



Association of
American Plant
Food Control
Officials

Magruder Certificate of Analysis

Magruder Sample #180311 Grade 3-1-2

Analyte	Value	± Standard Uncertainty	# Labs
Total Nitrogen (3%)	3.071	0.019	75
Total Phosphorus as P ₂ O ₅ (%)	3.515	0.097	48
Direct Available Phosphorus as P ₂ O ₅ (1%)	3.315	0.105	39
Soluble Potassium as K ₂ O (2%)	3.669	0.036	80
Acid Soluble Magnesium (%)	0.3793	0.0111	19
Acid Soluble Cadmium (ppm)	3.513	0.129	22
Acid Soluble Chromium (ppm)	22.81	1.45	23
Acid Soluble Copper (%)	0.00070	0.00010	21
Acid Soluble Iron (%)	0.03620	0.00260	19
Acid Soluble Molybdenum (ppm)	1.330	0.091	18
Acid Soluble Nickel (ppm)	6.924	0.349	24
Acid Soluble Zinc (%)	0.00830	0.00040	33

1. Data obtained from participant results in the Magruder Check Sample Program.
2. Guaranteed concentrations noted by the value preceding the unit in Analyte name.
3. Values are robust means. Standard uncertainty determined as $1.25 \times \text{robust standard deviation} / \sqrt{\text{\#Labs}}$. Results only shown for analytes tested by 16 or more labs. Values and uncertainties for analytes tested by less than 16 labs are available in Analyte Reports.
4. Technical information on Certificate of Analysis available at www.magruderchecksample.org/prod/Articles.html