



Bespoke facilities supporting analytical needs and interacting with the Aberystwyth University Well-being and Health Assessment Research Unit (WARU) for food intervention studies.



Advanced compositional testing in bioprospecting, biorefining and fermentation process support:

- **Chemical content analysis** – Including minerals, sugars, organic acids, alcohols, lipids, lipid oxidation status, pro-oxidative and anti-oxidative capacities.
- **Comprehensive profiling and structural elucidation** – Analysis of metabolites in bio-extracts using ultra high-resolution LC and GC mass spectrometry.
- **Triple Quadrupole mass spectrometry** – Targeted quantification of secondary metabolites in complex mixtures.
- **UPLC and GC** – Analysis and quantification of sugars, organic acids and alcohols.

Food quality and composition:

- **Analytical capability to determine food composition** – Standard and bespoke tests (e.g. vitamins, essential fatty acids, nutraceuticals, micronutrients, chemical determinants of flavour and colour development) for process quality control on dedicated instruments.
- **Food bioactives discovery and validation** – Comprehensive profiling of foods for discovery and validation of (lipidomics and metabolomics) dietary exposure biomarkers and bioactive functional compounds.
- **Comprehensive lipid and fatty acid profiling** – Dedicated laboratory for analysis of fat-soluble components, lipid fractions, fatty oxidation products and vitamins.

Food functionality and health claims:

- **UHPLC and GC Laboratories** – Targeted analysis supporting bioactive metabolite quantification in agricultural raw materials, biorefined materials and foods.
- **Dietary exposure biomarker analysis** – Triple Quadrupole analysis area for targeted, quantitative analyses of urine and blood samples to assess compliance in food intervention studies and to measure biomarkers of overall eating behaviour in clinical trials with novel foods.
- **Bioavailability and metabolism assessment** – Determining the metabolic fate of food bioactives/ nutraceuticals in clinical trial participants.
- **Nutritional status assessment** – Clinical biochemistry analytics supporting nutritional status assessment.

