

SOIL: Defining the Terms



Terms

- Colloid – A very tiny particle that has a charged surface that attracts Cations.
- Cation – An ion with a positive charge.
- Anion – An ion with a negative charge.
- CEC – A measure of the soil's ability to hold nutrients that are cations.
- Base Saturation Percent – Percentage of the CEC occupied by cations other than Hydrogen and Aluminum.
- pH – Measure of the acidity or alkalinity of a soil based on Hydrogen ion concentration.
- Adsorption – Bonding of an ion or compound to a solid surface.
- Humus – Stable residue of organic matter decomposition.
- Organic Matter – Material of plant or animal origin that decays in the soil to form humus.

3/1/15

SOIL RECOMMENDATION

Location/ Farm: Johnson, D / **Red Bud**
 Field/ Sample: Garden / 012915
 Crop: Vegetables
 Total Exchange Capacity: 14.47
 pH of Soil Sample: 6.50
 Humus Content, Percent: 2.60
 Desired Ca : Mg Percent: 68 : 12
BASE SATURATION PERCENT:
 CALCIUM (60-70%): 67.15
 MAGNESIUM (10-20%): 12.84
 POTASSIUM (2-7.5%): 7.01
 SODIUM (0.5-3%): 0.60
 OTHER BASES (Variable): 4.90
 EXCHANGEABLE HYDROGEN (10-15%): 7.50

ALL RECOMMENDATIONS ARE PER 3000 SQ. FT. BROADCAST

ANIONS	NITROGEN-N (lb./acre)	ENR Value	72	Apply 11% lb. of Feather Meal (60 lb. N).
		SULFUR-S (lb./acre)	Desired Value	100
		Value Found	20	
		Deficit/Surplus	-80	
	PHOSPHORUS-P (lb./acre)	Desired Value	330	Apply 5 lb. 12 oz. of MAP 11-52-0 (28 lb. N)(57 lb. P).
		Value Found	136	Also apply 11% lb. of Soft Rock Phosphate (44 lb. P)(100 lb. Ca).
		Deficit/Surplus	-192	
CATIONS	CALCIUM-Ca (lb./acre)	Desired Value	3936	Supplied by Soft Rock Phosphate above.
		Value Found	3888	
		Deficit/Surplus	-48	
	MAGNESIUM-Mg (lb./acre)	Desired Value	417	Wait.
		Value Found	446	
		Deficit/Surplus	+29	
	POTASSIUM-K (lb./acre)	Desired Value	846	Apply 2 lb. 14 oz. of Potassium Sulfate 0-0-50 (52 lb. K)(22 lb. S).
		Value Found	791	
		Deficit/Surplus	-55	
	SODIUM-Na (lb./acre)	Desired Value	67	Apply 2 lb. 5 oz. of Sea-90 Sea Minerals.
		Value Found	40	
		Deficit/Surplus	-27	
MICROS/TRACES	BORON-B (ppm)	Desired Value	1.75	Apply 7% oz. of 10% Boron (2 lb. B). This is the most that should be applied at one time.
		Value Found	0.99	
		Deficit/Surplus	-0.76	
	IRON-Fe (ppm)	Desired Value	300	OK for this year.
		Value Found	291	
		Deficit/Surplus	-9	
	MANGANESE-Mn (ppm)	Desired Value	200	OK for this year.
		Value Found	197	
		Deficit/Surplus	-3	
	COPPER-Cu (ppm)	Desired Value	10	Apply 5% oz. of 25% Copper Sulfate (3.75 lb. Cu).
		Value Found	4.10	
		Deficit/Surplus	-5.90	
	ZINC-Zn (ppm)	Desired Value	12	None.
		Value Found	17	
		Deficit/Surplus	+5	
	COBALT-Co (ppm)	Desired Value	1	Apply 0.4 oz. 33-34% Cobalt Sulfate (0.3 lb. Co)
		Value Found	0.76	
		Deficit/Surplus	-0.24	
	MOLYBDENUM-Mo (ppm)	Desired Value	1	OK.
		Value Found	1.30	
		Deficit/Surplus	+0.30	

Insoluble but available



Review / Q&A



