

NAWA (Nutrient and Water Analysis) Research Laboratory

Situated in 621 Heep Center is currently undergoing refurbishment.

FACILITIES

The Laboratory has 4 rooms. One will be set up as an analytical lab for the analysis of soil solution and

Freshwater samples. The smaller lab will be set up for soil processing and extractions. A large storage room will contain soil samples and our chemical inventory and a smaller room will eventually be dedicated to GIS and statistical analysis.

The Department of Crop and Soil Science has desk space and some offices for graduate students

Analytical Capabilities: We expect to perform the following analyses on a routine basis: Total Organic Carbon (TOC), Non-Purgeable Organic Carbon (NPOC or DOC), Total Dissolved Nitrogen (TDN), Nitrate (NO_3^-), Ammonium (NH_4^+), Orthophosphate (PO_4^{3-}), Silica (SiO_2), Anions (Cl^- , NO_3^- and SO_4^-), Cations (Na^+ , K^+ , Mg^{2+} , and Ca^{2+}), BOD_5 , Amino acids and Proteins, Carbon dioxide (CO_2 -C) evolution from soils.



Shimadzu TOC-V with Nitrogen detector:

Total organic carbon (TOC), non-purgeable organic carbon (NPOC), inorganic carbon (IC), total nitrogen (TN).



Licor 7000: Measurement of incubated soil respiration



Smartchem Discrete Analyzer:
Fast sample turnover and small (2 mL sample size) Ammonium (NH_4) Nitrate (NO_3) nitrite (NO_2) phosphate (PO_4) and silica (SiO_2)



Dionix Ion Chromatograph ICS 2000 Dedicated design, RFIC system with electrolytic suppression, LCD panel, and column heating: Anions, Cations and Organic acids



Agrispec NIR spectrophotometer:
SOILS: organic carbon, total nitrogen,

cation exchange capacity, sand fraction, silt fraction, clay fraction, copper, zinc, chromium, nickel, cadmium, and manganese. FOLIAGE: lignin, cellulose, soluble sugars and nitrogen.

WATER: Method development for analysis of C and N fractions in freshwater samples.



Beckman 640 UV-Vis spectrophotometer Protein and nucleic acid analysis

Other 'necessities'

Ultra-pure water (UV polished),
Hoods, Incubator, Drying oven,
Mechanical soil splitter, YSI DO
meters, pH and conductivity meters,
tritrators, water bath, analytical and
flat scales, shaker table.....

Methods and Protocols

These will be available on this site
once developed.

QA/QC

Quality Control is a very important
aspect of our research.