NCDA&CS Agronomic Division	Phone: (919) 733-2655	Website: www.ncagr.gov/agronomi/	Report No.	FY19-SL024396

Internal

Soil Report

Mehlich-3 Extraction

Links to Helpful Information

Sampled: 01/25/2019　**Received:** 02/13/2019　**Completed:** 02/22/2019　**Farm:** Clinton RS

Client: Horticultural Crops Research Station / Clinton
2450 Faison Hwy
Clinton, NC 28328

Sampled County : Sampson
Client ID: 403047

Advisor:

Advisor ID:

Sample ID: 1-1

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre)									More Information
		N	P$_2$O$_5$	K$_2$O	Mg	S	Mn	Zn	Cu	B	
1 - Soybean	0.0	0	0	100	0	25	0	0	0	0	Note: 3
2 - Small Grain (SG)	0.0	80-100	0	100	0	25	0	0	0	0	Note: 3

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO$_3$-N in mg/dm^3]:　　**Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO$_3$-N
0.27	1.48	2.0	88	0.2	6.4	158	18	68	15	23	111	71	71	67	67	49	0.1	5		7

Sample ID: 1-2

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre)									More Information
		N	P$_2$O$_5$	K$_2$O	Mg	S	Mn	Zn	Cu	B	
1 - Soybean	0.0	0	0	90	0	0	pH$	0	0	0	Note: 3　Note: $
2 - Small Grain (SG)	0.0	80-100	0	90	0	0	pH$	0	0	0	Note: 3　Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO$_3$-N in mg/dm^3]:　　**Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO$_3$-N
0.18	1.42	2.6	94	0.2	6.7	192	24	79	10	29	100	60	60	101	101	62	0.1	4		7

Sample ID: 1-3

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre)									More Information
		N	P$_2$O$_5$	K$_2$O	Mg	S	Mn	Zn	Cu	B	
1 - Soybean	0.0	0	0	100	0	0	pH$	0	0	0	Note: 3　Note: $
2 - Small Grain (SG)	0.0	80-100	0	100	0	0	pH$	0	0	0	Note: 3　Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO$_3$-N in mg/dm^3]:　　**Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO$_3$-N
0.22	1.44	2.8	93	0.2	6.7	233	21	79	10	29	116	69	69	132	132	70	0.1	4		8

Thank you for using agronomic services to manage nutrients and safeguard environmental quality.

- Steve Troxler, Commissioner of Agriculture

North Carolina
Tobacco Trust Fund Commission

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Sample ID: 1-4

Recommendations: Crop	Lime (tons/acre)	N	P2O5	K2O	Mg	S	Mn	Zn	Cu	B	More Information
Lime History:											
1 - Soybean	0.0	0	0	120	25	0	0	0	0	0	Note: 3
2 - Small Grain (SG)	0.0	80-100	0	120	$	0	0	0	0	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.13	1.39	1.2	74	0.3	5.8	104	12	55	14	30	83	60	60	27	27	42	0.1	8	8	

Sample ID: 1-5

Recommendations: Crop	Lime (tons/acre)	N	P2O5	K2O	Mg	S	Mn	Zn	Cu	B	More Information
Lime History:											
1 - Soybean	0.0	0	50	120	25	25	0	6	2	0	Note: 3
2 - Small Grain (SG)	0.0	80-100	50	120	$	25	0	$	$	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.04	1.47	1.1	85	0.2	5.7	36	13	60	19	24	39	33	33	15	15	20	0.1	9	5	

Sample ID: 2-1

Recommendations: Crop	Lime (tons/acre)	N	P2O5	K2O	Mg	S	Mn	Zn	Cu	B	More Information
Lime History:											
1 - Soybean	0.0	0	0	100	0	25	pH$	0	0	0	Note: 3 Note: $
2 - Small Grain (SG)	0.0	80-100	0	100	0	25	pH$	0	0	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.18	1.44	2.6	92	0.2	6.7	175	19	75	13	22	90	54	54	95	95	54	0.1	4	7	

Sample ID: 2-2

Recommendations: Crop	Lime (tons/acre)	N	P2O5	K2O	Mg	S	Mn	Zn	Cu	B	More Information
Lime History:											
1 - Soybean	0.0	0	0	90	25	25	pH$	0	0	0	Note: 3 Note: $
2 - Small Grain (SG)	0.0	80-100	0	90	$	25	pH$	0	0	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.18	1.43	2.7	96	0.1	6.7	209	23	82	9	21	103	61	61	109	109	64	0.1	4	7	

Sample ID: 2-3

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre)									More Information
		N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	
1 - Soybean	0.0	0	0	100	0	0	pH$	0	0	0	Note: 3 Note: $
2 - Small Grain (SG)	0.0	80-100	0	100	0	0	pH$	0	0	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in $meq/100\ cm^3$; NO_3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.18	1.46	2.9	96	0.1	6.7	244	21	83	10	27	118	70	70	127	127	76	0.1	3	8	

Sample ID: 2-4

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre)									More Information
		N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	
1 - Soybean	0.0	0	0	120	25	25	0	0	0	0	Note: 3
2 - Small Grain (SG)	0.0	80-100	0	120	$	25	0	0	0	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in $meq/100\ cm^3$; NO_3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.13	1.45	1.3	75	0.3	6.0	100	12	58	13	18	74	54	54	31	31	39	0.1	8	6	

Sample ID: 2-5

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre)									More Information
		N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	
1 - Soybean	0.0	0	40	110	25	0	0	6	2	0	Note: 3
2 - Small Grain (SG)	0.0	80-100	40	110	$	0	0	$	$	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in $meq/100\ cm^3$; NO_3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.09	1.48	1.3	76	0.3	5.4	42	16	52	18	38	34	30	30	14	14	21	0.1	8	6	

Sample ID: 3-1

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre)									More Information
		N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	
1 - Soybean	0.0	0	0	110	0	25	pH$	0	0	0	Note: 3 Note: $
2 - Small Grain (SG)	0.0	80-100	0	110	0	25	pH$	0	0	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in $meq/100\ cm^3$; NO_3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.18	1.42	2.1	92	0.2	6.6	156	17	74	14	25	89	55	55	78	78	48	0.1	5	8	

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Sample ID: 3-2	Recommendations:	Lime	Nutrients (lb/acre)									More
	Crop	(tons/acre)	N	P2O5	K2O	Mg	S	Mn	Zn	Cu	B	Information
Lime History:	1 - Soybean	0.0	0	0	100	25	0	pH$	0	0	0	Note: 3 Note: $
	2 - Small Grain (SG)	0.0	80-100	0	100	$	0	pH$	0	0	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.27	1.37	2.1	94	0.1	6.6	180	20	79	10	29	99	60	60	77	77	54	0.1	5	8	

Sample ID: 3-3	Recommendations:	Lime	Nutrients (lb/acre)									More
	Crop	(tons/acre)	N	P2O5	K2O	Mg	S	Mn	Zn	Cu	B	Information
Lime History:	1 - Soybean	0.0	0	0	100	0	0	pH$	0	0	0	Note: 3 Note: $
	2 - Small Grain (SG)	0.0	80-100	0	100	0	0	pH$	0	0	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.18	1.42	2.9	95	0.2	6.7	229	19	81	10	31	113	67	67	140	140	71	0.1	3	8	

Sample ID: 3-4	Recommendations:	Lime	Nutrients (lb/acre)									More
	Crop	(tons/acre)	N	P2O5	K2O	Mg	S	Mn	Zn	Cu	B	Information
Lime History:	1 - Soybean	0.0	0	0	120	25	25	0	0	0	0	Note: 3
	2 - Small Grain (SG)	0.0	80-100	0	120	$	25	0	0	0	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.09	1.41	1.3	76	0.3	5.9	100	13	56	15	24	81	59	59	30	30	41	0.1	8	8	

Sample ID: 3-5	Recommendations:	Lime	Nutrients (lb/acre)									More
	Crop	(tons/acre)	N	P2O5	K2O	Mg	S	Mn	Zn	Cu	B	Information
Lime History:	1 - Soybean	0.0	0	70	110	25	0	0	6	2	0	Note: 3
	2 - Small Grain (SG)	0.0	80-100	70	110	$	0	0	$	$	0	Note: 3 Note: $

Test Results [units - W/V in g/cm^3; CEC and Na in meq/100 cm^3; NO3-N in mg/dm^3]:   **Soil Class:** Mineral

HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	S-I	Mn-I	Mn-Al1	Mn-Al2	Zn-I	Zn-Al	Cu-I	Na	ESP	SS-I	NO3-N
0.04	1.45	1.2	74	0.3	5.3	30	15	51	16	45	34	30	30	13	13	20	0.1	8	7	

Understanding the Soil Report: explanation of measurements, abbreviations and units

Recommendations

Lime
If testing finds that soil pH is too low for the crop(s) indicated, a **lime recommendation** will be given in units of either ton/acre or lb/1000 sq ft. For best results, mix the lime into the top 6 to 8 inches of soil several months before planting. For no-till or established plantings where this is not possible, apply no more than 1 to 1.5 ton/acre (50 lb/1000 sq ft) at one time, even if the report recommends more. You can apply the rest in similar increments every six months until the full rate is applied. If MG is recommended and lime is needed, use dolomitric lime.

Fertilizer
Recommendations **for field crops or other large areas** are listed separately for each nutrient to be added (in units of lb/acre unless otherwise specified). Recommendations for N (and sometimes for B) are based on research/field studies for the crop being grown, not on soil test results. K-I and P-I values are based on test results and should be > 50. If they are not, follow the fertilizer recommendations given. If Mg is needed and no lime is recommended, 0-0-22 (11.5% Mg) is an excellent source; 175 to 250 lb per acre alone or in a fertilizer blend will usually satisfy crop needs, SS-I levels appear only on reports for greenhouse soil or problem samples.

Farmers and other commercial producers should pay special attention to **micronutrient levels**. If *$, pH$, $pH, C* or *Z* notations appear on the soil report, refer to *$Note: Secondary Nutrients and Micronutrients,* In general, homeowners do not need to be concerned about micronutrients. Various crop notes also address lime fertilizer needs; visit ncagr.gov/agronomi/pubs.htm.

Recommendations **for small areas, such as home lawns/gardens,** are listed in units of lb/1000 sq ft . If you cannot find the exact fertilizer grade recommended on the report, visit *www.ncagr.gov/agronomi/obpart4.htm#fs* to find information that may help you choose a comparable alternate. For more information, read *A Homeowner's Guide to Fertilizer.*

Test Results

The first seven values [soil class, HM%, W/V, CEC, BS%, Ac and pH] describe the soil and its degree of acidity. The remaining 16 [P-I, K-I, Ca%, Mg%, Mn-I, Mn-AI1, Mn-AI2, Zn-I, Zn-AI, Cu-I, S-I, SS-I, Na, ESP, SS-I, NO_3-N (not routinely available)] indicate levels of plant nutrients or other fertility measurement. Visit *www.ncagr.gov/agronomi/uyrst.htm*

Report Abbreviations

Ac	exchangeable acidity
B	boron
BS%	% CEC occupied by basic cations
Ca%	% CEC occupied by calcium
CEC	cation exchange capacity
Cu-I	copper index
ESP	exchangeable sodium percent
HM%	percent humic matter
K-I	potassium index
K2O	potash
Mg%	% CEC occupied by magnesium
MIN	mineral soil class
Mn	manganese
Mn-AI1	Mn-availability index for crop 1
Mn-AI2	Mn-availability index for crop 2
Mn-I	manganese index
M-O	mineral-organic soil class
N	nitrogen
Na	sodium
NO3-N	nitrate nitrogen
ORG	organic soil class
pH	current soil pH
P-I	phosphorus index
P2O5	phosphate
S-I	sulfur index
SS-I	soluble salt index
W/V	weight per volume
Zn-AI	zinc availability index
Zn-I	zinc index