



Association of  
American Plant  
Food Control  
Officials

# Magruder Certificate of Analysis

## Magruder Sample #191211 Grade 8-4-6 Liquid

Analyte	Value	± Standard Uncertainty	# Labs
Ammoniacal N (%)	1.031	0.058	35
Urea N (%)	7.246	0.127	19
Total N (8%)	8.988	0.053	80
Total P2O5 (%)	4.024	0.027	50
Direct Available P2O5 (4%)	4.012	0.022	48
Soluble K2O (6%)	6.157	0.033	87
Acid Soluble Cr (ppm)	3.502	0.699	17
Acid Soluble Cu (0.2%)	0.2062	0.0023	62
Acid Soluble Mn (1%)	1.059	0.011	61
Acid Soluble Ni (ppm)	1.427	0.289	17
Acid Soluble Zn (1%)	1.027	0.011	63

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](http://www.magruderchecksample.org/prod/Articles.html)