48th Conference of the West European Fish Technologists' Association
Lisbon - Portugal, 15 - 18th October, 2018

Screening and processing techniques for macroalgae in food applications

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Introduction

- Trends “to-go”, “ready-to-eat” or “convenience” increased over the last years
- Mostly single-used packaging materials (non-biodegradable, petroleum-based polymers)
  - ➢ In conflict with the consumer expectations → healthy and environmental-friendly food products
  - ➢ New, innovative and sustainable packaging concepts need to be established!


[1]


[2]

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Brown algae

(Hertokontophyta)

- Hydrocolloids: alginic acid/ algins
- Specific polysaccharides: Mannitol, Laminarin, Sargassan & Fucoidan
- Bioactives: Fucoxanthin (Carotinoid), Polyphenols (Phloroglucin units) & Phlorotannins
- Iodine content: high (150 – 1200 mg/100 g DW)

Red alage

(*Rhodophyta*)

- Hydrocolloids : Agar (e.g. *Gracilaria sp.*), Carrageenan (e.g.v*Chondrus sp.*)
- Specific polysaccharides: Porphyran, Floridoside
- High protein content (up to 44 %, e.g. *Porphyra sp.*)
- Iodine content: middle (10 – 300 mg/100 g DW)

Green alage

(*Chlorophyta*)

- Fibers: Lignin, Cellulose
- Specific polysaccharides: Ulvan, sulphated polysaccharides & Galactans, Xylans
- High protein content (up to 44 %)
- Iodine content: low (2 – 25 mg/100 g DW)

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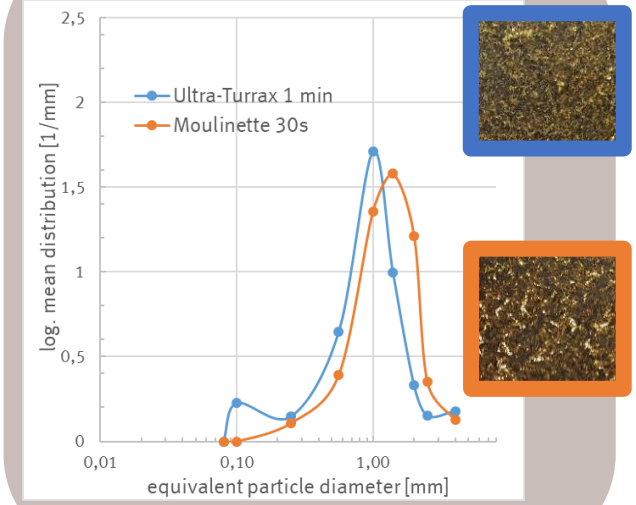
Preliminary Results

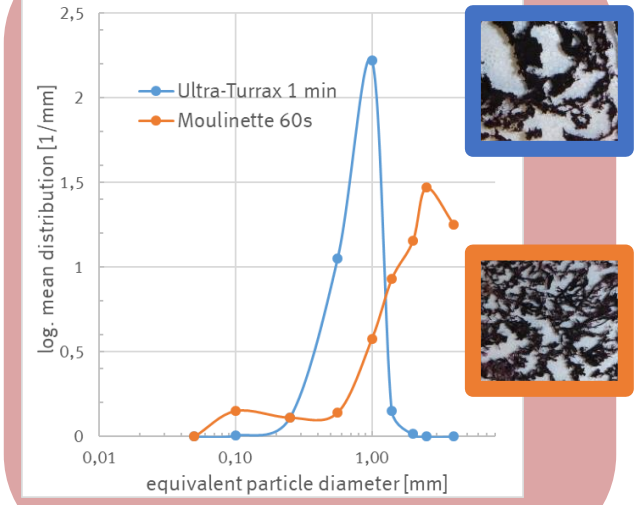
Saccharina latissima



Film forming ability of *Saccharina latissima* (left) and *Mastocarpus stellatus (right)* after grinding with Ultra-Turrax (blue, 60s) or Moulinette (orange, 30 s or 60s) with its particle size distribution after sieve analysis (wet, Retsch).

- Pre-Results: *Saccharina latissima* suitable macroalgae for innovative packaging system

Mastocarpus stellatus



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Thank you for your attention!

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