

SOIL ANALYSIS

FEE
Recommendations
With Without

BASIC SOIL TEST PACKAGES (USING MEHLICH 3 EXTRACTION SOLUTION):

Basic (S1M): Organic Matter, Estimated Nitrogen Release, Available Phosphorus, Exchangeable, Potassium, Magnesium, Calcium and Hydrogen, Soil pH, Buffer Index, Cation Exchange, Capacity and Percent Base Saturation of Cation Elements	10.00	8.50
Advance (S2M): Test S1M plus two of: Sulfur, Zinc, Manganese, Iron, Copper, Sodium, or Boron	12.50	11.00
Complete (S3M): Test S1 plus Sulfur, Sodium, Zinc, Manganese, Iron, Copper and Boron	14.40	12.80
Basic Northeastern (S1NE): Same as S1M but replacing Mehlich 3 Phosphorus with Modified Morgan-P & Al to meet NE nutrient management program	N/A	9.40
Complete Northeastern (S3NE): Test S3 but replacing Mehlich 3 Phosphorus with Modified Morgan-P & Al to meet NE nutrient management program	N/A	15.20

INDIVIDUAL EXTRACTABLE NUTRIENT ANALYSIS (WITH ANY BASIC TEST PACKAGE)

Aluminum, Boron, Copper, Iron, Manganese, Sodium, Sulfur, Zinc, (per element)	1.10	1.00
Soluble Salts		3.00

SOIL TEST PACKAGE (USING BRAY for P, AMMONIUM ACETATE for Cations & 0.1N HCl for Trace Nutrients)

SA1: Same as S1 plus Strong and Weak Bray Phosphorus and Ammonium Acetate for Cations	12.00	10.50
SA2: Test SA1 plus Soluble Salts and Sodium	14.50	12.80
SA3: Sulfur, Zinc, Manganese, Iron, Copper and Boron	16.30	15.00

INDIVIDUAL EXTRACTABLE NUTRIENT ANALYSIS

(WITH ANY BASIC TEST PACKAGE USING NON-MEHLICH 3 METHODS, WITHOUT PACKAGE HAS A MINIMUM CHARGE OF \$5.00)

Sodium, Soluble Salts, Zinc, Manganese, Iron, Sulfur Copper, Boron		
Each above element	5.80	5.00
Aluminum (Exchangeable)	12.00	11.00
Phosphorus (Bray or Morgan)	5.80	5.00

OTHER INDIVIDUAL ANALYSES:

(For Heavy Metal Analysis see Environmental Analysis)

Ammonia Nitrogen	13.80
Carbon to Nitrogen (C/N) Ratio	45.00
Conductivity (soluble salts)	5.80
Chloride	13.80
Moisture (oven dried at 103°C)	13.80
Molybdenum (available)	15.00
Nitrate Nitrogen	10.00
Nitrite Nitrogen	16.00
Organic Matter by Combustion	9.50
Organic Matter by Colorimeter	5.90
pH	5.80
pH and Buffer pH	6.40
Resistivity (by Saturated Past)	30.00
Silicon or Titanium (Fusion at 1050°C)	60.00
Total Cation Exchange Capacity by Sodium Saturation at pH 7.0	40.00
Total Organic Carbon by Combustion	17.00
Total Kjeldahl Nitrogen	23.00

SOIL PHYSICAL MEASUREMENTS:

Available Moisture (1/3 + 15-Bar Limits measured with pressure Membrane apparatus)	40.00
Additional pressure limits (each)	28.00
Bulk density (disturbed soil)	12.00
Particle-sized analysis (Texture) by hydrometer (% sand, % silt, % clay)	22.00
Sieve Analysis (any one sieve size)	10.00

BASIC POTTING MEDIA TEST PACKAGES:

(For greenhouse mixes with less than 50% mineral soil. Using DTPA saturated extract method)

S8: Conductivity, pH, Ammonium and Nitrate Nitrogen, Phosphorus, Potassium, Magnesium, Calcium, Sulfur, and Sodium	30.00	27.00
S8A: S8A plus Aluminum, Manganese, Iron, Copper, Zinc, and Boron	40.00	37.00

PLANT ANALYSIS

BASIC PLANT TEST PACKAGES: FEE RECOMMENDATIONS

With Without

PT1: Sulfur, Phosphorus, Potassium, Magnesium, Calcium, Sodium, Iron, Aluminum, Manganese, Boron, Copper and Zinc ...NA 17.00

PT2: All Elements in PT1 plus Nitrogen26.20 24.00

(Research volume discount on request, with Excel and paperless report only)

PT503: EPA 503 metals (Arsenic Copper, Cadmium, Chromium, Lead, Mercury, Molybdenum, Nickel, Selenium, Zinc) on plant tissue 238.00

FEED ANALYSIS

BASIC FEED TEST PACKAGES: FEE

F2A: Moisture, Crude Protein, Acid Detergent Fiber, Calculated TDN and Net Energy 22.00

F2B: Same as Basic Test F2A plus Available Protein (Crude Protein - ADF Protein) 32.00

F3: (Not for Mineral Supplements) Moisture, Sulfur, Phosphorus, Potassium, Magnesium, Calcium, Sodium, Iron, Aluminum, Manganese, Copper and Zinc ... 20.00

F4: Moisture and Crude Protein 18.00

F5: Moisture, Crude Protein, Calcium and Phosphorus 26.00

F6: Moisture, Crude Protein, Acid Detergent Fiber, Calculated TDN, Net Energy, Calcium, Phosphorus, Potassium, Magnesium and Sulfur .. 32.00

F7: Moisture, Crude Protein, Acid Detergent Fiber, Calculated TDN, and Net Energy, Calcium and Phosphorus 31.00

F8: Moisture, Crude Protein, Crude Fat, and Crude Fiber (suggested for grain samples) 32.00

F12: Moisture, Protein, Fat, Ash, Calcium and Phosphorus 41.50

F15: Moisture, Protein, Fat, Fiber, Calcium and Phosphorus, Salt (Sodium based) 41.50

Livestock Hair Analysis

Same as Basic Test F3 20.00

INDIVIDUAL PLANT AND FEED ANALYSES:

Phosphorus, Potassium, Sulfur, Calcium, Magnesium, Sodium, Iron, Aluminum, Manganese, Boron, Copper, Zinc (Grain or Forage, not for Minerals & Supplements)

Sample Digestion 10.00
Each Element Above 5.00

Cadmium, Chromium, Cobalt, Lead, Molybdenum And Nickel by ICP Emission

Sample Digestion 15.00
Each Element 15.00

Acid Detergent Insoluble Protein (unavailable) ... 18.00

Available Protein (calculated from unavailable) 18.00

Ammonia 12.80

Arsenic 35.00

Ash 17.00

Chloride 15.00

Fat (Ether Extraction) 15.00

Fiber (Crude or Acid Detergent) 10.00

Moisture (Oven 110 C) 6.00

Mercury 48.00

Nitrate 12.00

Nitrogen 14.00

Non-Protein Nitrogen 20.00

pH 6.00

Protein (Crude) 14.00

Salt (from Sodium Content) 13.00

Salt (from Soluble Chloride) 13.00

Selenium 35.00

Urea 20.00

Urease Activity 30.00

MINERAL SUPPLEMENTS & PREMIXES:

See Fertilizer Analysis Next Page

FERTILIZER, MINERAL AND LIME ANALYSIS

FEE

SAMPLE PREPARATION:

Dry Fertilizer or Lime 6.00

BASIC FERTILIZER TEST PACKAGES:

FT1: Total Nitrogen (N), Available or Total Phosphorus (P₂O₅), and Soluble Potash (K₂O) 61.00

FT2: Total Nitrogen (N) and Soluble Potash (K₂O) 41.00

FT3: Total Nitrogen (N) and Available or Total Phosphorus (P₂O₅) 41.00

FT4: Available or Total Phosphorus (P₂O₅), and Soluble Potash (K₂O) 41.00

FTTE: Boron, Calcium, Copper, Iron, Magnesium, Manganese, Sodium, Sulfur and Zinc ... 95.00

LIMESTONE MATERIAL TEST PACKAGES:

L1: Calcium, Magnesium, and Total Neutralizing Value 62.00

L2: Calcium, Magnesium, and Effective Neutralizing Value (2 Sieves) 68.00

L3: Calcium, Magnesium, and Effective Neutralizing Value (3 Sieves) 76.00

Total Neutralizing Value (CaCO₃ equivalent) 19.50

Effective Neutralizing Value
Total Neutralizing Value plus 2 Sieves 37.50
Total Neutralizing Value plus 3 Sieves 46.50

Sieve Analysis (Specify Sizes Desired)
Each Screen Size 9.00
Moisture 13.80

ELEMENTAL ANALYSIS: (Total or Water Soluble) Aluminum, Boron, Calcium, Copper, Iron, Magnesium, Manganese, Molybdenum, Sodium, Sulfur and Zinc

Digestion Charge 16.20
Each additional 13.00

Heavy Metals using EPA SW846 procedures see next page in **Environmental Analysis**.

INDIVIDUAL ANALYSIS:

Chloride	19.20
Free Acid	17.00
Free Ammonia	17.00
Lost on Ignition (or Ash)	17.00
Moisture	13.80
Nitrogen: Ammonia	20.00
Nitrate	24.00
Total	24.00
Urea	25.00
Water Soluble	26.80
Water Insoluble	26.80
pH	8.00
Phosphate: Available (Citrate Sol)	26.00
Ortho	26.00
Poly (Non-Ortho only)	26.00
Total	26.00
Water Soluble	26.00
Potash (Fertilizer)	26.00
(Green Sand)	50.00
Salt Index	15.50
Silicon	55.00
Specific Gravity	15.00
Total or Sulfate Sulfur (by gravimetric)	44.00
Urease Activity	35.00

MANURE ANALYSIS

WARNING; DO NOT SHIP MANURE SAMPLES IN GLASS

BASIC MANURE TEST PACKAGES: FEE

M1: Moisture, Total Kjeldahl Nitrogen, Ammonium Nitrogen, Phosphorus And Potassium 40.00

M2: Basic Test M1 plus Sulfur, Calcium, Magnesium, Sodium, Iron, Aluminum, Manganese, Copper Boron and Zinc 55.00

INDIVIDUAL ANALYSIS:

Phosphorus, Potassium, Sulfur, Calcium, Magnesium, Boron, Sodium, iron, Aluminum, Manganese, Copper & Zinc	
Digestion Charge	15.00
Each Element	12.00
Moisture (110 C)	14.00
Nitrogen – Ammonia	18.00
Nitrate	18.00
Total (TKN)	21.00
Organic Matter (by combustion)	15.00
pH	7.00

AGRICULTURAL WATER ANALYSIS

BASIC WATER ANALYSIS PACKAGES FEE

W1: (Livestock Suitability) Sodium, Calcium, Magnesium, Chloride, Conductivity, Total Dissolved Solids, Sulfate, Nitrate and pH 50.00

W2: (Irrigation Suitability) Sodium, Calcium, Magnesium, Chloride, Conductivity, Sulfate, Nitrate, pH, Carbonate, Bicarbonate, Phosphorus, Potassium, Boron, Total Dissolved Solids and SAR 70.00

SPRAY WATER SUITABILITY: pH and Acid Required To Adjust pH to 6.0 40.00

For individual analysis see Environmental Analysis Section

ENVIRONMENTAL ANALYSIS

Biosolid/Soil/Sludge/Compost/Wastewater/

BASIC TEST PACKAGES; FEE

SL1: Total Solids, Total Kjeldahl Nitrogen, Phosphorus and Potassium 57.75

SL2: Basic Test SL1 plus Sulfur, Calcium, Magnesium, Sodium, Iron, Aluminum, Manganese, Copper and Zinc 79.80

INDIVIDUAL ANALYSIS:

Phosphorus, Potassium, Sulfur, Calcium, Magnesium, Sodium, Iron, Aluminum, Manganese, Copper, Zinc, Antimony, Beryllium, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Nickel, Silver and Tin by ICP Emission (EPA SW846-6010B)

Digestion Charge (EPA SW846-3050) 15.75
Each Element Above 15.75

Acidity (Total) 16.80
Alkalinity (Total) 16.80
Arsenic 36.75
Ash 15.75
Boron 15.75
CaCO₃ Equivalency (lime treated biosolid only) ... 21.00
Carbon to Nitrogen (C/N) Ratio 42.00

Chloride	17.85
Conductance (Specific)	13.65
Hardness	21.00
Hexavalent Chromium	36.75
Mercury	50.40
Moisture	15.75
Nitrogen – Ammonia	21.00
Nitrate (NO ₃ + NO ₂)	21.00
Nitrite (NO ₂ only)	21.00
Total (TKN)	24.15
Oil and Grease(ether extraction)	30.45
Organic Matter (by combustion)	18.90
Paint Filter Test	23.10
pH	15.75
Phosphorus (Available, Citrate Sol)	27.30
Salt Index	17.85
Selenium	36.75
Solids – Dissolved	17.85
Suspended	17.85
Total	17.85
Volatile	17.85
Sulfate (Turbimetric)	27.30

A BRIEF HISTORY OF A&L EASTERN LABORATORIES

In 1971, Don Ankerman and Dr. Richard Large founded A & L Laboratories in Memphis, Tennessee to serve the analytical needs of agricultural clients. It was their commitment to provide quality analytical services that resulted in an expansion that today includes eight regional laboratories serving the analytical needs of agriculture and industry across the USA and in Canada and Mexico.

In 1977 “A & L Eastern” was established in Richmond, Virginia to better serve the Atlantic Coast and the New England States. As growth continued and services expanded, we enlarged our facility in 1994. The commitment of providing prompt, quality analytical services combined with a quality assurance program, well trained staff, and state of the art instrumentations will bring to you, our client, the very best in analytical services.