Internal

Soil Report

Mehlich-3 Extraction

Links to Helpful Information

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

Sampled County : Sampson
Client ID: 403047

Advisor:

Advisor ID:

Sampled: 12/13/2019 Received: 01/28/2020 Completed: 02/07/2020 Farm: RESSTATION

Agronomist's Comments:

This report provides Test Results and Recommendations for each sample submitted for testing. Look for Lime Recommendations and N-P-K Fertilizer Recommendations. The lime recommendation is always listed next to the first crop and will be based on the higher target pH if the pH targets for crop 1 and crop 2 differ. Application at the indicated rate will raise soil pH to the optimal level for the plant you specified and should be sufficient for 2 to 3 years, depending on soil type. Common target pH values are as follows: 5.0 for azalea, camellia, rhododendron and mt. laurel; 5.5 for centipedegrass; 6.0 for other lawn grasses, shrubbery, and; flowering plants; and 6.5 for vegetable gardens. N-P-K Recommendations are based on the nitrogen (N) needs of the plants being grown and the soil test results for phosphorus (P-I) and potassium (K-I); a 50 to 70 index for either is optimum. If the exact fertilizer cannot be found, find the closest match and adjust the rate accordingly. Refer to "Understanding the Soil Report" (last page of this report) for additional explanation and links to helpful information.

Sample ID: K01

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Soybean	0.5	0	0	40	25	0	0	0	0	0	Note: 3
2 - Vegetables, other	0.0	80-100	0	100	$	0	0	0	0	0	Note: 6 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-AI1	Mn-AI2	Zn-I	Zn-AI	Cu-I	Na	ESP	SS-I	NO_3-N
0.27	1.40	2.5	60	1.0	5.3	176	54	39	10	32	78	57	57	71	71	77	0.1	4		

Sample ID: K02

Lime History:
0.30 tons/acre; 3/2019

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Soybean	0.0	0	0	20	0	0	0	0	0	0	Note: 3
2 - Radish	0.0	80-100	0	110	0	0	0	0	0	0.0	Note: 2

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-AI1	Mn-AI2	Zn-I	Zn-AI	Cu-I	Na	ESP	SS-I	NO_3-N
0.46	1.39	3.4	75	0.8	5.9	219	69	46	19	31	122	83	83	75	75	96	0.1	3		

Reprogramming of the laboratory-information-management system that makes this report possible is being funded through a grant from the North Carolina Tobacco Trust Fund Commission.

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

- *Steve Troxler, Commissioner of Agriculture*

Sample ID: K03

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Vegetables, other	0.3	80-100	0	80	0	25	0	0	0	0	Note: 6
2 - Soybean	0.0	0	0	20	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-AI1	Mn-AI2	Zn-I	Zn-AI	Cu-I	Na	ESP	SS-I	NO_3-N
0.27	1.35	2.8	72	0.8	5.7	179	64	43	17	24	83	60	60	70	70	62	0.1	4		

Sample ID: K10

Lime History: 0.30 tons/acre; 3/2019

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Vegetables, other	0.0	80-100	0	110	0	25	0	0	0	0	Note: 6
2 - Soybean	0.0	0	0	40	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-AI1	Mn-AI2	Zn-I	Zn-AI	Cu-I	Na	ESP	SS-I	NO_3-N
0.36	1.37	3.3	75	0.8	5.9	211	53	50	18	22	116	80	80	119	119	116	0.1	3		

Sample ID: K11

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Soybean	0.5	0	0	10	0	0	0	0	0	0	Note: 3
2 - Vegetables, other	0.0	80-100	0	60	0	0	0	0	0	0	Note: 6

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-AI1	Mn-AI2	Zn-I	Zn-AI	Cu-I	Na	ESP	SS-I	NO_3-N
0.56	1.34	3.5	67	1.2	5.5	232	78	41	15	29	141	95	95	102	102	134	0.1	3		

Sample ID: K12

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Vegetables, other	0.0	80-100	0	60	0	0	0	0	0	0	Note: 6
2 - Soybean	0.0	0	0	10	0	0	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-AI1	Mn-AI2	Zn-I	Zn-AI	Cu-I	Na	ESP	SS-I	NO_3-N
0.46	1.29	3.4	74	0.9	5.8	187	75	45	17	30	120	82	82	83	83	111	0.1	3		

Sample ID: K20

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Vegetables, other	0.0	80-100	20	50	0	0	0	0	0	0	Note: 6
2 - Sweetpotato	0.0	60-90	0	0	0	0	0	0	0	0.0	Note: 6

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-AI1	Mn-AI2	Zn-I	Zn-AI	Cu-I	Na	ESP	SS-I	NO_3-N
0.13	1.34	3.2	75	0.8	5.8	104	85	42	20	31	60	46	53	39	39	68	0.1	3		

Sample ID: K21

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Vegetables, other	0.0	80-100	0	0	0	0	0	0	0	0	Note: 6
2 - Sweetpotato	0.0	60-90	0	0	0	0	0	0	0	0.0	Note: 6

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-AI1	Mn-AI2	Zn-I	Zn-AI	Cu-I	Na	ESP	SS-I	NO_3-N
0.22	1.37	3.8	84	0.6	6.4	131	147	45	20	31	87	56	63	60	60	61	0.1	3		

Sample ID: N02

Lime History:

Recommendations: Crop	Lime (lb/1000 sq ft)	Nutrients (lb/1000 sq ft) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Flower garden	0.0									0	Note: 4
2 -	0.0										

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-AI1	Mn-AI2	Zn-I	Zn-AI	Cu-I	Na	ESP	SS-I	NO_3-N
0.04	1.24	4.2	82	0.8	6.0	20	102	42	27	83	45			18	18	45	0.1	2		

Sample ID: F05

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Soybean	0.3	0	0	70	25	25	0	0	0	0	Note: 3
2 - Vegetables, other	0.0	80-100	0	150	$	25	0	0	0	0	Note: 6 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-AI1	Mn-AI2	Zn-I	Zn-AI	Cu-I	Na	ESP	SS-I	NO_3-N
0.18	1.55	1.9	66	0.6	5.6	150	36	44	13	17	108	75	75	65	65	55	0.1	5		

Sample ID: F06

Lime History:

Recommendations: Crop	Lime (tons/acre)	Nutrients (lb/acre) N	P_2O_5	K_2O	Mg	S	Mn	Zn	Cu	B	More Information
1 - Sweetpotato	0.0	60-90	0	110	0	25	0	0	0	0.5	Note: 6
2 - Soybean	0.0	0	0	70	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
0.13	1.55	2.1	75	0.5	6.0	128	35	50	17	16	72	60	53	135	135	58	0.1	5		

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
K_2O	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
NO_3-N	nitrate nitrogen
ORG	organic soil class
pH	current soil pH
P-I	phosphorus index
P_2O_5	phosphate
S-I	sulfur index
SS-I	soluble salt index
W/V	weight per volume
Zn-AI	zinc availability index
Zn-I	zinc index