

*The Determination of Calcium, Cobalt, Copper, Iron, Potassium, Magnesium, Manganese, Molybdenum, Sodium, Phosphorus, Sulfur and Zinc in Animal Feed and Pet Food by Microwave Digestion and ICP-OES.*

A method was developed and validated for the determination of calcium (Ca), cobalt (Co), copper (Cu), iron (Fe), potassium (K), magnesium (Mg), manganese (Mn), molybdenum (Mo), sodium (Na), phosphorus (P), sulfur (S) and zinc (Zn) in animal feed and pet food by inductively coupled plasma/optical emission spectroscopy (ICP-OES) following closed vessel microwave digestion. Twelve test materials chosen to represent a wide range of animal feeds and pet foods were used for method development and validation. Various digestion procedures and spectral emission lines were evaluated and optimized based on recovery of each element in the twelve materials. Average spike recoveries for each element from milk replacer and corn silage were: Ca, 103; Co, 95.7; Cu, 95.9; Fe, 91.1; K, 99.5; Mg, 99.7; Mo, 101; Na, 97.4; P, 106; S, 101; and Zn, 111.

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