

Proteins from macroalgae

- Extraction and characterization

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Project objective

- Optimize extraction and purification of high quality protein from different types of macroalgae.
- Characterize proteins in macroalgae across seasons

Obstacles

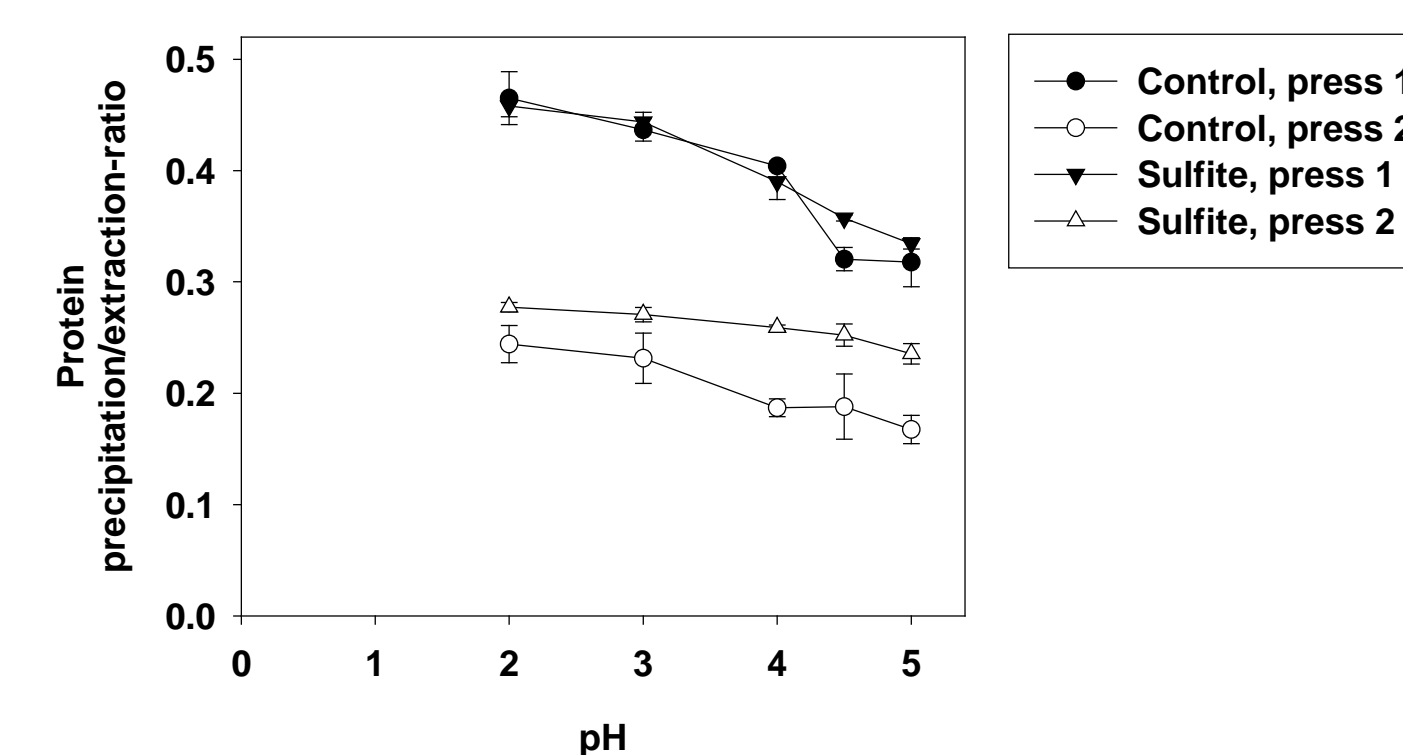
- Cell wall mucilages and polysaccharides reduce extractability.
- Process-modifications that reduce protein quality.

Species and season variation



Protein content, composition and quality are tested in *Ulva* sp. and *Saccharina* sp. across seasons.

Extraction and precipitation optimization

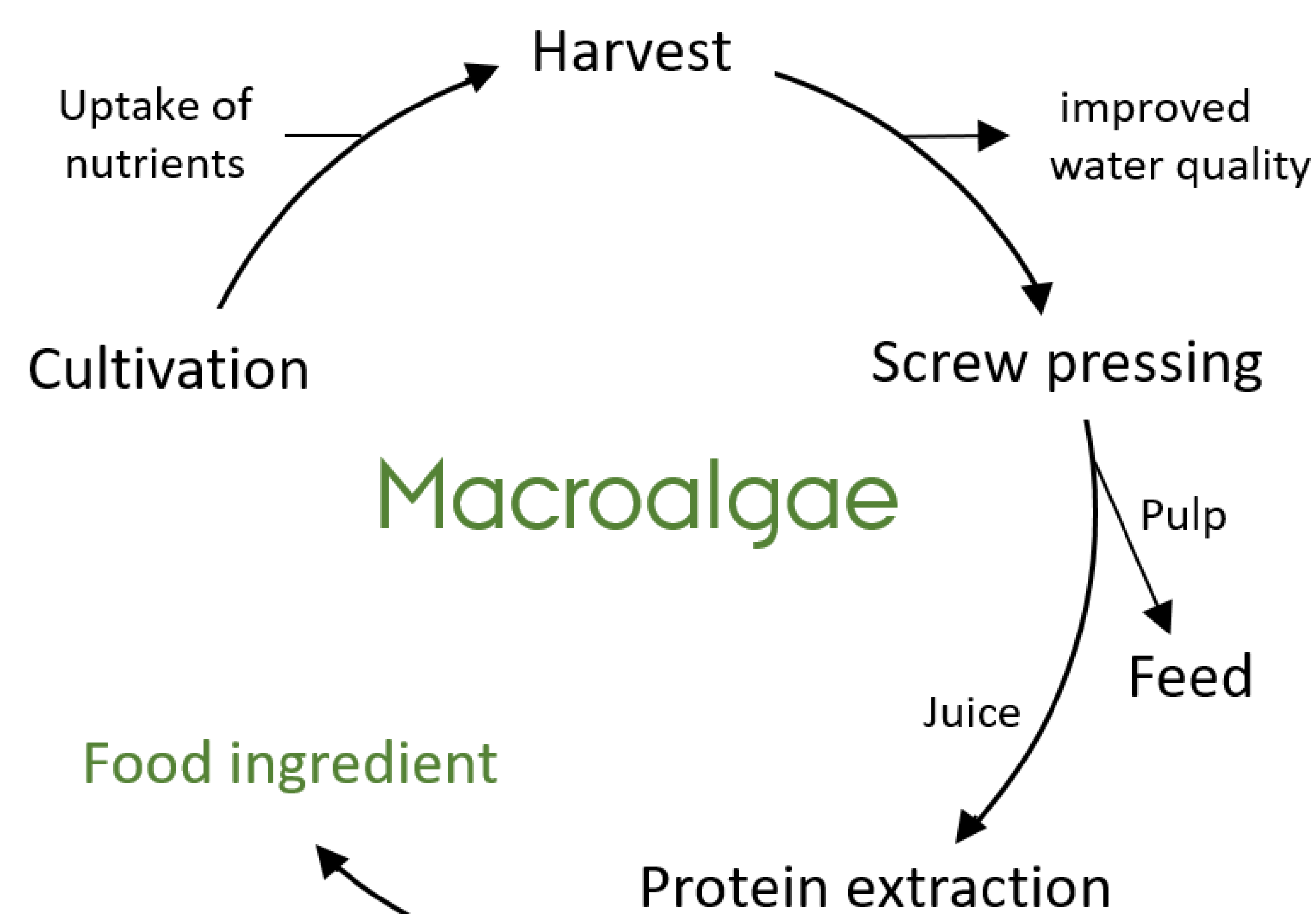


Optimization of extraction and purification techniques, e.g. by finding optimal pH for protein precipitation according to both protein yield and protein quality.

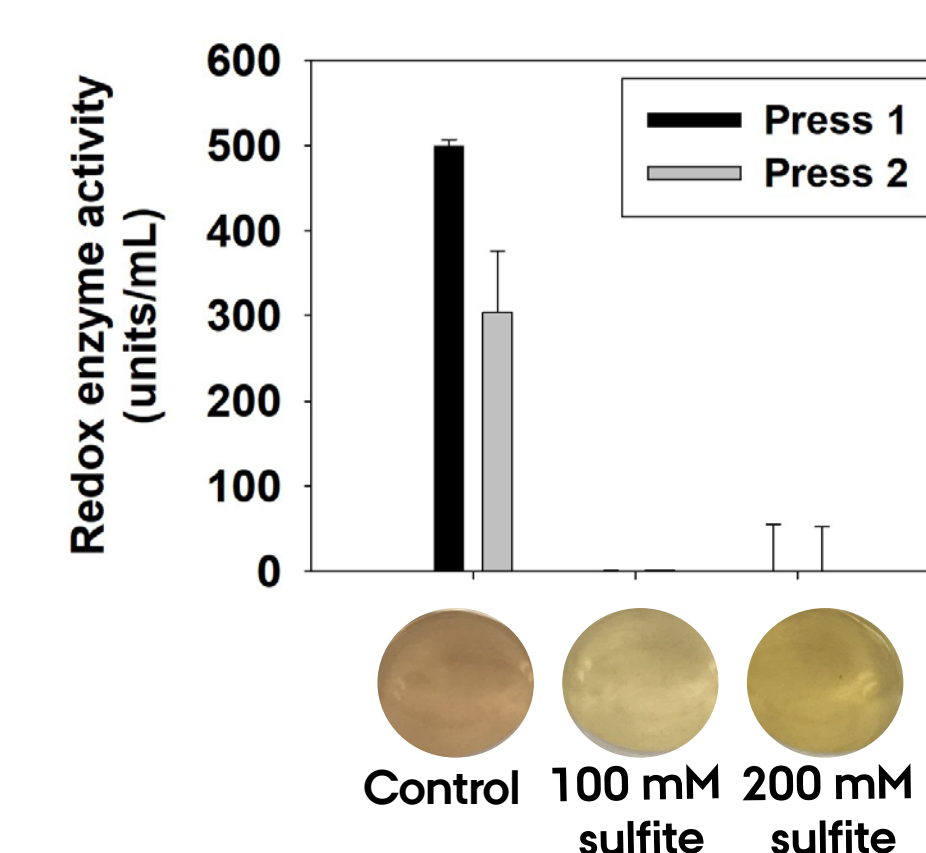
Protein digestibility



Digestibility of precipitated proteins and proteins in extracts is tested in vitro by peptic and pancreatic digests, and later in rats.

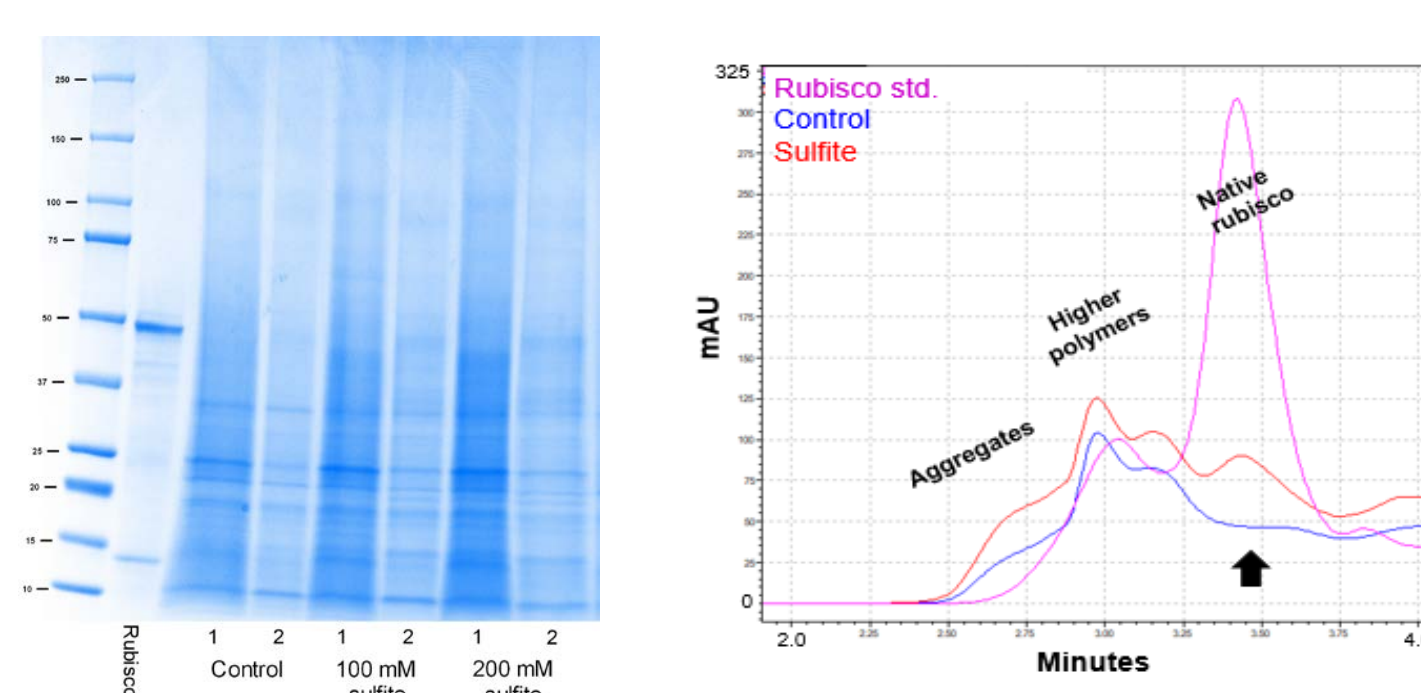


Process-induced modifications



Process-modifications such as enzymatic browning upon cell disruption can be avoided by addition of sulfite (antioxidant).

Protein characterization



Proteins are characterized by e.g. SDS-PAGE, size exclusion chromatography, and mass spectrometry. Moreover, analysis of amino acid composition will be performed and digestibility of proteins will be tested.

