



Association of
American Plant
Food Control
Officials

Magruder Certificate of Analysis

Magruder Sample #200311 Grade 18-24-6 Starter

Analyte	Value	± Standard Uncertainty	# Labs
Ammoniacal N (%)	9.136	0.116	33
Urea N (%)	8.479	0.079	20
Total N (18%)	17.53	0.04	77
Total P2O5 (%)	23.48	0.12	42
Direct Available P2O5 (24%)	23.60	0.1	44
Soluble K2O (6%)	6.199	0.043	78
Acid Soluble Mg (%)	3.088	0.103	18
Acid Soluble Cd (ppm)	1.528	0.078	16
Acid Soluble Cr (ppm)	72.25	4.16	17
Acid Soluble Fe (%)	0.5325	0.0161	19
Acid Soluble Mn (%)	0.01695	0.00082	16
Acid Soluble Mo (ppm)	7.572	0.646	16
Acid Soluble Ni (ppm)	24.79	1.47	18
Acid Soluble Zn (%)	0.0070	0.00063	24

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