

Soil Test	Extractant	Conditions	Analysis	Reference
<b><i>Routine Soil Test</i></b>				
Phosphorus, Potassium, Calcium, Magnesium, Sodium, Sulfur, Copper, Zinc	Mehlich 3	2 g soil / 20 mL solution, 5 min. shaking. (3.75 M NH <sub>4</sub> F – 0.25 M EDTA NH <sub>4</sub> NO <sub>3</sub> , CH <sub>3</sub> COOH, and HNO <sub>3</sub> )	ICP	Mehlich, 1984
pH	Water	10 g soil / 10 mL deionized H <sub>2</sub> O 2 hr. equilibration	pH meter + electrode	McLean, 1982
Lime requirement	Titration with Ca(OH) <sub>2</sub> equivalent to lime rates of 1, 2, and 3 T/A	10 g soil / 25 mL deionized H <sub>2</sub> O + 2.5 mL sat. Ca(OH) <sub>2</sub> solution for each T/A lime, 15 min shaking every 3 hr. for 16 hr.	pH meter + electrode	McLean, 1982
Sulfur requirement	Titration with H <sub>2</sub> SO <sub>4</sub> equivalent to lime rates of 1, 2, and 3 1000 lbs./A	10 g soil / 25 mL deionized H <sub>2</sub> O + 3.125 mL 0.1N H <sub>2</sub> SO <sub>4</sub> for each 1000 lbs./A lime, 15 min shaking every 3 hr. for 16 hr.	pH meter + electrode	
Texture	Determined by hand			

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<b><i>Optional Soil Test</i></b>				
Organic Matter	Acid-dichromate oxidation	1 g soil / 10 mL 1 N K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub> + 20 mL conc. H <sub>2</sub> SO <sub>4</sub> (wait 2 hours) + 90 mL H <sub>2</sub> O, 16 hr. equilibration	Dip-Probe colorimeter	Nelson and Sommer, 1982
Soluble salts	Water	20 g soil / 40 mL deionized H <sub>2</sub> O 30 min shaking, 16 hr. equilibration	Conductivity	Rhoades, 1982
<u>Flood</u> (Soluble salts, Chloride, Magnesium, Sodium, Sulfur, SAR)	Water	20 g soil / 40 mL deionized H <sub>2</sub> O 30 min shaking, 16 hr. equilibration  <i>Filter 20 g/ 40 mL solution</i>	Conductivity  <i>ICP</i>	Rhoades, 1982
Boron	Hot water	10 g soil / 20 mL deionized H <sub>2</sub> O 15 min reflux @ 100° C	ICP	Bingham, 1982
Manganese, Iron, Copper, Zinc	DTPA	10 g soil / 20 mL pH 7.3, 0.005 M DTPA, 2 hr. shaking	ICP	Baker and Amacher, 1982
Aluminum	BaCl <sub>2</sub> / NH <sub>4</sub> Cl	2 g soil / 20 mL 0.1 M BaCl <sub>2</sub> / NH <sub>4</sub> Cl, 15 min shaking	ICP	Barnhisel and Bertsch, 1982
Nitrogen		0.25 g soil	LECO CN Analyzer	Dumas Dry-Combustion
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