion of the total cations that is made up of exchangeable calcium, magnesium, and potassium. For Virginia conditions a fertile soil usually has a high percent base saturation.

The sum of the exchangeable cations, including aluminum and hydrogen, is equal to the total cation exchange capacity of the soil. The value is usually high when there is more clay or organic matter content in the soil. Certain types of clay yield a higher value than others, but with few exceptions, humus or organic matter give a higher value, pound for pound, than clay. The higher the cation exchange capacity, the greater the nutrient holding capacity of the soil. Soils with low cation exchange capacities release stored nutrients to plants relatively more easily at lower total nutrient content. It is much easier to raise the pH of a low exchange capacity soil.

The notation milli-equivalents per 100 grams of soil can be converted to pounds per acre of soil on the basis that an acre of soil 6- or 7-inches deep weighs approximately 2,000,000 pounds. One

milli-equivalent per 100 gms. of soil is equivalent to 940 pounds of potash per acre or 1,000 pounds of limestone (CaCO_3) per acre furrow slice.

In Virginia a soil condition of at least 50 percent base saturation is desired in the surface 6- to 7-inches. These bases should be present in a proportion of about ten times as much calcium and two times as much magnesium as potassium as long as there is a minimum of 0.3 m.e. of potassium. A soil with a total of 10 m.e. of exchangeable cations would have a good nutrient condition if there were 5 m.e. hydrogen, 4 m.e. calcium, 0.7 m.e. magnesium, and 0.3 m.e. potassium. If the soil has a high cation exchange capacity, it would be important to have much more calcium and slightly more potassium and magnesium. If the soil has a smaller cation exchange capacity, the calcium requirement is less, but the magnesium and, most important, the potassium level should be the same. Many cultivated soils in parts of Virginia contain a high proportion of magnesium as a result of the widespread use of dolomitic limestone. This may be unfavorable if the build-up of magnesium continues.

Table 1 gives chemical characteristics of 59 soil types mapped in the Soil Survey of Fauquier county. These soils are important throughout the northern Piedmont area of Virginia as well as in Fauquier county.

TABLE 1

Hor- izon:	Depth (in.)	pH	Total P (ppm.)	Organic matter (%)	Exchangeable cations ¹					Base Satura- tion (%)
					Ca	Mg	K	H	Total*	

ALBEMARLE LOAM (22)²

A ₁	0-1	3.81	11.6	12.42	0.72	0.22	0.22	18.28	19.44	5.97
A ₂	1-9	4.40	1.1	0.85	0.15	0.12	0.07	4.66	5.00	6.80
B ₁	9-12	4.58	1.8	0.70	0.24	0.20	0.13	5.20	5.77	9.88
B ₂	12-32	4.56	0.0	0.41	0.23	0.70	0.32	9.23	10.48	11.93
C ₁	32 +	4.71	0.0	0.26	0.11	0.35	0.20	9.00	9.66	6.83

BELVOIR LOAM (38)

A ₁	0-1	4.72	18.2	10.64	2.35	0.74	0.41	17.58	21.08	16.60
A ₂	1-7	4.50	5.9	1.59	0.16	0.14	0.08	7.16	7.54	5.04
B ₁	7-14	4.43	2.7	0.79	0.17	0.34	0.10	7.62	8.23	7.41
B ₂	14-23	4.31	0.0	0.27	0.17	2.00	0.19	15.88	18.24	12.94
C	23 +	4.50	1.4	0.13	0.49	1.95	0.15	7.54	10.13	25.57

BERMUDIAN SILT LOAM (11)

A	0-16	5.60	3.2	1.90	6.67	2.30	0.06	7.65	16.68	54.14
B	16 +	5.81	6.4	1.42	7.43	2.46	0.06	7.35	17.30	57.51

BOWMANVILLE SILT LOAM (13)

A	0-8	5.28	3.2	2.41	3.88	1.56	0.09	8.21	13.74	40.25
B ₁	8-17	4.99	0.0	0.81	2.75	1.76	0.07	6.66	11.24	40.75
B ₂	17 +	5.07	0.0	0.41	3.31	3.83	0.15	7.21	14.50	50.28

BRADDOCK STONY LOAM (83)

A ₁	0-5	4.98	13.6	4.86	2.52	0.43	0.22	10.31	13.48	23.52
A ₂	5-11	4.49	2.7	3.15	0.35	0.09	0.08	8.67	9.19	5.66
B ₁	11-18	4.78	0.9	1.35	0.50	1.08	0.36	10.04	11.98	16.19
B ₂	18-49	4.81	0.5	0.70	0.17	1.23	0.45	14.07	15.92	11.62
C	49 +	4.91	0.0	0.37	0.12	0.70	0.16	14.64	15.62	6.27

BRADDOCK STONY LOAM (83)

A ₁	0-1	4.51	9.5	6.80	0.26	0.13	0.24	11.60	12.23	5.15
A ₂	1-8	4.80	2.7	2.31	0.12	0.04	0.05	4.89	5.10	4.12
B ₁	8-12	4.50	4.5	0.98	0.09	0.05	0.08	5.96	6.18	3.56
B ₂	12 +	4.82	4.5	0.41	0.11	0.94	0.15	11.58	12.78	9.39

BRANDYWINE GRITTY LOAM (39)

A	0-6	4.84	2.7	3.22	0.90	0.23	0.11	10.14	11.38	10.90
C ₁	6-30	5.60	1.8	0.28	1.33	0.70	0.31	4.11	6.45	36.28
C ₂	30 +	5.09	3.9	0.08	0.37	0.35	0.18	3.53	4.43	20.32

^{1/2} Numbers refer to references in back of report.

Hor- izon	Depth (in.)	pH	Truog P (ppm.)	Organic matter (%)	Exchangeable cations 1/					Base Satura- tion (%)
					Ca	Mg	K	H	Total*	

BRANDYWINE LOAM (49)

A	0-9	4.52	3.4	1.86	0.20	0.09	0.09	7.87	8.25	4.61
C ₁	9-19	4.92	0.9	0.62	0.28	1.16	0.16	7.58	9.18	17.43
C ₂	19-38	4.89	0.5	0.32	0.28	1.26	0.14	6.90	8.58	19.58
C ₃	38 +	5.21	1.8	0.18	0.56	1.69	0.09	3.69	6.03	38.81

BRANDYWINE SILT LOAM (149)

A	0-10	4.89	72.2	1.71	2.33	0.54	0.13	11.66	14.66	20.46
C ₁	10-20	5.41	55.4	0.34	3.25	0.63	0.14	9.23	13.25	30.34
C ₂	20-40	5.20	134.9	0.32	4.54	1.17	0.19	11.12	17.02	34.67
D	40 +	5.47	186.3	0.13	5.38	1.35	0.15	7.52	14.40	47.78

BUCKS SILT LOAM (71)

A ₁	0-8	5.52	5.0	2.47	3.76	0.69	0.16	5.96	10.57	43.61
B ₁	8-21	5.28	0.0	0.62	3.67	0.93	0.13	5.21	9.94	47.59
B ₂	21-30	4.47	0.0	0.17	3.02	4.22	0.38	13.08	20.70	36.81
C ₁	30 +	4.38	0.0	0.13	1.55	3.52	0.49	15.73	21.29	26.12

CALVERTON SILT LOAM (78)

A ₁	0-2	4.83	17.9	11.95	3.11	0.86	0.49	17.86	22.32	19.98
A ₂	2-12	4.51	1.1	1.08	0.07	0.03	0.06	4.13	4.29	3.73
B	12-20	4.67	0.0	0.37	0.29	0.62	0.09	6.26	7.26	13.77
C ₁	20-42	4.72	0.0	0.21	0.06	0.53	0.08	10.19	10.86	6.17
C ₂	42 +	4.62	0.0	0.14	0.02	1.00	0.14	17.31	18.47	6.28

CATLETT SILT LOAM (76)

A	0-8	5.11	5.9	1.90	4.25	4.77	0.20	8.40	17.62	52.33
C ₁	8-14	4.89	0.0	0.69	1.25	6.22	0.21	11.74	19.42	39.55
C ₂	14 +	5.12	0.5	0.28	0.57	12.02	0.13	6.08	18.80	67.66

CATOCTIN SILT LOAM (53)

A	0-6	4.87	1.8	1.57	1.11	0.66	0.15	8.33	10.25	18.73
C ₁	6-14	5.11	0.0	0.66	7.10	7.22	0.21	8.41	22.94	63.34
C ₂	14 +	5.59	0.0	0.20	11.64	9.62	0.21	5.36	26.83	80.02

CHESTER LOAM (23)

A ₁	0-2	6.29	34.5	6.31	9.25	1.94	0.63	9.31	21.13	55.94
A ₂	2-8	5.00	5.0	1.69	0.73	0.45	0.24	8.52	9.94	14.29
B ₁	8-17	5.02	1.8	0.51	1.06	1.84	0.43	8.13	11.46	29.06
B ₂	17-31	4.98	0.0	0.23	1.81	2.36	0.55	11.56	16.28	28.99
C ₁	31-43	5.20	4.1	0.20	4.33	4.20	0.16	9.40	18.09	48.04
C ₂	43 +	5.28	10.0	0.26	7.32	4.45	0.08	8.99	20.84	56.86

Hor- izon:	Depth (in.)	pH	Truog P (ppm.)	Organic matter (%)	Exchangeable cations ^{1/}				Base Satura- tion	
:	:	:	:	:	Ca	Mg	K	H	Total*	(%)

CHESTER SILT LOAM (123)

A	0-10	4.77	6.4	4.05	1.98	0.81	0.54	16.38	19.71	16.89
B	10-28	5.12	4.1	0.46	2.47	2.87	0.69	11.25	17.28	34.90
C ₁	28-46	5.02	5.5	0.18	0.72	2.16	0.23	12.25	15.36	20.25
C ₂	46 +	4.99	2.3	0.21	0.25	2.22	0.16	13.31	15.94	16.50

CHEWACLA SILT LOAM (2)

A	0-12	5.53	8.2	1.88	4.21	1.65	0.09	7.43	13.38	44.47
B ₁	12-25	6.10	11.4	1.12	4.86	1.88	0.08	6.22	13.04	52.30
B ₂	25 +	5.14	9.5	1.55	2.52	0.90	0.09	8.44	11.95	29.37

CLIFTON STONY SILT LOAM (34)

A	0-6	6.10	0.5	4.50	7.57	1.64	0.55	12.46	22.22	43.92
B	6-21	4.94	0.0	0.67	2.48	1.51	0.31	11.70	16.00	26.88
C	21 +	5.10	0.0	0.36	3.32	2.21	0.15	10.43	16.11	35.26

CONGAREE SILT LOAM (3)

A	0-27	5.12	5.5	1.59	2.49	0.77	0.14	8.59	11.99	28.36
B ₁	27-52	5.19	5.9	1.12	2.77	0.51	0.04	5.68	9.00	36.89
B ₂	52 +	5.12	6.8	1.55	4.03	0.88	0.04	8.25	13.20	37.50

CROTON SILT LOAM (80)

A ₁	0-2	5.11	24.5	12.28	7.77	1.94	0.29	16.11	26.11	38.30
A ₂	2-8	4.57	6.4	2.86	0.94	0.67	0.11	10.51	12.23	14.06
B ₁	8-12	4.45	0.0	0.72	0.59	1.04	0.10	11.93	13.66	12.66
B ₂	12-22	4.57	0.0	0.50	1.58	2.75	0.18	20.26	24.77	18.21
B ₃	22-31	4.49	0.0	0.48	3.90	6.15	0.32	23.43	33.80	30.68
C	31 +	5.15	0.0	0.36	9.61	12.05	0.36	8.45	30.47	72.27

CULPEPER FINE SANDY LOAM (16)

A ₁	0-1	4.30	5.0	5.77	0.48	0.18	0.12	7.77	8.55	9.12
A ₂	1-9	4.61	1.4	1.39	0.15	0.05	0.09	3.54	3.83	7.57
B ₁	9-14	4.51	0.0	1.00	0.08	0.49	0.20	7.73	8.50	9.06
B ₂	14-24	4.62	0.0	0.67	0.20	1.66	0.44	11.91	14.21	16.19
B ₃	24-38	4.89	0.0	0.43	0.13	0.26	0.25	14.05	14.69	4.36
C ₁	38 +	4.75	0.0	0.19	0.04	0.02	0.11	12.13	12.30	1.38

DAVIDSON CLAY (31)^{2/}

A ₁	0-7	5.54	0.5	2.33	3.95	1.10	0.48	7.09	12.62	43.82
B ₁	7-21	5.80	1.4	0.45	4.66	2.85	0.26	6.77	14.54	53.44
B ₂	21-70	4.96	3.6	0.20	1.85	2.19	0.30	10.01	14.35	30.24
C	70 +	6.20	2.7	0.23	7.91	3.21	0.24	6.88	18.24	62.28

Hor- izon	Depth (in.)	pH	Truog P (ppm.)	Organic matter (%)	Exchangeable cations $\frac{1}{2}$					Base Satura- tion (%)
					Ca	Mg	K	H	Total*	

DYKE SILT LOAM (85)

A	0-8	7.34	70.4	2.53	12.97	0.81	1.34	4.39	19.51	77.50
B	8-38	7.11	0.0	0.52	9.13	0.48	0.49	4.93	15.03	67.20
C ₁	38-45	6.84	0.0	0.44	7.83	0.51	0.20	5.52	14.06	60.74
C ₂	45 +	6.80	1.4	0.43	6.02	0.84	0.12	4.76	11.74	59.45

ELBERT SILT LOAM (52)

A ₀	1-0	3.55	22.7	21.33	1.60	0.77	0.39	36.25	39.01	7.08
A ₁	0-5	3.99	7.7	4.17	0.28	0.19	0.04	8.91	9.42	5.41
A ₂	5-12	4.22	0.0	0.79	0.25	1.12	0.04	8.10	9.51	14.83
B ₁	12-18	4.11	0.0	0.83	3.08	9.10	0.17	17.12	29.47	41.91
B ₂	18-27	4.41	0.0	0.92	5.14	11.05	0.23	11.35	27.77	59.13
B ₃	27-39	5.78	0.5	0.78	7.94	17.85	0.34	4.47	30.60	85.39
C ₁	39-41	6.72	0.0	0.40	11.00	26.95	0.35	3.16	41.46	92.38
C ₂	41 +	6.29	20.0	0.17	10.58	19.25	0.25	2.72	32.80	91.71

ELIOAK SILT LOAM (24)

A ₁	0-8	5.20	5.0	3.25	2.51	0.54	0.30	9.48	12.83	26.11
A ₂	8-14	5.32	1.8	1.62	1.76	0.34	0.09	6.60	8.79	24.91
B ₁	14-18	5.49	0.0	0.59	2.55	0.90	0.20	4.93	8.58	42.54
B ₂	18-33	5.07	0.0	0.32	1.55	1.88	0.45	7.83	11.71	33.13
B ₃	33-45	4.99	0.0	0.23	0.81	1.64	0.30	6.37	9.12	30.15
C ₁	45-60	4.79	0.0	0.17	0.53	1.66	0.28	10.14	12.61	19.59
C ₂	60 +	4.88	1.8	0.10	0.08	0.38	0.12	3.10	3.68	15.76

EUBANKS SILT LOAM (136)

A ₁	0-2	4.98	13.6	7.88	3.32	0.69	0.46	15.21	19.68	22.71
A ₂	2-8	4.68	7.0	2.36	0.26	0.11	0.19	10.11	10.67	5.25
B ₁	8-18	4.86	4.8	0.90	0.69	1.23	0.35	9.18	11.45	19.83
B ₂	18-58	5.13	8.2	0.21	1.49	2.37	0.33	9.45	13.64	30.72
C ₁	58-65	4.90	7.3	0.16	0.29	1.50	0.11	10.66	12.56	15.13
C ₂	65 +	5.75	8.9	0.19	6.03	8.76	0.12	8.91	23.82	62.59

FAUQUIER SILT LOAM (45)

A	0-6	4.98	0.5	3.71	0.53	0.50	0.25	11.98	13.26	9.65
B ₁	6-15	4.91	0.0	1.26	0.40	1.40	0.32	9.61	11.73	18.07
B ₂	15-39	5.06	0.0	0.43	0.87	1.96	0.44	10.67	13.94	23.46
C ₁	39-54	4.98	0.0	0.30	1.26	1.93	0.29	9.33	12.81	27.17
C ₂	54 +	4.94	0.0	0.21	0.62	1.75	0.16	12.94	15.47	16.35

FAUQUIER SILT LOAM (45)

A ₁	0-1	4.69	21.6	9.58	2.53	1.32	0.44	14.18	18.47	23.23
A ₂	1-7	4.50	2.5	1.50	0.08	0.18	0.05	5.16	5.47	5.67
A ₃ -B ₁	7-11	4.59	1.4	0.72	0.18	0.70	0.05	6.10	7.03	13.23
B ₂	11-20	4.69	3.0	0.63	0.52	2.11	0.10	9.00	11.73	23.27
C ₁	20-32	4.76	1.8	0.43	0.92	4.28	0.14	10.07	15.41	34.65
C ₂	32-40	4.79	1.4	0.35	1.09	4.88	0.11	10.64	16.72	36.36

Hor- izon	Depth (in.)	pH	Truog P (ppm.)	Organic matter (%)	Exchangeable cations/ Ca	Mg	K	H	Total*	Base Satura- tion (%)
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FAUQUIER SILT LOAM (45)

A ₀	1-0	6.32	21.6	15.62	18.16	2.85	0.60	11.55	33.16	65.17
A	0-6	5.18	2.5	3.46	2.35	0.83	0.24	10.73	14.15	24.17
B	6-20	5.10	0.0	0.92	2.65	2.07	0.15	13.04	17.91	27.19
C	20-26	5.51	0.0	0.39	10.88	7.65	0.16	10.10	28.79	64.92

GOLDVEIN GRITTY SILT LOAM (64)

A ₁	0-1	3.96	5.9	9.89	0.46	0.25	0.24	15.69	16.64	5.71
A ₂	1-11	4.40	0.0	0.89	0.01	0.10	0.12	6.46	6.69	3.44
B ₁	11-22	4.73	0.0	0.12	0.22	0.83	0.16	6.53	7.74	15.63
B ₂	22-32	4.74	0.0	0.10	0.07	0.56	0.22	11.59	12.44	6.83
C	32 +	4.60	0.0	0.10	0.12	0.56	0.21	14.04	14.93	5.96

HAZEL SILT LOAM (51)

A	0-13	5.03	1.8	1.50	1.03	0.47	0.12	7.81	9.43	17.18
C ₁	13-36	5.50	2.3	0.32	1.97	1.32	0.22	4.52	8.03	43.71
C ₂	36 +	5.51	2.7	0.26	0.78	1.95	0.11	3.49	6.33	44.87

HIWASSEE LOAM (94)

A	0-8	5.15	1.4	1.94	2.72	1.26	0.40	7.67	12.05	36.35
B ₁	8-17	4.99	0.0	0.63	2.79	2.40	0.28	10.36	15.83	34.55
B ₂	17-43	4.79	3.6	0.30	0.35	1.14	0.17	14.82	16.48	10.07
C ₁	43 +	4.80	5.9	0.15	0.03	0.55	0.14	13.74	14.46	4.98

HIWASSEE LOAM, light colored variant (89)

A ₁	0-1	4.51	6.4	5.31	0.53	0.11	0.10	7.07	7.81	9.48
A ₂	1-11	4.61	2.7	1.12	0.05	0.02	0.06	4.03	4.16	3.13
B ₁	11-22	4.86	2.0	0.55	0.06	1.46	0.20	8.93	10.65	16.15
B ₂	22-45	5.02	2.5	0.28	0.10	0.73	0.22	14.52	15.57	6.74

TREDELL SILT LOAM (48)

A ₁	0-2	5.39	5.0	3.64	4.98	2.58	0.16	6.90	14.62	52.80
A ₂	2-9	5.79	3.2	1.84	3.45	1.89	0.07	4.43	9.84	54.98
B ₁	9-13	5.77	0.5	0.77	2.47	2.00	0.07	5.52	10.06	45.13
B ₂	13-49	6.72	0.0	0.63	11.15	22.80	0.52	4.72	39.19	87.96
C ₁	49-76	7.60	73.1	0.11	14.63	16.40	0.32	1.59	32.94	95.17
C ₂	76 +	7.74	89.5	0.05	15.85	14.30	0.18	1.63	31.96	94.90

Hor- izon:	Depth (in.)	pH	Truog P (ppm.)	Organic matter (%)	Exchangeable cations $\frac{1}{2}$					Base Satura- tion (%)
					Ca	Mg	K	H	Total*	

KELLY SILT LOAM (79)

A ₀	1-0	4.49	22.3	29.26	9.61	5.85	0.43	36.21	52.10	30.50
A ₁	0-6	4.59	2.3	1.98	1.45	2.26	0.20	9.60	13.51	28.94
B ₁	6-13	4.48	0.0	0.66	3.39	5.05	0.22	11.71	20.37	42.51
B ₂	13-23	5.00	0.0	0.50	7.93	10.19	0.40	6.29	24.81	74.65
B ₃	23-27	6.22	0.0	0.49	7.92	12.29	0.36	5.60	26.17	78.60
C ₁	27-36	6.51	0.7	0.32	9.45	12.49	0.36	2.38	24.68	90.36
C ₂	36 +	6.98	0.0	0.16	97.73	12.79	0.36	1.02	111.90	99.09

LLOYD SILT LOAM (35)

A ₁	0-5	4.46	2.5	2.39	0.45	0.17	0.15	7.89	8.66	8.89
A ₂	5-8	4.41	0.7	1.26	0.40	0.30	0.12	8.30	9.12	8.99
B ₁	8-16	4.79	0.0	0.82	0.31	1.52	0.24	11.71	13.78	15.02
B ₂	16-46	5.05	0.0	0.39	0.08	1.63	0.16	13.65	15.52	12.05
C ₁	46 +	4.84	0.0	0.12	0.19	0.72	0.09	11.75	12.75	7.84

LOUISBURG SANDY LOAM (25)

A ₁	0-10	4.72	4.8	1.04	0.18	0.11	0.14	4.83	5.26	8.17
C	10 +	5.09	5.0	0.46	0.23	0.36	0.26	4.09	4.94	17.21

MANOR SILT LOAM (21)

A	0-16	4.90	0.0	0.86	0.58	1.19	0.29	9.23	11.29	18.25
C ₁	16-42	5.05	1.6	0.28	0.10	0.24	0.16	4.54	5.04	9.92
C ₂	42 +	4.98	3.4	0.12	0.11	0.11	0.11	3.71	4.04	8.17

MANTEO SHALY SILT LOAM (61)

A	0-6	4.61	5.7	3.66	0.72	0.63	0.33	9.40	11.08	15.16
C	6 +	4.83	1.4	0.68	0.42	1.08	0.38	7.62	9.50	19.79

MASADA LOAM (93)

A ₀	2-0	4.45	45.4	32.50	2.50	1.94	1.49	36.31	42.24	14.04
A ₁	0-9	4.68	3.0	2.25	0.27	0.08	0.08	4.19	4.62	9.31
B ₁	9-16	4.69	0.9	0.75	0.36	0.06	0.06	3.10	3.58	13.41
B ₂	16-21	4.71	0.7	0.49	0.32	0.28	0.10	4.58	5.28	13.26
C ₁	21-27	4.88	1.6	0.23	0.54	0.71	0.17	6.71	8.13	17.47
C ₂	27 +	5.02	2.0	0.18	0.35	0.66	0.27	8.38	9.66	13.25

MEADOWVILLE SILT LOAM (20)

A	0-24	5.60	2.3	1.74	4.72	1.96	0.18	9.07	15.93	43.06
B	24 +	5.58	9.5	1.15	2.37	1.34	0.18	10.38	14.27	27.26

Hor- izon:	Depth (in.)	pH	Truog P (ppm.)	Organic matter (%)	Exchangeable cations 1/					Base Satura- tion (%)
					Ca	Mg	K	H	Total*	

MECKLENBURG LOAM (40)

A ₁	0-2	5.92	17.5	7.45	9.53	2.72	0.53	11.73	24.51	52.14
A ₂	2-14	5.69	3.9	1.53	3.52	1.41	0.23	7.95	13.11	39.36
B	14-26	5.22	6.8	0.37	5.86	3.31	0.24	8.52	17.93	52.48
C ₁	26-32	5.50	5.5	0.35	16.48	9.25	0.35	8.33	34.41	75.79
C ₂	32 +	5.86	37.9	0.25	12.55	6.35	0.27	5.21	24.38	78.63

MONTEALTO SILT LOAM, shallow phase (27)

A ₁	0-2	5.25	20.4	21.33	11.65	3.31	0.94	28.50	44.40	35.81
A ₂	2-7	4.79	2.3	2.91	0.44	0.41	0.13	13.97	14.95	6.56
B	7-17	5.00	2.3	1.11	0.37	1.95	0.23	13.81	16.36	15.59
C ₁	17 +	5.10	2.7	0.39	1.76	3.08	0.18	15.84	20.86	24.07

MONTEALTO SILTY CLAY LOAM, Shallow phase (28)

A	0-5	6.48	11.1	2.17	6.19	2.25	1.00	6.25	15.69	60.17
B	5-16	4.89	3.0	0.37	3.23	1.80	1.40	10.64	17.07	37.67
C	16-22	4.94	3.0	0.37	2.88	1.77	1.60	11.66	17.91	34.90

MYERSVILLE-ORANGE SILT LOAMS (43)

A	0-6	6.57	3.2	1.85	3.45	0.49	0.08	3.43	7.45	53.96
B ₁	6-14	4.95	1.6	1.04	1.52	2.29	0.08	9.18	13.07	29.76
B ₂	14-25	5.50	0.7	0.61	6.95	6.95	0.12	9.04	23.06	60.80
C ₁	25-31	5.58	0.2	0.60	9.87	8.75	0.14	9.07	27.83	67.41
C ₂	31 +	6.01	0.5	0.21	11.67	8.95	0.09	6.44	27.15	76.28

MYERSVILLE-ORANGE SILT LOAMS (43)

A	0-7	5.22	3.0	2.54	2.75	1.80	0.11	8.05	12.71	36.66
B	7-18	5.50	0.0	0.57	5.40	6.40	0.10	8.90	20.80	57.21
C	18-30	5.98	0.0	0.23	14.02	13.75	0.22	9.21	37.20	75.24

NASON SILT LOAM (60)

A ₁	0-2	4.66	6.8	4.93	1.15	0.32	0.12	8.36	9.95	15.98
A ₂	2-7	4.63	2.7	1.70	0.31	0.07	0.12	4.93	5.43	9.21
B ₁	7-11	4.54	1.8	0.83	0.14	0.16	0.12	8.38	8.80	4.77
B ₂	11-21	4.62	0.9	0.77	0.16	1.09	0.23	12.88	14.36	10.31
B ₃	21-29	4.78	1.1	0.41	0.14	1.03	0.17	16.28	17.62	7.60
C ₁	29-50	4.78	0.5	0.30	0.08	0.77	0.13	14.80	15.78	6.21

PENN SILT LOAM (73)

A	0-5	4.64	3.2	1.81	0.98	0.43	0.22	6.71	8.34	19.54
C ₁	5-14	4.47	4.5	0.97	2.32	0.77	0.22	8.80	12.11	27.33
C ₂	14 +	4.90	1.8	0.66	7.96	1.96	0.54	6.88	17.34	60.32

Hor- izon	Depth (in.)	pH	Trueog P (ppm.)	Organic matter (%)	Exchangeable cations $\frac{1}{2}$					Base Satura- tion (%)
					Ca	Mg	K	H	Total*	

ROHRERSVILLE SILT LOAM (10)

A	0-9	5.41	5.0	4.34	5.58	2.50	0.10	13.26	21.44	38.15
B ₁	9-19	5.89	2.3	1.09	2.83	1.49	0.05	6.25	10.62	41.15
B ₂	19-28	5.75	1.8	0.99	5.93	4.02	0.11	8.88	18.94	53.12
C	28 +	6.30	12.0	0.45	9.60	4.47	0.10	8.19	22.36	63.37

ROWLAND SILT LOAM (12)

A ₁	0-11	5.21	5.9	3.09	6.06	2.22	0.12	11.54	19.94	42.13
A ₂	11-17	5.29	3.2	1.95	5.18	1.96	0.08	12.25	19.47	37.08
B ₁	17-22	5.05	3.0	0.63	2.47	1.21	0.06	10.69	14.43	25.92
C	22 +	4.84	1.4	0.39	2.97	3.04	0.11	12.77	18.89	32.40

SENACA LOAM (6)

A	0-7	4.78	2.7	1.64	0.15	0.17	0.08	6.00	6.40	6.25
B	7 +	4.91	0.9	0.43	0.57	0.95	0.17	6.47	8.16	20.71

STARR SILT LOAM (7)

A	0-23	5.28	17.3	2.39	2.52	0.51	0.33	12.49	15.85	21.20
B	23-40	5.51	14.5	2.53	3.61	0.69	0.45	11.48	16.23	29.27

TATUM SILT LOAM (54)

A ₁	0-1	4.32	3.9	6.06	0.39	0.11	0.13	8.47	9.10	6.92
A ₂	1-8	4.68	2.3	2.35	0.14	0.03	0.10	5.21	5.48	4.93
B ₁	8-13	4.74	1.1	0.86	0.99	0.96	0.38	7.32	9.65	24.15
B ₂	13-26	4.98	2.0	0.55	0.14	0.66	0.33	11.78	12.91	8.75
B ₃	26-32	5.10	1.8	0.21	0.08	0.28	0.14	11.18	11.68	4.28
C ₁	32-36	4.99	1.8	0.21	0.17	0.16	0.10	9.26	9.69	4.44
C ₂	36-40	4.92	1.4	0.21	0.21	0.21	0.14	9.45	10.01	5.59
C ₃	40 +	5.00	1.6	0.04	0.17	0.22	0.09	1.95	2.43	19.75

THURMONT STONY LOAM (81)

A	0-7	5.01	4.5	2.19	1.31	0.35	0.16	5.32	7.14	25.49
B ₁	7-11	4.58	3.6	1.00	1.73	0.53	0.19	12.10	14.55	16.84
B ₂	11-25	4.55	0.0	0.50	0.90	1.65	0.26	19.29	22.10	12.71
C ₁	25-45	4.48	0.0	0.31	0.08	0.89	0.22	21.09	22.28	5.34
C ₂	45 +	4.51	0.0	0.25	0.54	0.67	0.14	16.03	17.38	7.77

THURMONT STONY LOAM (81)

A ₂	4-8	5.01	2.3	0.95	0.24	0.75	0.30	8.18	9.47	13.62
B ₁	at 18	4.97	5.2	0.41	0.14	1.47	0.38	8.70	10.69	18.62

Hor- izon	Depth (in.)	pH	Truog P (ppm.)	Organic matter (%)	Exchangeable cations $\frac{1}{2}$					Base Satura- tion (%)
					Ca	Mg	K	H	Total*	

TUSQUITTEE LOAM (58)

A ₁	0-2	5.52	11.4	6.02	6.51	1.56	0.48	9.01	17.56	48.69
A ₂	2-8	4.83	3.0	1.65	0.85	0.48	0.26	7.43	9.02	17.63
B ₁	8-18	5.38	2.0	0.60	2.59	0.69	0.16	5.48	8.92	38.57
B ₂	18-40	5.52	3.6	0.13	2.79	2.27	0.16	5.81	11.03	47.33

WADESBORO SILT LOAM (70)

A ₁	0-3	4.38	13.2	5.22	0.57	0.08	0.08	7.95	8.68	8.41
A ₂	3-6	4.48	2.3	1.47	0.11	0.03	0.07	4.52	4.73	4.44
A ₃	6-12	4.41	1.8	0.82	0.17	0.03	0.09	4.93	5.22	5.56
B ₁	12-17	4.69	0.2	0.69	0.18	0.91	0.36	8.38	9.83	14.75
B ₂	17-44	4.92	2.7	0.18	0.48	0.56	0.21	10.55	11.80	10.59
C ₁	44 +	4.85	2.0	0.14	0.15	0.33	0.19	12.19	12.86	5.21

WATT SILT LOAM (66)

A	0-11	4.78	3.6	1.90	0.46	0.29	0.08	6.44	7.27	11.42
C ₁	11-22	4.95	2.3	0.48	0.26	1.26	0.08	6.03	7.63	20.97
C ₂	22 +	4.92	2.3	0.59	0.20	0.94	0.08	6.19	7.41	16.46

WEHADKEE SILT LOAM (5)

A	0-9	5.38	12.3	2.68	3.19	0.63	0.13	8.80	12.75	30.98
B	9 +	5.49	12.0	1.10	2.15	0.55	0.10	6.19	8.99	31.15

ZION SILT LOAM (74)

A ₀	1-0	4.40	9.8	7.53	1.45	0.36	0.18	13.51	15.50	12.84
A ₁	0-7	4.67	2.3	1.66	0.33	0.14	0.09	5.34	5.90	9.49
B ₁	7-13	5.00	0.9	0.68	0.75	1.08	0.09	5.70	7.62	25.20
B ₂	13-25	4.94	2.3	0.48	0.58	1.21	0.11	7.64	9.54	19.92
C	25 +	5.38	1.6	0.38	4.52	4.57	0.17	9.92	19.18	48.28

* Summation of exchangeable cations.

1/ m.e./100 gms. soil.

2/ Legend number used on original field sheets.

3/ Exchangeable Manganese was run by the old method (series of evaporations) on Davidson clay (31) sample only; the results in p.p.m. are as follows:

A ₁	-	0-7"	=	34.65 p.p.m. of Mn.
B ₁	-	7-21"	=	5.83 p.p.m. of Mn.
B ₂	-	21-70"	=	6.97 p.p.m. of Mn.
C	-	70 +	=	0.63 p.p.m. of Mn.

Since these results are reported in p.p.m., they are not included in the Total* and Percent Base Saturation columns of this table.

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