

Advice Sheet 49: Method Details

Soil Tests

Soil samples are air dried <30°C overnight. Stones and fibrous material from roots etc are excluded and the soil ground to 2mm. For some tests a sub-sample will be finely ground to 0.5mm.

Parameter	Reporting limit (units)	Method Summary	Sample Prep	UKAS option available
pH	N/A	The pH is determined potentiometrically in a 1:2.5 water extraction ratio	2mm grind	Y
Available Phosphorus	2.5 mg/l	Available phosphorus is extracted from the soil with 0.5M Sodium Bicarbonate (Olsens Reagent) at a 1:20 ratio and determined colorimetrically	2mm grind	Y
Available Potassium	15.0 mg/l	Available Potassium and Magnesium are extracted from the soil with 1M Ammonium Nitrate solution at a 1:5 ratio and determined by Flame Photometry or ICP-OES.	2mm grind	Y
Available Magnesium	5.0 mg/l		2mm grind	Y
Organic Matter	0.5%	The sample is combusted 430°C and the loss in weight of the sample is reported as the organic matter content.	2mm grind	Y
Soil texture (Laser)	1%	The particle size distribution of a suspension of the soil sample is determined by Laser diffraction. The textural class is then calculated following the UK classification system.	2mm grind	N
Arsenic	3.0 mg/kg	Total' elements are extracted from the sample by digestion with concentration acids (aqua regia) on a hot block and determined by ICP-OES analysis (AFS for Selenium).	0.5mm grind	Y
Cadmium	0.1 mg/kg			Y
Chromium	10.0 mg/kg			Y
Copper	1.0 mg/kg			Y
Mercury	0.20 mg/kg			Y
Molybdenum	1.0 mg/kg			Y
Nickel	10.0 mg/kg			Y
Lead	5.0 mg/kg			Y
Zinc	10.0 mg/kg			Y
Selenium	0.03 mg/kg			Y
Fluoride	1.0 mg/kg	Fluoride is extracted from the sample with dilute sulphuric acid and determined by Ion Selective Electrode	0.5mm grind	Y
Available Sodium	2.0 mg/l	Available Sodium and Calcium are extracted from the soil with 1M Ammonium Nitrate solution at a 1:5 ratio and determined by Flame Photometry or ICP-OES.	2mm grind	N
Available Calcium	50 mg/l		2mm grind	N