

Analytical Chemistry Services

Our standard services include extraction and digestion procedures as well as instrumental analysis.

If you don't find what you are looking for in the list below, please contact us to discuss your requirements.

Extraction and Digestion Sample Preparation

- Harpenden Laboratory

Determination	Material	Procedure
Total major and trace elements	Plant	Nitric perchloric Digestion
Total major and trace elements	Plant/Soil	Microwave Digestion
Total major and trace elements	Soil	Aqua regia Digestion
Available K, Ca, Mg, Na	Soil	Ammonium Nitrate Extraction
Available P (Olsen)	Soil	Sodium Bicarbonate Extraction
Amorphous and Organically bound Al and Fe	Soil	Ammonium Oxalate Extraction
Water soluble chloride	Plant	Cold water extraction
Available (mineral) N	Soil	Potassium Chloride Extraction
Total N	Farmyard manure	Kjeldahl Digestion

Other extraction methods are available

Measurements and Analyses

- Harpenden Laboratory

Determination	Material	Instrument
Major and trace elements P K Ca Mg Na S + Fe Al Ti Zn Cu Ni Cd Cr Pb Mo Co Mn	Environmental waters Soil/plant extracts and digests	ICP-OES
Trace metals As and Se speciation	*research based	ICP-MS LC-ICP-MS
NO ₃ -N, NO ₂ -N, NH ₄ -N, PO ₄ -P, Cl, Total soluble N, Olsen P	Waters, soil/plant extracts (KCl, K ₂ SO ₄ , H ₂ O, CaCl ₂)	Continuous Flow Analyser
Total N, Total C	Soil/Plant material	Combustion Analyser
Total Organic Carbon (NPOC) Inorganic Carbon	Water, soil extracts (K ₂ SO ₄) Soil	UV Oxidation TOC analyser Inorganic carbon analyser
¹⁵ N, %N, ¹³ C, %C	Soil fractions/plant material	IRMS
pH	Waters, soil	pH meter

- North Wyke Laboratory

Determination	Material	Instrument
NO ₃ -N, NO ₂ -N, NH ₄ -N, PO ₄ -P Cl, TON, Olsen P, Total P SO ₄ -S, Br, CaCO ₃ (alkalinity)	Waters, soil extracts (KCl, K ₂ SO ₄ , Olsen P)	Discrete photometric analyser
Total N/Total C, IC, OC, NPOC	Waters, soil extracts	High temperature TOC/TN analyser

Lipid, lignin, carbohydrates, amino compounds	Soil, water, plant material	GC-MS and (Py)-GC-MS
Total N, total C, bulk ¹⁵ N, ¹³ C ¹³ C (compound specific) ¹⁵ N in N ₂ O/N ₂ , ¹³ C in CO ₂ N ₂ O, CH ₄ , CO ₂	Soil and plant material " Gaseous samples "	EA with IRMS GC-C-IRMS IRMS GC
Total Se	Water, soil, biological material	HPLC-HG-AFS
Crude Protein Fibre (MADF, ADF, ADL, NDF) Ash, organic matter	Grass, forage Grass, forage Soil, grass, forage	EA with IRMS Fibertec Muffle furnace (ignition)
pH	Water, soil	pH meter
Suspended solids, ash, volatile suspended matter	Water	vacuum filtration + muffle furnace