

FINAL REPORT
Refinement of the VALUES Implementation Tool
For Nutrient Management Planning in Virginia
Re: D.C.R Grant # 319-02-09-PT
Submitted by
Department of Crop and Soil Environmental Sciences
Virginia Tech
James C. Baker and Gregory Mullins

History

In the original version of VALUES (VALUES 92) a major effort was devoted to selecting and defining realistic yield goals for various crops. VALUES 92 concluded that the optimum economic yield for corn grain was statistically very close to the median yield for corn grain where high levels of management were followed. These were yields obtained without irrigation.

The original dataset focused on selecting crop yields for specific kinds of soils. A variety of sources of yield data were utilized over a 20+ year period from 1969 to 1992. Only well-documented data were utilized in VALUES 92 data set. For corn, 436 data points were selected for determining median yields. One data point was one crop yield/one soil series/one year. Wheat and soybean yields were determined by the same method of data collection. Soybeans were represented by 1,421 data points over the 20+ year period and 148 data points for wheat.

All soil series mapped by 1992 in Virginia (607) were grouped into 43 different Soil Management Groups (SMG). Placement in a specific SMG was based on similarities of common soil features that relate to management and productivity. Regional occurrence, parent material, landscape position, solum thickness, dominant profile features, plant available water supplying capacity and internal soil drainage were all considered in establishing the SMG's.

Where sufficient corn yield data was available, median corn yields by series were assigned to determine a realistic yield for each SMG. Where no data existed, best estimates of corn yield were assigned based on soil properties defined by the SMG. Where SMG showed the same yields, these were grouped into Soil Productivity Groups (SPG). Nine soil productivity groups were established for corn production.

Values update 2005.

The 2005 update of VALUES (VALUES 05) utilized crop yield data collected since 1992 and focused on two sources of data. One corn yields source was obtained, under rigidly monitored conditions, from research plots located at regional agricultural research stations throughout Virginia. These studies provided 12 years of high-quality yield data for a variety of soils. Complete records on crop variety, soil series, planting and fertility treatments, management protocols, climatic conditions, along with measured yields at harvest, were important assessments used in collecting the yield data. The 12 years of data from these research plots resulted in 2,985 useable data points for corn yields that also were applied to the VALUES 05 update. Soybeans, wheat, and barley yields were collected, although from fewer plots. A second source of crop yield data was from on-farm yield trials conducted by Agricultural and Natural

Resources Extension Agents. These field plots were carefully monitored during planting and harvesting conditions. Two hundred and ninety-one sites yielded 985 data points over the 12 year period for corn. On-farm yield trials for soybeans and small grains were also conducted during this period. Many of these on-farm trials were conducted in the Coastal Plains. These trials were conducted on soils that represent approximately 80 percent of the agriculturally important soils of the Coastal Plain region. Thus, the corn yield data base collected from 1992 through 2004 is represented by 2,985 research plot data points plus 985 on-farm data points for a total of 3,970 data points compared to 436 for the VALUES 92. VALUES 05 represents a total of 888 soil series, which is an increase of 281 new soil series over the earlier version. Each new soil series has been assigned a SMG and SPG. Table 2 summarizes SPGs and SMGs by soil series for various crops.

Yield trends: Corn Grain

Corn yields for specific soils showed increases of 13% throughout the 1992 to 2004 period. When compared to VALUES 92, VALUES 05 shows a 13% increase in the more productive soils or about 20 bu/A on average over the 12 year period. Nationally, corn yields have increased regularly over the last 30 years. Over the last 34 years (1970 -2004), Virginia corn yield averages have shown yield increases of about 1.1bu corn/year. This time span encompasses the original version of VALUES 92 (22 years) as well as the last 12 years (1992 – 2004) of our update period. (Fig. 1) There is a considerable spread around the median yield, which is attributed largely to climatic variation from year to year, but clearly, the trend shows that the yields are increasing. Based on these trends, it is not surprising that the average for the VALUES 92 would show about an 80 bu/A average for the period (1970 -1992), and the VALUES 05 would show an average of 96 bu/A average, for the most recent 12 year period - or about 16 bu/A higher. The 2004 data shows a state average of about 100 bu/A or approximately 20 bu/A difference in from the VALUES 92. The difference in corn yields from the VALUES 92 versus the VALUES 05 is 20 bu/A, based on average Virginia yield data. The yield increases for Soil Productivity Groups (SPG) of approximately 20 bu/A are observed from the measured soil specific yield data collected from the last 12 years of the VALUES 05. **Thus, our recommendation is to increase the SMG expected yields by 20 bu/A for all soils with yields over 100 bu/A.** These expected yields are for high levels of management, but without irrigation. Table 1 “Estimated Yields in Bushels (bu) or Tons (T) per Acre of Various Non-Irrigated Crops for Identified Soil Productivity Groups” summarizes these recommendations. Table 3 summarizes Soil Productivity Groups vs Soil Management Groups for corn grain and corn silage.

Corn Silage

VALUES 92 was limited by very little measured forage yield data upon which to make recommendations. A prediction equation obtained from Midwest data was used to make predictions of forage yields from grain yields. This equation consistently under-predicted forage yields obtained under Virginia conditions, and thus necessitated the need to replace the Midwest prediction with valid data obtained from Virginia. Through the efforts of several dedicated individuals from Virginia Cooperative Extension, DCR, and NRCS, the last 12 years have produced well documented forage yields, for Virginia soils, obtained under Virginia climates, and utilizing modern varieties designed for corn forage.

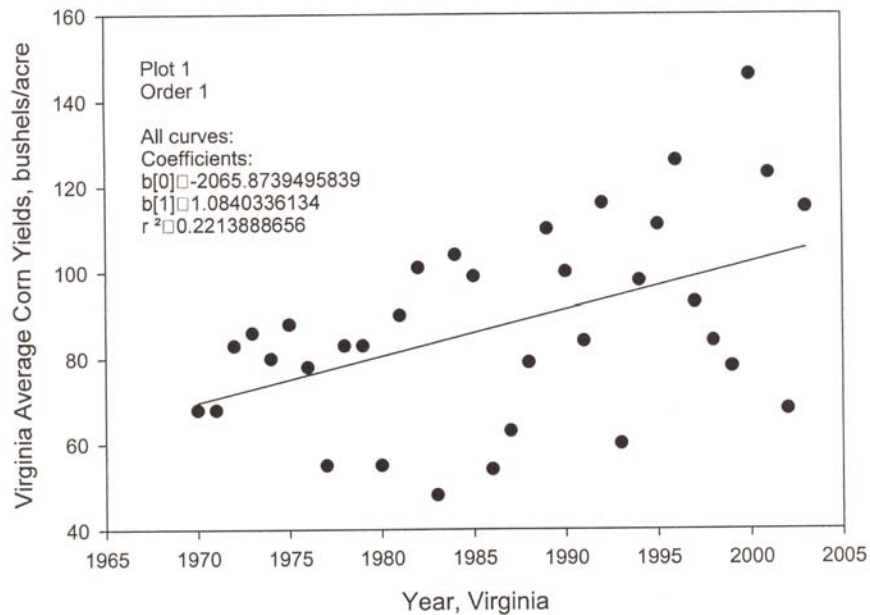


Figure 1. Average corn yields, bu/A, 1970-2004.

These data are reflected by Fig. 2. (Silage yield ton/A vs Grain yield, bu/A) The equation used to predict the expected silage in tons/A is: $Y = 0.0985x + 7.6964$, where x is the expected corn grain yield for the various soil productivity groups. The R squared for this curve is 0.8146. These silage yields are rounded to the nearest whole number. The recommended N for these soil productivity groups is 1.1 # N x the grain yield. These are indicated in Table 1. Where consistently high corn silage yields have been removed from the field, and particularly under irrigated conditions, additional P and K recommendations may be suggested for these particular situations. These additional nutrient recommendations will be from soil test data and calculated crop removals and are outlined later in this report.

Grain Sorghum

One pound of N/bu of expected yield is recommended. Refer to Table 1 for soil yield estimates.

Soybeans

Average statewide records for soybeans over the last 12 years have shown slight increases in yields from those observed in the VALUES 92 data. However, estimated yields for soybeans for VALUES 92 were relatively high. Farm monitored yield records accumulated over the last 12 years indicate the highest yields are not much different from the highest expected yields in VALUES 92. Therefore, for VALUES 05, we do not propose any expected changes from what was proposed as yield goals for VALUES 92.

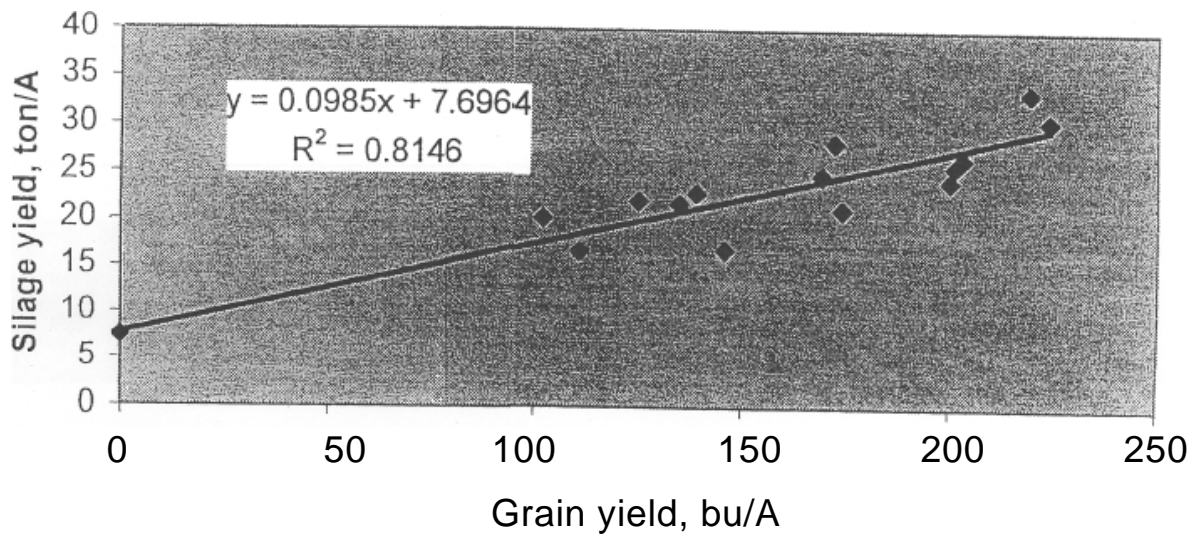


Figure 2. Silage yield, tons/A versus corn grain yield, bu/A.

Wheat

An average Virginia wheat yield increased over the last 34 years (Fig. 3) Virginia Average Wheat Yields, bu/A (1970 – 2004). However, VALUES 92 estimates for expected yields for both standard and intensively managed wheat for soil management groups are very close to what would be observed at the high end of the 34-year-yield curve, thus this report stayed within these numbers for VALUES 05. The overall wheat yield data set in VALUES 92 was much better than the data set for corn grain yields. This is likely a reflection of the work of Alley and Brann that had established high yield goals for wheat, before the VALUES 92 was published. A recommendation will be to continue the current fertility protocols (N-P-K) for wheat, utilizing tissue testing, and split applications when appropriate. Table 4 compares Soil Productivity Groups vs Soil Management Groups for intensively managed wheat.

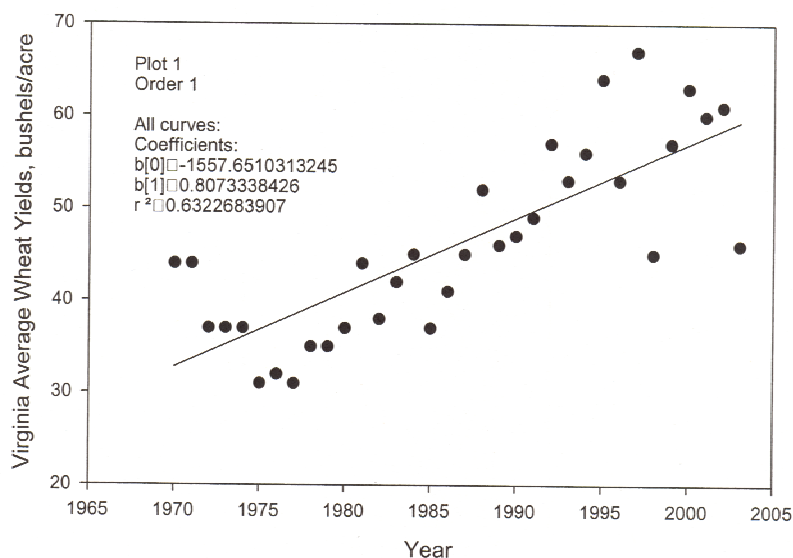


Figure 3. Average wheat yield, bu/A in Virginia, 1970-2004.

Barley

From the limited yield data for barley, there was no significant trend to suggest significant increases in barley yields since VALUES 92 was published. As with the wheat, we proposed keeping the yields goals for barley at current levels (standard and intensive) and continuing current fertility protocols (N-P-K), utilizing tissue testing, and split applications where appropriate.

Oats

There appeared to be no reason to change the oat grain yields from what proposed in the VALUES 92 data set.

Rye

Recommendations for rye grain production are 30# N at planting and 45# N in late winter with appropriate P and K applications depending on soil test data.

Cereal Silage (T/A)

There was little data to establish cereal silage yields in the VALUES 92 data set. Work over the last 12 years by CSES Extension Forage Specialists Ray Smith, Paul Peterson, and Chris Teutsch has revealed much needed information on measured silage yields for cereal grains. These specialists have provided suggested silage yields for various soil productivity groups and included soil management groups. Table 5 combines barley/oats/rye (T/A) into five soil productivity groups and a second combines wheat/triticale (T/A) into five soil productivity groups. Expected yields are given in “wet tons” but all measured values were adjusted on a basis of 35% dry matter. Table 1 summarizes these expected yields. Current soil test recommendations do not differentiate fertility treatments between the soil productivity groups. These groups are included in the event that future soil fertility recommendations will take into account different yield potentials for various soil productivity groups. Current N recommendations are 30 # N /A at planting and late winter applications 40 – 90 #N for triticale, wheat, or rye silage, and 40 to 70 #N/A for barley or oats in spring for silage utilization. P and K recommendations are determined by soil test values for these elements and/or P and K losses via crop removal.

Canola

Canola recommendations include 40 # N/A at planting and 90 – 120 # N/A prior to spring growth. P and K recommendations are according to soil test values.

Peanuts

No N is recommended for peanuts. P and K recommendations are based on soil test values and are outlined later in this report.

Cotton

Cotton is divided into five soil productivity groups. Soil Productivity Groups I, II, and III reflect soils suited for cotton production. The recommended N applications are as follows:

SPG I	50 - 60 #N/A
SPG II	60 – 90 #N/A
SPG III	50 – 70 # N/A

SPG IV soils are not suited for cotton production
 SPG V includes soils on which cotton should not be grown.

Phosphorus and potassium recommendations for cotton are based on soil tests.

Phosphorus and Potassium

Phosphorus and potassium fertilization is generally based on soil test levels for individual soils.
 The standard protocols for P and K are shown.

Soil Test Level	Fertilizer Recommendations (lb/A)			
	P		K	
	P ₂ O ₅		K ₂ O	
L	80-120		L	80-120
M	40-80		M	40-80
H	20-40		H	20-40
VH	0		VH	0

The above recommendations are applied to the following cropping systems:

- | | |
|---------------|---------------------|
| Corn Grain | Wheat/Barley Grain |
| Sorghum Grain | Cereal Grain Silage |
| Soybeans | Canola |
| Rye Grain | Cotton |

The following are P and K recommendations for:

Corn Silage Soil test Level	Fertilizer Recommendations (lb/A)			
	P		K	
	P ₂ O ₅		K ₂ O	
L	80-120		L	160 – 240
M	40-80		M	80-160
H	20-40		H	40-80
VH	0		VH	0

Corn Irrigated Soil test Level	Fertilizer Recommendations (lb/A)			
	P		K	
	P ₂ O ₅		K ₂ O	
L	130-170		L	160 – 240
M	80-120		M	80-160
H	30-80		H	40-80
VH	0		VH	0

Peanuts Soil test Level		Fertilizer Recommendations (lb/A)		
		P		K
		P ₂ O ₅		K ₂ O
L	100-200		L	80-100
M	55-850		M	0
H	0-40		H	0
VH	0		VH	0

Forage systems for pasture and hay

N – P – K recommendations for various forage based cropping systems are specific for each cropping system, for soils by SPG within that system, and by Soil Test Values. Tables 6, 7, 8, 9, and 10 compare soil productivity groups versus soil management groups to expected yields of various forages and pasture systems. Tables 11 through 35 compare specific forage cropping systems by soil productivity groups to N – P – K soil fertility recommendations based on soil test values.

Final Comments and Recommendations

The Virginia Agronomic Land Use Evaluation System is based on combining soils that have similar properties into Soil Management Groups. The specific soil criteria used in making these groupings are based on measured soil properties and land use features that also are used to classify soils in the United States by the United State Department of Agriculture Classification Systems, SOIL TAXONOMY. The premise is that soils with similar features should respond similarly to soil managerial practices.

With a reliable soil specific, crop yield data base, accumulated over time, similar yielding Soil Management Groups can be combined into Soil Productivity Groups. When Soil Productivity Groups are established, specific soil fertility recommendations can be made for each cropping system to achieve the expected yield goal.

With improved crop varieties, and improved managerial production strategies, crop yields will be expected to increase over time. By continuing to add to the soil specific crop yield data base, future refinements and updates of VALUES can be achieved. The system also allows for newly defined soil series to be added periodically to the list of established Virginia soils. Thus we have a system that is scientifically based on soil characterization and classification and, is closely tied to a program of continuously evaluating soil specific crop yields for all Virginia soils.

Our recommendation is that we continue yearly monitoring of soil specific crop yield data for Virginia soils including climatic data for all production sites.

Acknowledgements

We thank the Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation for funding this project. We are also indebted to dozens of individuals from DCR, NRCS, Virginia Cooperative Extension, the Virginia Agricultural experiment Station, and faculty and staff of Crop and Soil Environmental Sciences for assistance in providing crop yield information based specifically on soil series. Also many of those same individuals helped with

reviewing data, editorial assistance, and providing soil fertility recommendations for various cropping systems that are reported in this report. Specifically we thank Wade Thomason, Ray Smith, Chris Teustch, and Liz Rucker for supplying crop yield data and providing much of the insight into the fertility recommendations for the various forage cropping systems. Charlene Carr and Sue Brown are to be commended for their part in data entry, computer applications, and display of extreme patience in assembling this data base and report.

List of Tables

- 1 Soil Productivity Groups and Yields for Various Crops
- 2 Soil Series, Soil Management Groups, and Soil Productivity Groups
- 3 Soil Productivity Groups vs Soil Management Groups for Corn Grain and Corn Silage
- 4 Soil Productivity Groups vs Soil Management Groups for Intensively Managed Wheat
- 5 Soil Productivity Groups vs Soil Management Groups for Cereal Grain Silage
- 6 Soil Productivity Groups vs Soil Management Groups for Alfalfa, Alfalfa – Orchard grass Hay
- 7 Soil Productivity Groups vs Soil Management Groups for Tall Grass – Clover Hay
- 8 Soil Productivity Groups vs Carrying Capacity for Pastures
- 9 Soil Productivity Groups vs Soil Management Groups for Bermuda Grass Hay
- 10 Soil Productivity Groups vs Soil Management Groups for Prairie Grass Hay
- 11 Sudan, Sudan-Sorghum Hybrids, and Pearl Millet Plantings
- 12 Alfalfa and Alfalfa - Orchard Grass Establishment
- 13 Alfalfa and Alfalfa – Orchard Grass Hay Maintenance, Soil Productivity Group I
- 14 Alfalfa and Alfalfa – Orchard Grass Hay Maintenance, Soil Productivity Group II
- 15 Alfalfa and Alfalfa – Orchard Grass Hay Maintenance, Soil Productivity Group III
- 16 Red Clover - Orchard Grass, Orchard Grass/Fescue – Ladino Clover, and Orchard Grass and Fescue Establishment
- 17 Red Clover – Grass Hay Maintenance, Soil Productivity Groups I, II
- 18 Red Clover – Grass Hay Maintenance, Soil Productivity Groups III, IV
- 19 Stockpiled Tall Fescue, Soil Productivity Groups I, II
- 20 Stockpiled Tall Fescue, Soil Productivity Groups III, IV
- 21 Orchard Grass/Fescue – Clover Pastures, Soil Productivity Groups I, II
- 22 Orchard Grass/Fescue – Clover Pastures, Soil Productivity Groups II, IV
- 23 Native or Unimproved Pastures, Soil Productivity Groups I, II
- 24 Native or Unimproved Pastures, Soil Productivity Groups III, IV
- 25 Orchard Grass/Fescue (Tall Grass) Hay Maintenance, Soil Productivity Groups I, II
- 26 Orchard Grass/Fescue (Tall Grass) Hay Maintenance, Soil Productivity Groups II, IV
- 27 Bermuda Grass Establishment, All Soil Productivity Groups
- 28 Bermuda Grass Pastures, Soil Productivity Groups I, II
- 29 Bermuda Grass Pastures, Soil Productivity Groups III, IV, V
- 30 Bermuda Grass Hay Production, Soil Productivity Groups I, II
- 31 Bermuda Grass Hay Production, Soil Productivity Groups II, IV, V
- 32 Annual Rye Grass Hay Production, Soil Productivity Groups I, II
- 33 Annual Rye Grass Hay Production, Soil Productivity Groups III, IV
- 34 Prairie Grass Hay Production, Soil Productivity Groups I, II
- 35 Prairie Grass Hay Production, Soil Productivity Groups II, IV

Table 1. Estimated Yields in Bushels (Bu) or Tons (T) per Acre of Various Non-Irrigated Crops for Identified Soil Productivity Groups.

Crop	I		II		III		IV		V
	A	B	A	B	A	B	A	B	
Corn (Bu/A)	180	170	160	150	140	130	120	100	80
Silage (T/A)	25	24	23	22	21	20	19	18	16
Grain Sorghum (Bu/A)	140	130	120	110	100	100	90	90	80
Soybeans (Bu/A)									
Early Season	50	45	40		35		25		20
Late Season	40	34	34	30	25		18		15
Wheat (Bu/A)									
Standard	64		56		48		40		24
Intensive	80		70		60		50		30
Barley (Bu/A)									
Standard	100		70		60		50		30
Intensive	115		88		75		63		38
Oats (Bu/A)	80		80		80		60		60
Cereal Silage (T/A)									
Barley/Oats/Rye	>10		8-10		6-8		3-6		<3
Wheat/Triticale	>12		10-12		8-10		4-8		<4
Tallgrass Hay (T/A)	>4.0		3.5-4		3-3.5		<3		<3
Bermudagrass Hay (T/A)	>6		5-6		4-5		<4		<4
Prairie Grass Hay (T/A)	>5		4.25-5		3.5-4.25		3-3.5		<3
Alfalfa (T/A)	>6		4-6		<4		<4		<4
Pasture (Ac/Au)	1.0		1.1-1.5		1.6-3.0		3.1-6.5		3.1-6.5

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Abell	G	Ila	Ila	I	II	IV	II	I
Abell variant	G	Ila	Ila	I	II	IV	II	I
Ackwater	K	Ilb	Ilb	I	II	II	III	I
Acredale (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Acredale (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Aden (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Aden (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Airmont	BB	IVb	IVb	III	IV	IV	NS*	III
Alaga	II	V	V	III	V	IV	NS*	NS*
Alamance	FF	IVb	IVb	III	IV	IV	NS*	III
Alanthus	D	Ib	Ib	I	Ib	I	I	I
Albano	KK	V	V	V	V	Vb	NS*	IV
Albemarle	JJ	V	V	IV	V	IV	NS*	IV
Alderflats	NN	V	V	V	V	Vb	NS*	NS*
Aldino	W	IVa	IVa	IV	III	IV	NS*	IV
Aldio	Y	IVa	IVa	III	III	III	NS*	III
Allegheny	L	Ilb	Ilb	I	II	II	III	II
Alluvial Land, wet	MM	V	V	V	V	Vb	NS*	IV
Alonemill	A	Ia	Ia	I	Ia	I	I	I
Alonemill, Fluvaquentic	I	Ila	Ila	I	II	Vb	NS*	I
Alonzville	L	Ilb	Ilb	I	II	II	III	II
Altavista	B	Ia	Ia	I	Ia	I	II	I
Altavista, variant	B	Ia	Ia	I	Ia	I	II	I
Alticrest	E	Ila	Ila	I	II	Va	NS*	II
Angie	AA	IVa	IVa	II	III	Va	NS*	IV
Angie variant	AA	IVa	IVa	II	III	Va	NS*	IV
Appling	V	IVa	IVa	II	III	III	III	III
Appling gritty	V	IVa	IVa	II	III	III	III	III
Appomattox	O	Ilb	Ilb	I	II	II	II	II
Arapahoe	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Arcola	U	IIIb	IIIb	II	II	II	III	II
Ardilla	W	IVa	IVa	IV	III	IV	NS*	IV
Argent	PP	V	V	V	V	Vb	NS*	NS*
Arkaqua	I	Ila	Ila	I	II	Vb	NS*	I
Ashburn	BB	IVb	IVb	III	IV	IV	NS*	III
Ashe	JJ	V	V	IV	V	IV	NS*	IV
Ashlar	FF	IVb	IVb	III	IV	IV	NS*	III
Assateague	QQ	V	V	V	V	Vb	NS*	NS*
Athol	M	Ilb	Ilb	I	II	II	I	II
Atkins	NN	V	V	V	V	Vb	NS*	NS*
Atlee	Q	IIIa	IIIa	II	II	II	NS*	III

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Augusta (drained)	P	IIb	IIb	II	II	Va	NS*	III
Augusta (undrained)	Z	IVa	IVa	IV	III	IV	NS*	NS*
Augusta variant(drained)	P	IIb	IIb	II	II	Va	NS*	III
Augusta variant(undrained)	Z	IVa	IVa	IV	III	IV	NS*	NS*
Aura	T	IIIb	IIIb	II	II	II	NS*	III
Austinville	O	IIb	IIb	I	II	II	II	II
Axis	PP	V	V	V	V	Vb	NS*	NS*
Aycock	R	IIIa	IIIa	II	II	II	III	II
Ayersville	FF	IVb	IVb	III	IV	IV	NS*	III
Backbay	PP	V	V	V	V	Vb	NS*	NS*
Badin	X	IVa	IVa	II	III	III	III	II
Baile	HH	IVb	IVb	III	IV	Vb	NS*	IV
Bailegap	GG	IVb	IVb	IV	IV	IV	NS*	III
Balsam	GG	IVb	IVb	IV	IV	IV	NS*	III
Bama	R	IIIa	IIIa	II	II	II	III	II
Banister	K	IIb	IIb	I	II	II	III	I
Barclay	E	IIa	IIa	I	II	Va	NS*	II
Bateau	I	IIa	IIa	I	II	Vb	NS*	I
Bayboro (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Bayboro (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Beckham	O	IIb	IIb	I	II	II	II	II
Bedington	FF	IVb	IVb	III	IV	IV	NS*	III
Beech	L	IIb	IIb	I	II	II	III	II
Beech Grove	JJ	V	V	IV	V	IV	NS*	IV
Belhaven	PP	V	V	V	V	Vb	NS*	NS*
Belspur	H	IIa	IIa	III	II	Vb	NS*	IV
Beltsville	BB	IVb	IVb	III	IV	IV	NS*	III
Belvoir	BB	IVb	IVb	III	IV	IV	NS*	III
Benthole	CC	IVb	IVb	II	IV	IV	NS*	III
Bentley	R	IIIa	IIIa	II	II	II	III	II
Berks	JJ	V	V	IV	V	IV	NS*	IV
Berks variant	JJ	V	V	IV	V	IV	NS*	IV
Bermudian	A	Ia	Ia	I	Ia	I	I	I
Bertie	J	IIb	IIb	I	II	II	NS*	I
Bertie, variant	J	IIb	IIb	I	II	II	NS*	I
Bethera (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Bethera (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Bethesda	JJ	V	V	IV	V	IV	NS*	IV
Bethlehem	V	IVa	IVa	II	III	III	III	III
Bibb	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Biltmore	II	V	V	III	V	IV	NS*	NS*
Birdsboro	L	IIb	IIb	I	II	II	III	II

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Blackthorn	GG	IVb	IVb	IV	IV	IV	NS*	III
Bladen (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Bladen (undrained)	OO	V	V	V	V	Vb	NS*	NS
Blago	HH	IVb	IVb	III	IV	Vb	NS*	IV
Blairton	FF	IVb	IVb	III	IV	IV	NS*	III
Bland	Y	IVa	IVa	III	III	III	NS*	III
Bleakhill	J	IIb	IIb	I	II	II	NS*	I
Blocktown	JJ	V	V	IV	V	IV	NS*	IV
Bloodyhorse	JJ	V	V	IV	V	IV	NS*	IV
Bluemont	JJ	V	V	IV	V	IV	NS*	IV
Bohicket	PP	V	V	V	V	Vb	NS*	NS*
Bojac (Eastern Shore)	T	IIIb	IIIb	II	II	II	NS*	III
Bojac (Mainland)	DD	IVb	IVb	II	IV	III	NS*	III
Bolling	J	IIb	IIb	I	II	II	NS*	I
Bolling variant	J	IIb	IIb	I	II	II	NS*	I
Bolton	M	IIb	IIb	I	II	II	I	II
Bonneau	DD	IVb	IVb	II	IV	III	NS*	III
Bookwood	U	IIIb	IIIb	II	II	II	III	II
Botetourt	G	IIa	IIa	I	II	IV	II	I
Bourne	BB	IVb	IVb	III	IV	IV	NS*	III
Bourne variant	BB	IVb	IVb	III	IV	IV	NS*	III
Bowmansville	I	IIa	IIa	I	II	Vb	NS*	I
Braddock	O	IIb	IIb	I	II	II	II	II
Brandywine	FF	IVb	IVb	III	IV	IV	NS*	III
Brecknock	U	IIIb	IIIb	II	II	II	III	II
Bremo	JJ	V	V	IV	V	IV	NS*	IV
Brentsville	FF	IVb	IVb	III	IV	IV	NS*	III
Brevard	B	Ia	Ia	I	Ia	I	II	I
Brickhaven	Y	IVa	IVa	III	III	III	NS*	III
Brinkerton	LL	V	V	V	V	Vb	NS*	IV
Brinklow	FF	IVb	IVb	III	IV	IV	NS*	III
Broadway	A	Ia	Ia	I	Ia	I	I	I
Brockroad	V	IVa	IVa	II	III	III	III	III
Brownsville	JJ	V	V	IV	V	IV	NS*	IV
Brownwood	JJ	V	V	IV	V	IV	NS*	IV
Brumbaugh	L	IIb	IIb	I	II	II	III	II
Brushy	JJ	V	V	IV	V	IV	NS*	IV
Buchanan	BB	IVb	IVb	III	IV	IV	NS*	III
Buckanan cobbly	JJ	V	V	IV	V	IV	NS*	IV
Buckhall	V	IVa	IVa	II	III	III	III	III
Buckingham	JJ	V	V	IV	V	IV	NS*	IV
Bucks	U	IIIb	IIIb	II	II	II	III	II

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Buckton	A	Ia	Ia	I	Ia	I	I	I
Buffstat	V	IVa	IVa	II	III	III	III	III
Bugley	JJ	V	V	IV	V	IV	NS*	IV
Buncombe	II	V	V	III	V	IV	NS*	NS*
Burketown	BB	IVb	IVb	III	IV	IV	NS*	III
Burrowsville	BB	IVb	IVb	III	IV	IV	NS*	III
Burton	FF	IVb	IVb	III	IV	IV	NS*	III
Buzzrock	JJ	V	V	IV	V	IV	NS*	IV
Cahaba	R	IIIa	IIIa	II	II	II	III	II
Calverton	BB	IVb	IVb	III	IV	IV	NS*	III
Calvin	JJ	V	V	IV	V	IV	NS*	IV
Calvin cobbly	JJ	V	V	IV	V	IV	NS*	IV
Camocca	PP	V	V	V	V	Vb	NS*	NS*
Caneyville	Y	IVa	IVa	III	III	III	NS*	III
Cape Fear (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Cape Fear (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Captina	BB	IVb	IVb	III	IV	IV	NS*	III
Carbo	Y	IVa	IVa	III	III	III	NS*	III
Carbonton	Y	IVa	IVa	III	III	III	NS*	III
Cardiff	FF	IVb	IVb	III	IV	IV	NS*	III
Cardova	JJ	V	V	IV	V	IV	NS*	IV
Caroline	AA	IVa	IVa	II	III	Va	NS*	IV
Cartecay	I	IIa	IIa	I	II	Vb	NS*	I
Carteret	PP	V	V	V	V	Vb	NS*	NS*
Cataska	JJ	V	V	IV	V	IV	NS*	IV
Catharpin	X	IVa	IVa	II	III	III	III	II
Catlett	JJ	V	V	IV	V	IV	NS*	IV
Catlett variant	JJ	V	V	IV	V	IV	NS*	IV
Catoctin	JJ	V	V	IV	V	IV	NS*	IV
Catoctin variant	JJ	V	V	IV	V	IV	NS*	IV
Catpoint	II	V	V	III	V	IV	NS*	NS*
Caverns	I	IIa	IIa	I	II	Vb	NS*	I
Cecil	X	IVa	IVa	II	III	III	III	II
Cedarcreek	GG	IVb	IVb	IV	IV	IV	NS*	III
Chagrín	A	Ia	Ia	I	Ia	I	I	I
Chagrín variant	A	Ia	Ia	I	Ia	I	I	I
Chandler	FF	IVb	IVb	III	IV	IV	NS*	III
Chapanoke (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Chapanoke (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Charity	N	IIb	IIb	I	II	II	II	II
Chastain	LL	V	V	V	V	Vb	NS*	IV
Chatuge (drained)	C	Ib	Ib	II	Ib	I	NS*	I

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Chatuge (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Chavies	U	IIIb	IIIb	II	II	II	III	II
Chavies variant	U	IIIb	IIIb	II	II	II	III	II
Chenneby	I	Ila	Ila	I	II	Vb	NS*	I
Chesapeake	B	Ia	Ia	I	Ia	I	II	I
Chester	D	Ib	Ib	I	Ib	I	I	I
Chester Loam	D	Ib	Ib	I	Ib	I	I	I
Chesterfield	V	IVa	IVa	II	III	III	III	III
Chestnut	GG	IVb	IVb	IV	IV	IV	NS*	III
Chewacla	I	Ila	Ila	I	II	Vb	NS*	I
Chickahominy	LL	V	V	V	V	Vb	NS*	IV
Chilhowie	JJ	V	V	IV	V	IV	NS*	IV
Chincoteague	PP	V	V	V	V	Vb	NS*	NS*
Chipleby	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Chiswell	JJ	V	V	IV	V	IV	NS*	IV
Christian	AA	IVa	IVa	II	III	Va	NS*	IV
Christiana	AA	IVa	IVa	II	III	Va	NS*	IV
Cid	KK	V	V	V	V	Vb	NS*	IV
Clairborne	M	IIb	IIb	I	II	II	I	II
Clairborne	U	IIIb	IIIb	II	II	II	III	II
Clapham	BB	IVb	IVb	III	IV	IV	NS*	III
Clarksburg	W	IVa	IVa	IV	III	IV	NS*	IV
Clarksville	GG	IVb	IVb	IV	IV	IV	NS*	III
Clearbrook	JJ	V	V	IV	V	IV	NS*	IV
Clifffield	JJ	V	V	IV	V	IV	NS*	IV
Clifford	X	IVa	IVa	II	III	III	III	II
Clifton	L	IIb	IIb	I	II	II	III	II
Clover	V	IVa	IVa	II	III	III	III	III
Cloverlick	JJ	V	V	IV	V	IV	NS*	IV
Clubcaf	LL	V	V	V	V	Vb	NS*	IV
Clymer	U	IIIb	IIIb	II	II	II	III	II
Codorus	A	Ia	Ia	I	Ia	I	I	I
Codorus stony	A	Ia	Ia	I	Ia	I	I	I
Codorus variant	A	Ia	Ia	I	Ia	I	I	I
Colescreek	L	IIb	IIb	I	II	II	III	II
Colfax	BB	IVb	IVb	III	IV	IV	NS*	III
Colfax variant	BB	IVb	IVb	III	IV	IV	NS*	III
Colleen	KK	V	V	V	V	Vb	NS*	IV
Colvard	II	V	V	III	V	IV	NS*	NS*
Colvard fine	II	V	V	III	V	IV	NS*	NS*
Colvard stony	II	V	V	III	V	IV	NS*	NS*
Combsa	A	Ia	Ia	I	Ia	I	I	I

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Comus	A	Ia	Ia	I	Ia	I	I	I
Conetoe	DD	IVb	IVb	II	IV	III	NS*	III
Congaree	A	Ia	Ia	I	Ia	I	I	I
Coosaw	DD	IVb	IVb	II	IV	III	IV-V	III
Corolla	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Corydon	JJ	V	V	IV	V	IV	NS*	IV
Cotaco	G	IIa	IIa	I	II	IV	II	I
Cotaco cobbly	G	IIa	IIa	I	II	IV	II	I
Cotaco variant	G	IIa	IIa	I	II	IV	II	I
Cottonbend	L	IIb	IIb	I	II	II	III	II
Coursey	G	IIa	IIa	I	II	IV	II	I
Cowee	N	IIb	IIb	I	II	II	II	II
Coxville	LL	V	V	V	V	Vb	NS*	IV
Craggey	JJ	V	V	IV	V	IV	NS*	IV
Craigsville	CC	IVb	IVb	II	IV	IV	NS*	III
Craven	HH	IVb	IVb	III	IV	Vb	NS*	IV
Creedmoor	KK	V	V	V	V	Vb	NS*	IV
Creedmoor variant	KK	V	V	V	V	Vb	NS*	IV
Croton	LL	V	V	V	V	Vb	NS*	IV
Cullasaja	FF	IVb	IVb	III	IV	IV	NS*	III
Cullen	N	IIb	IIb	I	II	II	II	II
Culleoka	U	IIIb	IIIb	II	II	II	III	II
Culpeper	X	IVa	IVa	II	III	III	III	II
Culpeper variant	X	IVa	IVa	II	III	III	III	II
Daleville (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Daleville (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Dan River	G	IIa	IIa	I	II	IV	II	I
Dandridge	JJ	V	V	IV	V	IV	NS*	IV
Danripple	L	IIb	IIb	I	II	II	III	II
Davidson	N	IIb	IIb	I	II	II	II	II
Dawhoo	PP	V	V	V	V	Vb	NS*	NS*
Dawhoo variant	PP	V	V	V	V	Vb	NS*	NS*
Decatur	M	IIb	IIb	I	II	II	I	II
Dekalb	FF	IVb	IVb	III	IV	IV	NS*	III
Dekalb variant	FF	IVb	IVb	III	IV	IV	NS*	III
Delanco	B	Ia	Ia	I	Ia	I	II	I
Delila	HH	IVb	IVb	III	IV	Vb	NS*	IV
Dellwood	CC	IVb	IVb	II	IV	IV	NS*	III
Deloss (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Deloss (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Derroc	CC	IVb	IVb	II	IV	IV	NS*	III
Devotion	FF	IVb	IVb	III	IV	IV	NS*	III

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Diana Mills	V	IVa	IVa	II	III	III	III	III
Dillard	G	IIa	IIa	I	II	IV	II	I
Dogue	K	IIb	IIb	I	II	II	III	I
Dogue variant	K	IIb	IIb	I	II	II	III	I
Dorovan	PP	V	V	V	V	Vb	NS*	NS*
Dothan	Q	IIIa	IIIa	II	II	II	NS*	III
Downer	DD	IIb	IIb	II	IV	III	NS*	III
Dragston	E	IIa	IIa	I	II	Va	NS*	II
Drall	FF	IVb	IVb	III	IV	IV	NS*	III
Drapermill	U	IIIb	IIIb	II	II	II	III	II
Drypond	JJ	V	V	IV	V	IV	NS*	IV
Duckston	QQ	V	V	V	V	Vb	NS*	NS*
Duffield	G	IIa	IIa	I	II	IV	II	I
Dulles	Y	IVa	IVa	III	III	III	NS*	III
Dumfries	T	IIIb	IIIb	II	II	II	NS*	III
Dunbar (drained)	P	IIb	IIb	II	II	Va	NS*	III
Dunbar (undrained)	Z	IVa	IVa	IV	III	IV	NS*	NS*
Dunning (drained)	H	IIa	IIa	III	II	Vb	NS*	IV
Dunning (undrained)	NN	V	V	V	V	Vb	NS*	NS*
Duplin	K	IIb	IIb	I	II	II	III	I
Durham	CC	IVb	IVb	II	IV	IV	NS*	III
Dyke	O	IIb	IIb	I	II	II	II	II
Easthamlet	KK	V	V	V	V	Vb	NS*	IV
Ebbing	G	IIa	IIa	I	II	IV	II	I
Edgehill	CC	IVb	IVb	II	IV	IV	NS*	III
Edgehill variant	CC	IVb	IVb	II	IV	IV	NS*	III
Edgemont	U	IIIb	IIIb	II	II	II	III	II
Edneytown	L	IIb	IIb	I	II	II	III	II
Edneyville	T	IIIb	IIIb	II	II	II	NS*	III
Edom	M	IIb	IIb	I	II	II	I	II
Elbert	LL	V	V	V	V	Vb	NS*	IV
Elbert variant	LL	V	V	V	V	Vb	NS*	IV
Elioak	X	IVa	IVa	II	III	III	III	II
Elk	A	Ia	Ia	I	Ia	I	I	I
Elkton (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Elkton (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Elliber	M	IIb	IIb	I	II	II	I	II
Elsinboro	L	IIb	IIb	I	II	II	III	II
Emory	G	IIa	IIa	I	II	IV	II	I
Emporia	R	IIIa	IIIa	II	II	II	III	II
Endcav	Y	IVa	IVa	III	III	III	NS*	III
Enon	Y	IVa	IVa	III	III	III	NS*	III

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Enott	Y	IVa	IVa	III	III	III	NS*	III
Ernest	W	IVa	IVa	IV	III	IV	NS*	IV
Escatawba	L	IIb	IIb	I	II	II	III	II
Eubanks	N	IIb	IIb	I	II	II	II	II
Eulonia	K	IIb	IIb	I	II	II	III	I
Eunola	T	IIIb	IIIb	II	II	II	NS*	III
Evansham	LL	V	V	V	V	Vb	NS*	IV
Evard	L	IIb	IIb	I	II	II	III	II
Evesboro	II	V	V	III	V	IV	NS*	NS*
Exum	J	IIb	IIb	I	II	II	NS*	I
Faceville	R	IIIa	IIIa	II	II	II	III	II
Fairfax	D	Ib	Ib	I	Ib	I	I	I
Fairpoint	JJ	V	V	IV	V	IV	NS*	IV
Fairview	X	IVa	IVa	II	III	III	III	II
Fairystone	X	IVa	IVa	II	III	III	III	II
Fallsington	E	IIa	IIa	I	II	Va	NS*	II
Fauquier	N	IIb	IIb	I	II	II	II	II
Fauquier, deep phase	N	IIb	IIb	I	II	II	II	II
Faywood	U	IIIb	IIIb	II	II	II	III	II
Featherstone	PP	V	V	V	V	Vb	NS*	NS*
Feds creek	GG	IVb	IVb	IV	IV	IV	NS*	III
Feedstone	G	IIa	IIa	I	II	IV	II	I
Fisherman	QQ	V	V	V	V	Vb	NS*	NS*
Fiveblock	JJ	V	V	IV	V	IV	NS*	IV
Flatwoods	M	IIb	IIb	I	II	II	I	II
Fletcher	U	IIIb	IIIb	II	II	II	III	II
Flume	R	IIIa	IIIa	II	II	II	III	II
Fluvanna	Y	IVa	IVa	III	III	III	NS*	III
Forestdale	LL	V	V	V	V	Vb	NS*	IV
Fork (drained)	P	IIb	IIb	II	II	Va	NS*	III
Fork (undrained)	Z	IVa	IVa	IV	III	IV	NS*	NS*
Fork variant (drained)	P	IIb	IIb	II	II	Va	NS*	III
Fork variant (undrained)	Z	IVa	IVa	IV	III	IV	NS*	NS*
Frankstown	U	IIIb	IIIb	II	II	II	III	II
Frederick	M	IIb	IIb	I	II	II	I	II
Frederick/Lodi	M	IIb	IIb	I	II	II	I	II
Freemanville	Q	IIIa	IIIa	II	II	II	NS*	III
French	A	Ia	Ia	I	Ia	I	I	I
Fripp	QQ	V	V	V	V	Vb	NS*	NS*
Funkstown	A	Ia	Ia	I	Ia	I	I	I
Gaila	FF	IVb	IVb	III	IV	IV	NS*	III
Gainesboro	FF	IVb	IVb	III	IV	IV	NS*	III

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Galestown	II	V	V	III	V	IV	NS*	NS*
Galtsmill	II	V	V	III	V	IV	NS*	NS*
Georgeville	X	IVa	IVa	II	III	III	III	II
Germannanna	L	IIb	IIb	I	II	II	III	II
Gertie	OO	V	V	V	V	Vb	NS*	NS*
Gilpin	U	IIIb	IIIb	II	II	II	III	II
Gilpin variant	U	IIIb	IIIb	II	II	II	III	II
Gladehill	A	Ia	Ia	I	Ia	I	I	I
Glenelg(BRH)	N	IIb	IIb	I	II	II	II	II
Glenelg(NV)	U	IIIb	IIIb	II	II	II	III	II
Glenville	W	IVa	IVa	IV	III	IV	NS*	IV
Glynwood	GG	IVb	IVb	IV	IV	IV	NS*	III
Glynwood Variant	GG	IVb	IVb	IV	IV	IV	NS*	III
Goblintown	V	IVa	IVa	II	III	III	III	III
Goldsboro	J	IIb	IIb	I	II	II	NS*	I
Goldston	JJ	V	V	IV	V	IV	NS*	IV
Goldvein	BB	IVb	IVb	III	IV	IV	NS*	III
Goldvein gritty	BB	IVb	IVb	III	IV	IV	NS*	III
Goresville	N	IIb	IIb	I	II	II	II	II
Granville	R	IIIa	IIIa	II	II	II	III	II
Grassland	L	IIb	IIb	I	II	II	III	II
Greendale	A	Ia	Ia	I	Ia	I	I	I
Greenlee	CC	IVb	IVb	II	IV	IV	NS*	III
Grigsby	A	Ia	Ia	I	Ia	I	I	I
Grimsley	GG	IVb	IVb	IV	IV	IV	NS*	III
Gritney	T	IIIb	IIIb	II	II	II	NS*	III
Groseclose	M	IIb	IIb	I	II	II	I	II
Grover	X	IVa	IVa	II	III	III	III	II
Guernsey	M	IIb	IIb	I	II	II	I	II
Gullion	B	Ia	Ia	I	Ia	I	II	I
Gundy	V	IVa	IVa	II	III	III	III	III
Gunstock	V	IVa	IVa	II	III	III	III	III
Guyen	Z	IVa	IVa	IV	III	IV	NS*	NS*
Gwinnett variant	X	IVa	IVa	II	III	III	III	II
Hagerstown	M	IIb	IIb	I	II	II	I	II
Halewood	U	IIIb	IIIb	II	II	II	III	II
Halifax	KK	V	V	V	V	Vb	NS*	IV
Hanceville	V	IVa	IVa	II	III	III	III	III
Happyland	U	IIIb	IIIb	II	II	II	III	II
Hartleton	FF	IVb	IVb	III	IV	IV	NS*	III
Hartsells	CC	IVb	IVb	II	IV	IV	NS*	III
Hatboro	HH	IVb	IVb	III	IV	Vb	NS*	IV

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Hawksbill	CC	IVb	IVb	II	IV	IV	NS*	III
Hawksbill cobbly	CC	IVb	IVb	II	IV	IV	NS*	III
Hayesville	X	IVa	IVa	II	III	III	III	II
Haymarket	KK	V	V	V	V	Vb	NS*	IV
Hayter	L	IIb	IIb	I	II	II	III	II
Haywood	JJ	V	V	IV	V	IV	NS*	IV
Hazel	JJ	V	V	IV	V	IV	NS*	IV
Hazel channery	JJ	V	V	IV	V	IV	NS*	IV
Hazel Run	U	IIIb	IIIb	II	II	II	III	II
Hazleton	JJ	V	V	IV	V	IV	NS*	IV
Helena	KK	V	V	V	V	Vb	NS*	IV
Helena taxadjunct	KK	V	V	V	V	Vb	NS*	IV
Herndon	V	IVa	IVa	II	III	III	III	III
Hibler	L	IIb	IIb	I	II	II	III	II
Hickoryknob	N	IIb	IIb	I	II	II	II	II
Highsplint	CC	IVb	IVb	II	IV	IV	NS*	III
Hiwassee	O	IIb	IIb	I	II	II	II	II
Hiwassee variant	O	IIb	IIb	I	II	II	II	II
Hoadley	BB	IVb	IVb	III	IV	IV	NS*	III
Hobucken	PP	V	V	V	V	Vb	NS*	NS*
Holly	NN	V	V	V	V	Vb	NS*	NS*
Hollywood	LL	V	V	V	V	Vb	NS*	IV
Hublersburg	M	IIb	IIb	I	II	II	I	II
Huntington	A	Ia	Ia	I	Ia	I	I	I
Hyde (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Hyde (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Ingledove	A	Ia	Ia	I	Ia	I	I	I
Iotla	A	Ia	Ia	I	Ia	I	I	I
Iredell	KK	V	V	V	V	Vb	NS*	IV
Iredell variant	KK	V	V	V	V	Vb	NS*	IV
Irongate	DD	IVb	IVb	II	IV	III	NS*	III
Itman	JJ	V	V	IV	V	IV	NS*	IV
Iuka	F	IIa	IIa	I	II	I	III	II
Izagora	J	IIb	IIb	I	II	II	NS*	I
Jackland	KK	V	V	V	V	Vb	NS*	IV
Jedburg	Z	IVa	IVa	IV	III	IV	NS*	NS*
Jefferson	U	IIIb	IIIb	II	II	II	III	II
Jefferson variant	U	IIIb	IIIb	II	II	II	III	II
Johns (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Johns (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Johns variant (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Johns variant (undrained)	OO	V	V	V	V	Vb	NS*	NS*

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Johnston	PP	V	V	V	V	Vb	NS*	NS*
Junaluska	U	IIIb	IIIb	II	II	II	III	II
Kalmia	S	IIIa	IIIa	II	II	II	NS*	III
Kaymine	JJ	V	V	IV	V	IV	NS*	IV
Keener	O	IIb	IIb	I	II	II	II	II
Kelly	KK	V	V	V	V	Vb	NS*	IV
Kempsville	S	IIIa	IIIa	II	II	II	NS*	III
Kenansville	DD	IVb	IVb	II	IV	III	NS*	III
Kenansville variant	DD	IVb	IVb	II	IV	III	NS*	III
Keyport	K	IIb	IIb	I	II	II	III	I
Kinkora (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Kinkora (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Kinston (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Kinston (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Klej	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Klinesville	JJ	V	V	IV	V	IV	NS*	IV
Konnarock	JJ	V	V	IV	V	IV	NS*	IV
Lackstown	K	IIb	IIb	I	II	II	III	I
Laidig	W	IVa	IVa	IV	III	IV	NS*	IV
Laidig cobbly	W	IVa	IVa	IV	III	IV	NS*	IV
Lakehurst	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Lakeland	II	V	V	III	V	IV	NS*	NS
Lakin	II	V	V	III	V	IV	NS*	NS
Landisburg	W	IVa	IVa	IV	III	IV	NS*	IV
Lanexa	PP	V	V	V	V	Vb	NS*	NS*
Lansdale	FF	IVb	IVb	III	IV	IV	NS*	III
Laroque	FF	IVb	IVb	III	IV	IV	NS*	III
Lawnes	PP	V	V	V	V	Vb	NS*	NS*
Leadvale	BB	IVb	IVb	III	IV	IV	NS*	III
Leaf (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Leaf (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Leaksville	KK	V	V	V	V	Vb	NS*	IV
Leatherwood	OO	V	V	V	V	Vb	NS*	NS*
Leck Kill	U	IIIb	IIIb	II	II	II	III	II
Leedsville	L	IIb	IIb	I	II	II	III	II
Leetonia	II	V	V	III	V	IV	NS*	NS*
Legore	V	IVa	IVa	II	III	III	III	III
Lehew	JJ	V	V	IV	V	IV	NS*	IV
Lenoir	LL	V	V	V	V	Vb	NS*	IV
Leon	II	V	V	III	V	IV	NS*	NS*
Levy	PP	V	V	V	V	Vb	NS*	NS*
Lew	FF	IVb	IVb	III	IV	IV	NS*	III

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Lewisberry	II	V	V	III	V	IV	NS*	NS*
Lewisburg	CC	IVb	IVb	II	IV	IV	NS*	III
Library	KK	V	V	V	V	Vb	NS*	IV
Lickdale (drained)	H	IIa	IIa	III	II	Vb	NS*	IV
Lickdale (undrained)	NN	V	V	V	V	Vb	NS*	NS*
Lignum	LL	V	V	V	V	Vb	NS*	IV
Lily	FF	IVb	IVb	III	IV	IV	NS*	III
Linden	F	IIa	IIa	I	II	I	III	II
Lindside	A	Ia	Ia	I	Ia	I	I	I
Littlejoe	V	IVa	IVa	II	III	III	III	III
Litz	JJ	V	V	IV	V	IV	NS*	IV
Lloyd	N	IIb	IIb	I	II	II	II	II
Lloyd variant	N	IIb	IIb	I	II	II	II	II
Lobdell	A	Ia	Ia	I	Ia	I	I	I
Lodi	M	IIb	IIb	I	II	II	I	II
Lostcove	FF	IVb	IVb	III	IV	IV	NS*	III
Louisa	JJ	V	V	IV	V	IV	NS*	IV
Louisa variant	JJ	V	V	IV	V	IV	NS*	IV
Louisburg	FF	IVb	IVb	III	IV	IV	NS*	III
Lowell	M	IIb	IIb	I	II	II	I	II
Lucketts	Y	IVa	IVa	III	III	III	NS*	III
Lucy	DD	IVb	IVb	II	IV	III	NS*	III
Lumbee (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Lumbee (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Lumbee variant (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Lumbee variant(undrained)	OO	V	V	V	V	Vb	NS*	NS*
Lunt	AA	IVa	IVa	II	III	Va	NS*	IV
Lynchburg	E	IIa	IIa	I	II	Va	NS*	II
Macove	CC	IVb	IVb	II	IV	IV	NS*	III
Madison	X	IVa	IVa	II	III	III	III	II
Madsheep	JJ	V	V	IV	V	IV	NS*	IV
Maggodee	A	Ia	Ia	I	Ia	I	I	I
Magotha	PP	V	V	V	V	Vb	NS*	NS*
Malbis	W	IVa	IVa	IV	III	IV	NS*	IV
Manassas	D	Ib	Ib	I	Ib	I	I	I
Mandy	JJ	V	V	IV	V	IV	NS*	IV
Manor	FF	IVb	IVb	III	IV	IV	NS*	III
Mantachie	I	IIa	IIa	I	II	Vb	NS*	I
Manteo	JJ	V	V	IV	V	IV	NS*	IV
Marbie	W	IVa	IVa	IV	III	IV	NS*	IV
Marbleyard	FF	IVb	IVb	III	IV	IV	NS*	III
Margo	A	Ia	Ia	I	Ia	I	I	I

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Markes	NN	V	V	V	V	Vb	NS*	NS*
Marlboro	R	IIIa	IIIa	II	II	II	III	II
Marr	T	IIIb	IIIb	II	II	II	NS*	III
Marrowbone	JJ	V	V	IV	V	IV	NS*	NS*
Marumsco	K	IIb	IIb	I	II	II	III	I
Masada	L	IIb	IIb	I	II	II	III	II
Massanetta	B	Ia	Ia	I	Ia	I	II	I
Massanutten	JJ	V	V	IV	V	IV	NS*	IV
Matapeake	R	IIIa	IIIa	II	II	II	III	II
Matewan	FF	IVb	IVb	III	IV	IV	NS*	III
Matneflat	CC	IVb	IVb	II	IV	IV	NS*	III
Mattamuskeet	PP	V	V	V	V	Vb	NS*	NS*
Mattan	PP	V	V	V	V	Vb	NS*	NS*
Mattapeake	B	Ia	Ia	I	Ia	I	II	I
Mattapex	K	IIb	IIb	I	II	II	III	I
Mattaponi	R	IIIa	IIIa	II	II	II	III	II
Maurertown	NN	V	V	V	V	Vb	NS*	NS*
Maury	M	IIb	IIb	I	II	II	I	II
Mayodan	V	IVa	IVa	II	III	III	III	III
McCamy	FF	IVb	IVb	III	IV	IV	NS*	III
McClung	M	IIb	IIb	I	II	II	I	II
McGary (drained)	P	IIb	IIb	II	II	Va	NS*	III
McGary (undrained)	Z	IVa	IVa	IV	III	IV	NS*	NS*
McLaurin	DD	IVb	IVb	II	IV	III	NS*	III
McQueen	B	Ia	Ia	I	Ia	I	II	I
Meadowfield	JJ	V	V	IV	V	IV	NS*	IV
Meadows	JJ	V	V	IV	V	IV	NS*	IV
Meadowville	G	IIa	IIa	I	II	IV	II	I
Meadowville variant	G	IIa	IIa	I	II	IV	II	I
Meckesville	W	IVa	IVa	IV	III	IV	NS*	IV
Mecklenburg	V	IVa	IVa	II	III	III	III	III
Mecklenburg variant	V	IVa	IVa	II	III	III	III	III
Meggett (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Meggett (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Melfa	PP	V	V	V	V	Vb	NS*	NS*
Melvin (drained)	H	IIa	IIa	III	II	Vb	NS*	IV
Melvin (undrained)	NN	V	V	V	V	Vb	NS*	NS*
Middleburg	G	IIa	IIa	I	II	IV	II	I
Millrock	II	V	V	III	V	IV	NS*	NS*
Mine Run	II	V	V	III	V	IV	NS*	NS*
Minnieville	N	IIb	IIb	I	II	II	II	II
Mirerock	KK	V	V	V	V	Vb	NS*	IV

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Misenheimer	JJ	V	V	IV	V	IV	NS*	IV
Molena	II	V	V	III	V	IV	NS*	NS*
Monacan	I	IIa	IIa	I	II	Vb	NS*	I
Mongle	H	IIa	IIa	III	II	Vb	NS*	IV
Monongahela	W	IVa	IVa	IV	III	IV	NS*	IV
Montalto	N	IIb	IIb	I	II	II	II	II
Montonia	X	IVa	IVa	II	III	III	III	II
Montresso	D	Ib	Ib	I	Ib	I	I	I
Montross	Q	IIIa	IIIa	II	II	II	NS*	III
Moomaw	W	IVa	IVa	IV	III	IV	NS*	IV
Morasonville	D	Ib	Ib	I	Ib	I	I	I
Morven	G	IIa	IIa	I	II	IV	II	I
Mount Lucas	J	IIb	IIb	I	II	II	NS*	I
Mt. Rogers	GG	IVb	IVb	IV	IV	IV	NS*	III
Muckalee	MM	V	V	V	V	Vb	NS*	IV
Munden	F	IIa	IIa	I	II	I	III	II
Murrill	L	IIb	IIb	I	II	II	III	II
Muskingum	JJ	V	V	IV	V	IV	NS*	IV
Myatt (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Myatt (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Myatt variant (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Myatt variant (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Myersville	D	Ib	Ib	I	Ib	I	I	I
Nahunta	E	IIa	IIa	I	II	Va	NS*	II
Nanford	V	IVa	IVa	II	III	III	III	III
Nansemond	F	IIa	IIa	I	II	I	III	II
Nason	V	IVa	IVa	II	III	III	III	III
Nawney	PP	V	V	V	V	Vb	NS*	NS*
Neabsco	BB	IVb	IVb	III	IV	IV	NS*	III
Needmore	FF	IVb	IVb	III	IV	IV	NS*	III
Nestoria	JJ	V	V	IV	V	IV	NS*	IV
Nevarc	HH	IVb	IVb	III	IV	Vb	NS*	IV
Newark (drained)	H	IIa	IIa	III	II	Vb	NS*	IV
Newark (undrained)	NN	V	V	V	V	Vb	NS*	NS*
Newark variant (drained)	H	IIa	IIa	III	II	Vb	NS*	IV
Newark variant (undrained)	NN	V	V	V	V	Vb	NS*	NS*
Newbern	JJ	V	V	IV	V	IV	NS*	IV
Newflat	LL	V	V	V	V	Vb	NS*	IV
Newhan	QQ	V	V	V	V	Vb	NS*	NS*
Newmarc	B	Ia	Ia	I	Ia	I	II	I
Nicelytown	A	Ia	Ia	I	Ia	I	I	I
Nicholson	BB	IVb	IVb	III	IV	IV	NS*	III

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Nickwasi	JJ	V	V	IV	V	IV	NS*	NS*
Nimmo	E	Ila	Ila	I	II	Va	NS*	II
Nixa	BB	IVb	IVb	III	IV	IV	NS*	III
Nolichucky	O	Ilb	Ilb	I	II	II	II	II
Nolin	A	Ia	Ia	I	Ia	I	I	I
Nollville	G	Ila	Ila	I	II	IV	II	I
Nomberville	A	Ia	Ia	I	Ia	I	I	I
Norfolk	R	IIIa	IIIa	II	II	II	III	II
Oak Level	V	IVa	IVa	II	III	III	III	III
Oakhill	FF	IVb	IVb	III	IV	IV	NS*	III
Oaklet	Y	IVa	IVa	III	III	III	NS*	III
Oatlands	FF	IVb	IVb	III	IV	IV	NS*	III
Occoquan	DD	IVb	IVb	II	IV	III	NS*	III
Ochlockonee	II	V	V	III	V	IV	NS*	NS*
Ochlockonee variant	II	V	V	III	V	IV	NS*	NS*
Ocilla	F	Ila	Ila	I	II	I	III	II
Ogles	CC	IVb	IVb	II	IV	IV	NS*	III
Okeetee	LL	V	V	V	V	Vb	NS*	IV
Opequon	JJ	V	V	IV	V	IV	NS*	IV
Orange	KK	V	V	V	V	Vb	NS*	IV
Orange variant	KK	V	V	V	V	Vb	NS*	IV
Orangeburg	R	IIIa	IIIa	II	II	II	III	II
Orenda	KK	V	V	V	V	Vb	NS*	IV
Oriskany	CC	IVb	IVb	II	IV	IV	NS*	III
Orrville (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Orrville (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Orrville variant (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Orrville variant (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Osier	E	Ila	Ila	I	II	Va	NS*	II
Ostin	II	V	V	III	V	IV	NS*	NS*
Othello (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Othello (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Ott	JJ	V	V	IV	V	IV	NS*	NS*
Pacolet	X	IVa	IVa	II	III	III	III	II
Pactolus	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Paddyknob	JJ	V	V	IV	V	IV	NS*	IV
Pagebrook	Y	IVa	IVa	III	III	III	NS*	III
Pamlico	PP	V	V	V	V	Vb	NS*	NS*
Pamunkey	B	Ia	Ia	I	Ia	I	II	I
Pamunkey variant	B	Ia	Ia	I	Ia	I	II	I
Panorama	U	IIIb	IIIb	II	II	II	III	II
Pantego (drained)	C	Ib	Ib	II	Ib	I	NS*	I

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Pantego (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Parker	GG	IVb	IVb	IV	IV	IV	NS*	III
Partlow	HH	IVb	IVb	III	IV	Vb	NS*	IV
Pasquotank (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Pasquotank (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Peaks	JJ	V	V	IV	V	IV	NS*	IV
Peawick	HH	IVb	IVb	III	IV	Vb	NS*	IV
Pecktonville	M	IIb	IIb	I	II	II	I	II
Penhook	X	IVa	IVa	II	III	III	III	II
Penn	FF	IVb	IVb	III	IV	IV	NS*	III
Philo (drained)	H	IIa	IIa	III	II	Vb	NS*	IV
Philo (undrained)	NN	V	V	V	V	Vb	NS*	NS*
Philoment	D	Ib	Ib	I	Ib	I	I	I
Pigeonroost	N	IIb	IIb	I	II	II	II	II
Pilot Mountain	JJ	V	V	IV	V	IV	NS*	IV
Pineola	L	IIb	IIb	I	II	II	III	II
Pineville	U	IIIb	IIIb	II	II	II	III	II
Pineywoods	NN	V	V	V	V	Vb	NS*	NS*
Pinkston	JJ	V	V	IV	V	IV	NS*	IV
Pinoka	JJ	V	V	IV	V	IV	NS*	IV
Pisgah	M	IIb	IIb	I	II	II	I	II
Plummer	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Pocalla	DD	IVb	IVb	II	IV	III	NS*	III
Pocaty	PP	V	V	V	V	Vb	NS*	NS*
Pocomoke	E	IIa	IIa	I	II	Va	NS*	II
Poindexter	FF	IVb	IVb	III	IV	IV	NS*	III
Poindexter variant	FF	IVb	IVb	III	IV	IV	NS*	III
Polawana	PP	V	V	V	V	Vb	NS*	NS*
Pooler variant (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Pooler variant (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Pope	A	Ia	Ia	I	Ia	I	I	I
Poplimento	M	IIb	IIb	I	II	II	I	II
Porters	FF	IVb	IVb	III	IV	IV	NS*	III
Portsmouth (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Portsmouth (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Post	V	IVa	IVa	II	III	III	III	III
Pouncey	LL	V	V	V	V	Vb	NS*	IV
Poynor	GG	IVb	IVb	IV	IV	IV	NS*	III
Psamments	II	V	V	III	V	IV	NS*	NS*
Pungo	PP	V	V	V	V	Vb	NS*	NS*
Purcellville	D	Ib	Ib	I	Ib	I	I	I
Purdy (drained)	H	IIa	IIa	III	II	Vb	NS*	IV

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Purdy (undrained)	NN	V	V	V	V	Vb	NS*	NS*
Quantico	R	IIIa	IIIa	II	II	II	III	II
Rabun	N	IIb	IIb	I	II	II	II	II
Rains (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Rains (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Ramsey	JJ	V	V	IV	V	IV	NS*	IV
Rapidan	N	IIb	IIb	I	II	II	II	II
Rappahanock	PP	V	V	V	V	Vb	NS*	NS*
Raritan	W	IVa	IVa	IV	III	IV	NS*	IV
Rasalo	Y	IVa	IVa	III	III	III	NS*	III
Rayne	U	IIIb	IIIb	II	II	II	III	II
Readington	W	IVa	IVa	IV	III	IV	NS*	IV
Reaville	JJ	V	V	IV	V	IV	NS*	IV
Redbrush	Y	IVa	IVa	III	III	III	NS*	III
Remlik	DD	IVb	IVb	II	IV	III	NS*	III
Rhodhiss	X	IVa	IVa	II	III	III	III	II
Rigley	CC	IVb	IVb	II	IV	IV	NS*	III
Rion	X	IVa	IVa	II	III	III	III	II
Riverview	G	IIa	IIa	I	II	IV	II	I
Rixeville	JJ	V	V	IV	V	IV	NS*	NS*
Roanoke (drained)	H	IIa	IIa	III	II	Vb	NS*	IV
Roanoke (undrained)	NN	V	V	V	V	Vb	NS*	NS*
Robertsville	LL	V	V	V	V	Vb	NS*	IV
Rockbam	X	IVa	IVa	II	III	III	III	II
Rohrersville	BB	IVb	IVb	III	IV	IV	NS*	III
Ross	A	Ia	Ia	I	Ia	I	I	I
Rough	JJ	V	V	IV	V	IV	NS*	IV
Rowland	A	Ia	Ia	I	Ia	I	I	I
Rumford	DD	IVb	IVb	II	IV	III	NS*	III
Rushtown	FF	IVb	IVb	III	IV	IV	NS*	III
Ruston	S	IIIa	IIIa	II	II	II	NS*	III
Saffell	DD	IVb	IVb	II	IV	III	NS*	III
Santuc	G	IIa	IIa	I	II	IV	II	I
Sassafras	T	IIIb	IIIb	II	II	II	NS*	III
Saunook	L	IIb	IIb	I	II	II	III	II
Sauratown	CC	IVb	IVb	II	IV	IV	NS*	III
Savannah	BB	IVb	IVb	III	IV	IV	NS*	III
Scatterville	BB	IVb	IVb	III	IV	IV	NS*	III
Schaffenaker	II	V	V	III	V	IV	NS*	NS*
Seabrook	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Seagate	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Sedgefield	KK	V	V	V	V	Vb	NS*	IV

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Sekil	FF	IVb	IVb	III	IV	IV	NS*	III
Seneca	G	IIa	IIa	I	II	IV	II	I
Sequatchie	B	Ia	Ia	I	Ia	I	II	I
Sequoia	U	IIIb	IIIb	II	II	II	III	II
Sewell	JJ	V	V	IV	V	IV	NS*	IV
Shelocta	L	IIb	IIb	I	II	II	III	II
Shelocta variant	L	IIb	IIb	I	II	II	III	II
Shenval	O	IIb	IIb	I	II	II	II	II
Sherando	CC	IVb	IVb	II	IV	IV	NS*	III
Sheva	KK	V	V	V	V	Vb	NS*	IV
Shottower	O	IIb	IIb	I	II	II	II	II
Shouns	G	IIa	IIa	I	II	IV	II	I
Sindion	B	Ia	Ia	I	Ia	I	II	I
Skeeterville	KK	V	V	V	V	Vb	NS*	IV
Slabtown	G	IIa	IIa	I	II	IV	II	I
Slagle	K	IIb	IIb	I	II	II	III	I
Snicksville	D	Ib	Ib	I	Ib	I	I	I
Snowdog	BB	IVb	IVb	III	IV	IV	NS*	III
Spears Mountain	V	IVa	IVa	II	III	III	III	III
Speedwell	A	Ia	Ia	I	Ia	I	I	I
Spessard	CC	IVb	IVb	II	IV	IV	NS*	III
Spivey	FF	IVb	IVb	III	IV	IV	NS*	III
Spotsylvania	V	IVa	IVa	II	III	III	III	III
Spray	JJ	V	V	IV	V	IV	NS*	IV
Spriggs	JJ	V	V	IV	V	IV	NS*	IV
Springwood	D	Ib	Ib	I	Ib	I	I	I
Stanton	LL	V	V	V	V	Vb	NS*	IV
Starr	G	IIa	IIa	I	II	IV	II	I
Starr-Dyke	O	IIb	IIb	I	II	II	II	II
Staser	A	Ia	Ia	I	Ia	I	I	I
State (ES)	T	IIIb	IIIb	II	II	II	NS*	III
State (Mainland)	B	Ia	Ia	I	Ia	I	II	I
Steinsburg	JJ	V	V	IV	V	IV	NS*	IV
Stonecoal	JJ	V	V	IV	V	IV	NS*	IV
Stoneville	X	IVa	IVa	II	III	III	III	II
Stott Knob	N	IIb	IIb	I	II	II	II	II
Stough	F	IIa	IIa	I	II	I	III	II
Straightstone	V	IVa	IVa	II	III	III	III	III
Strawfield	X	IVa	IVa	II	III	III	III	II
Stumptown	FF	IVb	IVb	III	IV	IV	NS*	III
Suches	A	Ia	Ia	I	Ia	I	I	I
Sudley	D	Ib	Ib	I	Ib	I	I	I

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Suffolk	T	IIIb	IIIb	II	II	II	NS*	III
Sugarhol	O	IIb	IIb	I	II	II	II	II
Sulfaquents	PP	V	V	V	V	Vb	NS*	NS*
Summers	GG	IVb	IVb	IV	IV	IV	NS*	III
Susquehanna	KK	V	V	V	V	Vb	NS*	IV
Swamp	PP	V	V	V	V	Vb	NS*	NS*
Swampoodle	D	Ib	Ib	I	Ib	I	I	I
Sweetapple	FF	IVb	IVb	III	IV	IV	NS*	III
Swimley	M	IIb	IIb	I	II	II	I	II
Sycoline	KK	V	V	V	V	Vb	NS*	IV
Sylco	JJ	V	V	IV	V	IV	NS*	IV
Sylvatus	JJ	V	V	IV	V	IV	NS*	IV
Talladega	JJ	V	V	IV	V	IV	NS*	IV
Tallapoosa	JJ	V	V	IV	V	IV	NS*	IV
Tallapoosa variant	JJ	V	V	IV	V	IV	NS*	IV
Tanasee	JJ	V	V	IV	V	IV	NS*	IV
Tankerville	N	IIb	IIb	I	II	II	II	II
Tankerville taxadjunct	N	IIb	IIb	I	II	II	II	II
Tarboro	II	V	V	III	V	IV	NS*	NS*
Tarrus	X	IVa	IVa	II	III	III	III	II
Tate	O	IIb	IIb	I	II	II	II	II
Tate variant	O	IIb	IIb	I	II	II	II	II
Tatum	X	IVa	IVa	II	III	III	III	II
Terric Medisaprists	PP	V	V	V	V	Vb	NS*	NS*
Tetotum	K	IIb	IIb	I	II	II	III	I
Tetotum variant	K	IIb	IIb	I	II	II	III	I
Thunder	GG	IVb	IVb	IV	IV	IV	NS*	III
Thurmont	L	IIb	IIb	I	II	II	III	II
Tidal Marsh	PP	V	V	V	V	Vb	NS*	NS*
Tidal Marsh, high	PP	V	V	V	V	Vb	NS*	NS*
Tidal Marsh, low	PP	V	V	V	V	Vb	NS*	NS*
Tidal Mudflats	PP	V	V	V	V	Vb	NS*	NS*
Tidal Pool	PP	V	V	V	V	Vb	NS*	NS*
Tifton	Q	IIIa	IIIa	II	II	II	NS*	III
Timberville	G	IIa	IIa	I	II	IV	II	I
Timberville variant	G	IIa	IIa	I	II	IV	II	I
Tioga	A	Ia	Ia	I	Ia	I	I	I
Toccoa	II	V	V	III	V	IV	NS*	NS*
Toddstav	HH	IVb	IVb	III	IV	Vb	NS*	IV
Tomotley (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Tomotley (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Toms	C	Ib	Ib	II	Ib	I	NS*	I

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Toqast	V	IVa	IVa	II	III	III	III	III
Torhunta	E	IIa	IIa	I	II	Va	NS*	II
Totier	U	IIIb	IIIb	II	II	II	III	II
Toxaway (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Toxaway (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Trappist	U	IIIb	IIIb	II	II	II	III	II
Trego	W	IVa	IVa	IV	III	IV	NS*	IV
Trenholm	KK	V	V	V	V	Vb	NS*	IV
Trimont	FF	IVb	IVb	III	IV	IV	NS*	III
Trussell	BB	IVb	IVb	III	IV	IV	NS*	NS*
Tuckahoe	A	Ia	Ia	I	Ia	I	I	I
Tuckasegee	G	IIa	IIa	I	II	IV	II	I
Tugglesgap	CC	IVb	IVb	II	IV	IV	NS*	III
Tumbling	O	IIb	IIb	I	II	II	II	II
Turbeville	O	IIb	IIb	I	II	II	II	II
Tusquitee	G	IIa	IIa	I	II	IV	II	I
Tygart (drained)	P	IIb	IIb	II	II	Va	NS*	III
Tygart (undrained)	Z	IVa	IVa	IV	III	IV	NS*	NS*
Uchee	DD	IVb	IVb	II	IV	III	NS*	III
Unison	L	IIb	IIb	I	II	II	III	II
Unison variant	L	IIb	IIb	I	II	II	III	II
Vance	Y	IVa	IVa	III	III	III	NS*	III
Vandalia	L	IIb	IIb	I	II	II	III	II
Varina	Q	IIIa	IIIa	II	II	II	NS*	III
Vaocluse	Q	IIIa	IIIa	II	II	II	NS*	III
Vaocluse	Q	IIIa	IIIa	II	II	II	NS*	III
Vertrees	M	IIb	IIb	I	II	II	I	II
Virgilina	KK	V	V	V	V	Vb	NS*	IV
Wadesboro	X	IVa	IVa	II	III	III	III	II
Wagram	DD	IVb	IVb	II	IV	III	NS*	III
Wahee (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Wahee (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Wakulla	II	V	V	III	V	IV	NS*	NS*
Wallen	JJ	V	V	IV	V	IV	NS*	IV
Walnut	GG	IVb	IVb	IV	IV	IV	NS*	III
Wando	II	V	V	III	IV	IV	NS*	III
Warminster	X	IVa	IVa	II	III	III	III	II
Watahala	M	IIb	IIb	I	II	II	I	II
Watauga	V	IVa	IVa	II	III	III	III	III
Wateree	FF	IVb	IVb	III	IV	IV	NS*	III
Watt	JJ	V	V	IV	V	IV	NS*	IV
Watt variant	JJ	V	V	IV	V	IV	NS*	IV

Table 2. Soil Productivity Groupings for Various Cropping Categories.

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Waxpool	LL	V	V	V	V	Vb	NS*	IV
Waynesboro	L	IIb	IIb	I	II	II	III	II
Weaver	A	Ia	Ia	I	Ia	I	I	I
Webbtown	JJ	V	V	IV	V	IV	NS*	IV
Wedowee	V	IVa	IVa	II	III	III	III	III
Weeksville (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Weeksville (undrained)	OO	V	V	V	V	Vb	NS*	NS*
Wehadkee	MM	V	V	V	V	Vb	NS*	IV
Weikert	JJ	V	V	IV	V	IV	NS*	IV
Westfield	V	IVa	IVa	II	IV	III	III	III
Westmoreland	U	IIIb	IIIb	II	II	II	III	II
Weston	E	Ila	Ila	I	II	Va	NS*	II
Westphalia	II	V	V	III	V	IV	NS*	NS*
Weverton	GG	IVb	IVb	IV	IV	IV	NS*	III
Wharton	M	IIb	IIb	I	II	II	I	II
Wheeling	A	Ia	Ia	I	Ia	I	I	I
White Store	KK	V	V	V	V	Vb	NS*	IV
White Store variant	KK	V	V	V	V	Vb	NS*	IV
Whiteford	U	IIIb	IIIb	II	II	II	III	II
Wickham	B	Ia	Ia	I	Ia	I	II	I
Wickham variant	B	Ia	Ia	I	Ia	I	II	I
Widget	CC	IVb	IVb	II	IV	IV	NS*	III
Wilkes	JJ	V	V	IV	V	IV	NS*	IV
Wingina	A	Ia	Ia	I	Ia	I	I	I
Winnsboro	KK	V	V	V	V	Vb	NS*	IV
Wintergreen	O	IIb	IIb	I	II	II	II	II
Winton	B	Ia	Ia	I	Ia	I	II	I
Wolfgap	A	Ia	Ia	I	Ia	I	I	I
Wolftrap	K	IIb	IIb	I	II	II	III	I
Woodington	EE	IVb	IVb	III	IV	Vb	NS*	NS*
Woodstown	J	IIb	IIb	I	II	II	NS*	I
Woolvine	V	IVa	IVa	II	III	III	III	III
Woolwine	V	IVa	IVa	II	III	III	III	III
Worsham	HH	IVb	IVb	III	IV	Vb	NS*	IV
Worsham variant	HH	IVb	IVb	III	IV	Vb	NS*	IV
Wrightsboro	J	IIb	IIb	I	II	II	NS*	I
Wurno	JJ	V	V	IV	V	IV	NS*	IV
Wyrick	G	Ila	Ila	I	II	IV	II	I
Yadkin	X	IVa	IVa	II	III	III	III	II
Yellowbottom	V	IVa	IVa	II	III	III	III	III
Yemassee (drained)	C	Ib	Ib	II	Ib	I	NS*	I
Yemassee (undrained)	OO	V	V	V	V	Vb	NS*	NS*

Soil Series	Soil MG	Corn	Grain Sorghum	Small Grains	Soybeans	Canola	Alfalfa	Tall GHP
Yeopim	K	IIb	IIb	I	II	II	III	I
Yogaville	MM	V	V	V	V	Vb	NS*	IV
York	BB	IVb	IVb	III	IV	IV	NS*	III
Zepp	JJ	V	V	IV	V	IV	NS*	IV
Zion	Y	IVa	IVa	III	III	III	NS*	III
Zion variant	Y	IVa	IVa	III	III	III	NS*	III
Zoar	K	IIb	IIb	I	II	II	III	I

Table 3. Soil Productivity Groups vs Soil Management Groups for Corn Grain and Corn Silage.

Soil Management Groups	Soil Productivity Groups	Realistic Grain Yield, Bu/A	Realistic Silage Yield, T/A (35% D.M.)
A, B	Ia	180	25
C, D	Ib	170	24
E, F, G, H, I	IIa	160	23
J, K, L, M, N, O, P	IIb	150	22
Q, R, S	IIIa	140	21
T, U	IIIb	130	20
V, W, X, Y, AA	IVa	120	19
BB, CC, DD, EE, FF, GG, HH	IVb	100	18
II, JJ, KK, LL, MM, NN, OO, PP, QQ	V	80	16

Table 4. Soil Productivity Groups vs Soil Management Groups for Intensively Managed Wheat.

Soil Management Groups	Soil Productivity Groups	Realistic Yield, Bu/A
A, B, D, E, F, G, I, J, K, L, M, N, O	I	80
C, P, Q, R, S, T, U, V, X, CC, DD, AA	II	70
H, Y, BB, EE, FF, HH, II	III	60
W, Z, GG, JJ	IV	50
KK, LL, MM, NN, OO, PP, QQ	V	30

Table 5. Soil Productivity Groups vs Management Groups for Cereal Grain Silage.

SMG	SPG	Barley/Oats/Rye Yield Tons/A (35% Dry Matter)**	Wheat/Triticale Yield Tons/A (35% Dry Matter)**
A, B, D, E, F, G, I, J, K, L, M, N, O	I	>10	>12
C, P, Q, R, S, T, U, V, X, CC, DD	II	8-10	10-12
H, V, BB, EE, FF, HH, II, Y	III	6-8	8-10
W, Z, GG, JJ	IV	3-6	4-8
KK, LL, MM, NN, OO, PP, QQ	V*	<3	<4

* Indicates these soils are not well suited for this crop

** These yields are adjusted to 35% dry matter as with corn silage.

Table 6. Soil productivity Groups vs Soil Management Groups for Alfalfa and Alfalfa-Orchard Grass Hay.

Soil Management Groups	Soil Productivity Groups	Realistic Yield, T/A
A, D, M	I	>6 T/A
B, G, N, O	II	4-6 T/A
F, K, L, R, U, V, X	III	<4 T/A
C, E, H, I, J, EE, HH, P, Z, LL, OO, S, T, DD, GG, II, QQ, PP, MM, Q, W, BB, Y, AA, KK, CC, FF, JJ	IV-V	Poorly suited <4T/A: Too Wet Droughty Fragipans Claypan Shallow Profiles

Table 7. Soil Productivity Groups vs Soil Management Groups for Tall Grass-Clover Hay.

Soil Management Groups	Soil Productivity Groups	Realistic Yield, T/A
A, B, C, D, G, I, J, K	I	>4.0 T/A
E, F, L, M, N, O, R, U	II	3.5-4.0 T/A
Q, S, T, V, X, Y, BB, CC, DD, FF, GG	III	3.0-3.5 T/A
H, P, W, AA, HH, JJ, KK, LL, MM	IV	<3.0 T/A
Z, EE, NN, OO, PP, II, QQ	---	Poorly suited <3.0 T/A Too Wet Too Dry

Table 8. Productivity Groups vs Carrying Capacity for Pasture.

Soil Productivity Groups	Acres per Animal Unit* Required for April 1 – October 31
I	1.0
II	1.1-1.5
III	1.6-3.0
IV, V	3.1-6.5

* Animal Unit (AU) - one 1000 lb. cow and her calf
or two 500 lb. steers
or five ewes with lambs

Table 9. Soil Productivity Groups vs Management Groups for Bermuda Grass Hay.

SMG	SPG	Yield Tons/A
A, B, C, D, G, I, J, K	I	>6
E, F, L, M, N, O, R, U	II	5-6
Q, S, T, V, X, Y, BB, CC, DD, FF, GG	III	4-5
H, P, W, AA, HH, JJ, KK, LL, MM	IV	3-4
Z, EE, NN, OO, PP, II, QQ	V*	<3 (Too wet) (Too dry)

* Indicates these soils are not well suited for this crop

Table 10. Soil Productivity Groups vs Management Groups for Prairie Grass Hay.

SMG	SPG	Yield Tons/A
A, B, C, D, G, I, J, K	I	>5
E, F, L, M, N, O, R, U	II	4.25-5
Q, S, T, V, X, Y, BB, CC, DD, FF, GG	III	3.5-4.25
H, P, W, AA, HH, JJ, KK, LL, MM	IV	3—3.5
Z, EE, NN, OO, PP, II, QQ	V*	<3.0 Too wet Too dry

* Indicates these soils are not well suited for this crop

Table 11. Sudan, Sudan-Sorghum Hybrids and Pearl Millet Plantings.

Soil Test Level	Fertilizer N*	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	70	120	120
L	70	110	110
L+	70	100	100
M-	70	90	90
M	70	80	80
M+	70	70	70
H-	70	60	60
H	70	50	50
H+	70	40	40
VH	70	0	0

* The N recommendation is for application at planting. If additional pasture, hay, or silage production is desired, Apply 40-60 lb/A N after each cutting/grazing. Do not Apply more than 200 lb/A N per year.

Table 12. Alfalfa and Alfalfa-Orchard Grass Establishment.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	0	170	170
L	0	160	160
L+	0	150	150
M-	0	140	140
M	0	130	130
M+	0	120	120
H-	0	110	110
H	0	80	80
H+	0	50	50
VH	0	0	0

Table 13. Alfalfa and Alfalfa-Orchard Grass Hay Maintenance, Soil Productivity Group I*.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	0	120	450
L	0	110	420
L+	0	100	390
M-	0	90	360
M	0	80	330
M+	0	70	300
H-	0	60	210
H	0	50	120
H+	0	40	40
VH	0	0	0

* For K₂O rates greater than 200 lb/A, split the application, applying ½ in the fall and ½ in the spring. (Alternate recommendation where field are sampled in spring – apply ½ in early spring, and ½ after the first cutting).

Table 14. Alfalfa and Alfalfa-Orchard Grass Hay Maintenance, Soil Productivity Group II*.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	0	120	330
L	0	110	300
L+	0	100	280
M-	0	90	270
M	0	80	245
M+	0	70	220
H-	0	60	200
H	0	50	120
H+	0	40	60
VH	0	0	0

* For K₂O rates greater than 200 lb/A, split the application, applying ½ in the fall and ½ in the spring. (Alternate recommendation where fields are sampled in spring – apply ½ in early spring, and ½ after the first cutting).

Table 15. Alfalfa and Alfalfa-Orchard Grass Hay Maintenance, Soil Productivity Group III*.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	0	90	240
L	0	80	220
L+	0	70	200
M-	0	60	185
M	0	50	170
M+	0	40	160
H-	0	40	145
H	0	40	90
H+	0	40	40
VH	0	0	0

Table 16. Red Clover-Orchard Grass, Orchards Grass/Fescue-Ladino Clover, Orchard Grass and Fescue Establishment.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	40	170	170
L	40	160	160
L+	40	150	150
M-	40	140	140
M	40	130	130
M+	40	120	120
H-	40	110	110
H	40	75	75
H+	40	40	40
VH	40	0	0

Apply the nitrogen at the time the grass is seeded in late summer, early fall or early spring. Overseed the grass with clover the following February.

Table 17. Red Clover-Grass Hay Maintenance, Soil Productivity Groups I and II.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	0	120	240
L	0	110	220
L+	0	100	200
M-	0	90	185
M	0	80	170
M+	0	70	160
H-	0	60	145
H	0	50	90
H+	0	40	40
VH	0	0	0

Table 18. Red Clover-Grass Hay Maintenance, Soil Productivity Groups III and IV.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	0	90	145
L	0	80	130
L+	0	70	120
M-	0	60	110
M	0	50	95
M+	0	40	85
H-	0	40	75
H	0	40	55
H+	0	40	40
VH	0	0	0

Table 19. Stockpiled Tall Fescue, Soil Productivity Groups I and II.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	60-100*	120	120
L	60-100*	110	110
L+	60-100*	100	100
M-	60-100*	90	90
M	60-100*	80	80
M+	60-100*	40	40
H-	60-100*	0	0
H	60-100*	0	0
H+	60-100*	0	0
VH	60-100*	0	0

Apply the N in August. Where clover makes up more than 25% of the stand, use the 60 lb N rate. If clover is not present and maximum production is desired, apply the 100 lb N rate.

If additional production is needed later on, apply 40 to 60 lb/A of N. If you are planning to overseed a legume into the stand, omit the N recommendation.

Table 20. Stockpiled Tall Fescue, Soil Productivity Groups III and IV.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	50-80*	60	60
L	50-80*	50	50
L+	50-80*	40	40
M-	50-80*	30	30
M	50-80*	30	30
M+	50-80*	30	30
H-	50-80*	0	0
H	50-80*	0	0
H+	50-80*	0	0
VH	50-80*	0	0

Apply the N in August. Where clover makes up more than 25% of the stand, use the 50 lb N rate. If clover is not present and maximum production is desired, apply the 80 lb N rate.

If additional production is needed later on, apply 40 to 60 lb/A of N. If planning to overseed a legume into the stand, omit the N recommendation.

Table 21. Orchard Grass/Fescue-Clover Pastures, Soil Productivity Groups I and II*.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	0**	120	120
L	0**	110	110
L+	0**	100	100
M-	0**	90	90
M	0**	80	80
M+	0**	40	40
H-	0**	0	0
H	0**	0	0
H+	0**	0	0
VH	0**	0	0

* If stand contains less than 25% clover, apply 50-80 lbs/A of N.

** If additional production is needed later on, apply 40-60 lbs/A of N. If planning to overseed a legume into the stand, omit the N application.

Table 22. Orchard Grass/Fescue-Clover Pastures, Soil Productivity Groups III and IV*.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	0**	60	80
L	0**	50	70
L+	0**	40	60
M-	0**	30	50
M	0**	30	40
M+	0**	30	30
H-	0**	0	0
H	0**	0	0
H+	0**	0	0
VH	0**	0	0

* If stand contains less than 25% clover, apply 40-60 lbs/A of N.

** If additional production is needed later on, apply 40 to 60 lbs/A of N. If planning to overseed a legume into the stand, omit the N application.

Table 23. Native or Unimproved Pastures, Soil Productivity Groups I and II*.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅ **	Lb/A K ₂ O**
L-	0	200	200
L	0	175	175
L+	0	150	150
M-	0	125	125
M	0	100	100
M+	0	75	75
H-	0	0	0
H	0	0	0
H+	0	0	0
VH	0	0	0

* If stand contains less than 25% clover, apply 40-60 lbs/A of N.
 For phosphorus + potassium application once each three or four years.
 If additional production is needed later on, apply 40 to 60 lbs/A of N. If planning to overseed a legume into the stand, omit the N application.

Table 24. Native or Unimproved Pastures, Soil Productivity Groups III and IV*.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅ **	Lb/A K ₂ O**
L-	0	120	120
L	0	110	110
L+	0	100	100
M-	0	90	90
M	0	80	80
M+	0	40	40
H-	0	0	0
H	0	0	0
H+	0	0	0
VH	0	0	0

* If stand contains less than 25% clover, apply 40-60 lbs/A of N.
 For phosphorus + potassium application once every three or four years.

Table 25. Orchard Grass/Fescue (Tall Grass) Hay Maintenance, Soil Productivity Groups I and II.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	80-100*	120	240
L	80-100*	110	220
L+	80-100*	100	200
M-	80-100*	90	185
M	80-100*	80	170
M+	80-100*	70	160
H-	80-100*	60	145
H	80-100*	50	90
H+	80-100*	40	40
VH	80-100*	0	0

* The N recommendation is for a March application. If additional hay production is needed, apply 80 lbs N/A after each cutting. Do not apply more than 250 lbs/A per year.

Table 26. Orchard Grass/Fescue (Tall Grass) Hay Maintenance, Soil Productivity Groups III and IV.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	60-80*	90	145
L	60-80*	80	130
L+	60-80*	70	120
M-	60-80*	60	110
M	60-80*	50	95
M+	60-80*	40	85
H-	60-80*	40	75
H	60-80*	40	55
H+	60-80*	40	40
VH	60-80*	0	0

* N recommendation is for a March application. For additional fall hay production apply 60-80 lbs N/A in late August/early September. Do not apply more than 160 lbs N/A/year.

Table 27. Bermuda Grass Establishment, All Soil Productivity Groups.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	70	120	120
L	70	110	110
L+	70	100	100
M-	70	90	90
M	70	80	80
M+	70	70	70
H-	70	60	60
H	70	50	50
H+	70	40	40
VH	70	0	0

Table 28. Bermuda Grass Pastures, Soil Productivity Groups I, II.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	175-225*	120	120
L	175-225*	110	110
L+	175-225*	100	100
M-	175-225*	90	90
M	175-225*	80	80
M+	175-225*	40	40
H-	175-225*	0	0
H	175-225*	0	0
H+	175-225*	0	0
VH	175-225*	0	0

* The N recommendation represents the total amount of N to be applied during the season. Split the N in to three applications, - April, June and July.

Table 29. Bermuda Grass Pastures, Soil Productivity Groups III, IV, V**.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	120-180*	120	120
L	120-180*	110	110
L+	120-180*	100	100
M-	120-180*	90	90
M	120-180*	80	80
M+	120-180*	40	40
H-	120-180*	0	0
H	120-180*	0	0
H+	120-180*	0	0
VH	120-180*	0	0

* The N recommendation represents the total amount of N to be applied during the season. Split the N in to three applications, - April, June and July.

** Use the lower end of the range for Group V soils.

Table 30. Bermuda Grass Hay Production, Soil Productivity Groups I & II (Use Tall Grass Productivity Group).

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	240-300*	120	275
L	240-300*	110	255
L+	240-300*	100	235
M-	240-300*	90	225
M	240-300*	80	205
M+	240-300*	70	185
H-	240-300*	60	165
H	240-300*	50	100
H+	240-300*	40	40
VH	240-300*	0	0

* Total application of N should be divided equally between an early April application and any applications made after the first and second harvests.

Table 31. Bermuda Grass Hay Production, Soil Productivity Groups III, IV, V**.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	210-260*	120	275
L	210-260*	110	255
L+	210-260*	100	235
M-	210-260*	90	225
M	210-260*	80	205
M+	210-260*	70	185
H-	210-260*	60	165
H	210-260*	50	100
H+	210-260*	40	40
VH	210-260*	0	0

* Total application of N should be divided equally between an early April application and any applications made after the first and second harvests.

*** Use lower end of range for Group V soils.

Table 32. Annual Rye Grass Hay Production, Soil Productivity Groups I and II.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	40-50	120	240
L	40-50	110	220
L+	40-50	100	200
M-	40-50	90	185
M	40-50	80	170
M+	40-50	70	160
H-	40-50	60	145
H	40-50	50	90
H+	40-50	40	40
VH	40-50	0	0

* The above N rates are recommended at seeding. For additional production 30-40 lb/A of N should be added after each grazing/cutting. Do not exceed 200 lb/A N.

Table 33. Annual Rye Grass Hay Production. Soil Productivity Groups III and IV.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	40-50	90	145
L	40-50	80	130
L+	40-50	70	120
M-	40-50	60	110
M	40-50	50	95
M+	40-50	40	85
H-	40-50	40	75
H	40-50	40	55
H+	40-50	40	40
VH	40-50	0	0

* The 40-50 lb/A N rate is at seeding, with 40-50 lb/A N added after each cutting and 30-40 lb/A N after each grazing. Do not exceed 200 lb/A N.

Table 34. Prairie Grass (Tall Grass) Hay Production, Soil Productivity Groups I and II.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	80-100*	120	330
L	80-100*	110	300
L+	80-100*	100	280
M-	80-100*	90	270
M	80-100*	80	245
M+	80-100*	70	220
H-	80-100*	60	200
H	80-100*	50	120
H+	80-100*	40	60
VH	80-100*	0	0

* The N recommendation is for a March application. Apply 40-60 lbs/A after hay or silage cuttings but do not exceed 300 lbs/A per year. If rotational grazing is used, apply 30-40 lb/A after each grazing, but do not exceed a total of 250 lbs/A.

Table 35. Prairie Grass (Tall Grass) Hay Production, Soil Productivity Groups III and IV.

Soil Test Level	Fertilizer N	Recommendations, P ₂ O ₅	Lb/A K ₂ O
L-	60-80*	120	240
L	60-80*	110	220
L+	60-80*	100	200
M-	60-80*	90	185
M	60-80*	80	170
M+	60-80*	70	160
H-	60-80*	60	145
H	60-80*	50	90
H+	60-80*	40	40
VH	60-80*	0	0

* The N recommendation is for a March application. Apply 40-60 lbs/A after hay or silage cuttings but do not exceed 300 lbs/A per year. If rotational grazing is used, apply 30-40 lb/A after each grazing, but do not exceed a total of 250 lbs/A per year.