Bioprosessering av tare – hvilket utstyr trengs?

Seminar 8.april 2021

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Program:

1. SBN-P Tareplattform – Status og planer. 10 min
Finn Lillelund Aachmann, NTNU

2. Hva inneholder taren – resultater fra prøvetaking blant norske produsenter 2020. 20 min
Øystein Arlov, SINTEF Industri

3. Høsting og håndtering av fersk tare- hvilke metoder skal man velge? 20 min
Tom Ståle Nordtvedt, SINTEF Ocean

5. Min teknisk pause

4. Hvordan skal man få ut de interessante stoffene – Muligheter med bioprosessering – resultater så langt og planer videre. 20 min
Finn Lillelund Aachmann, NTNU

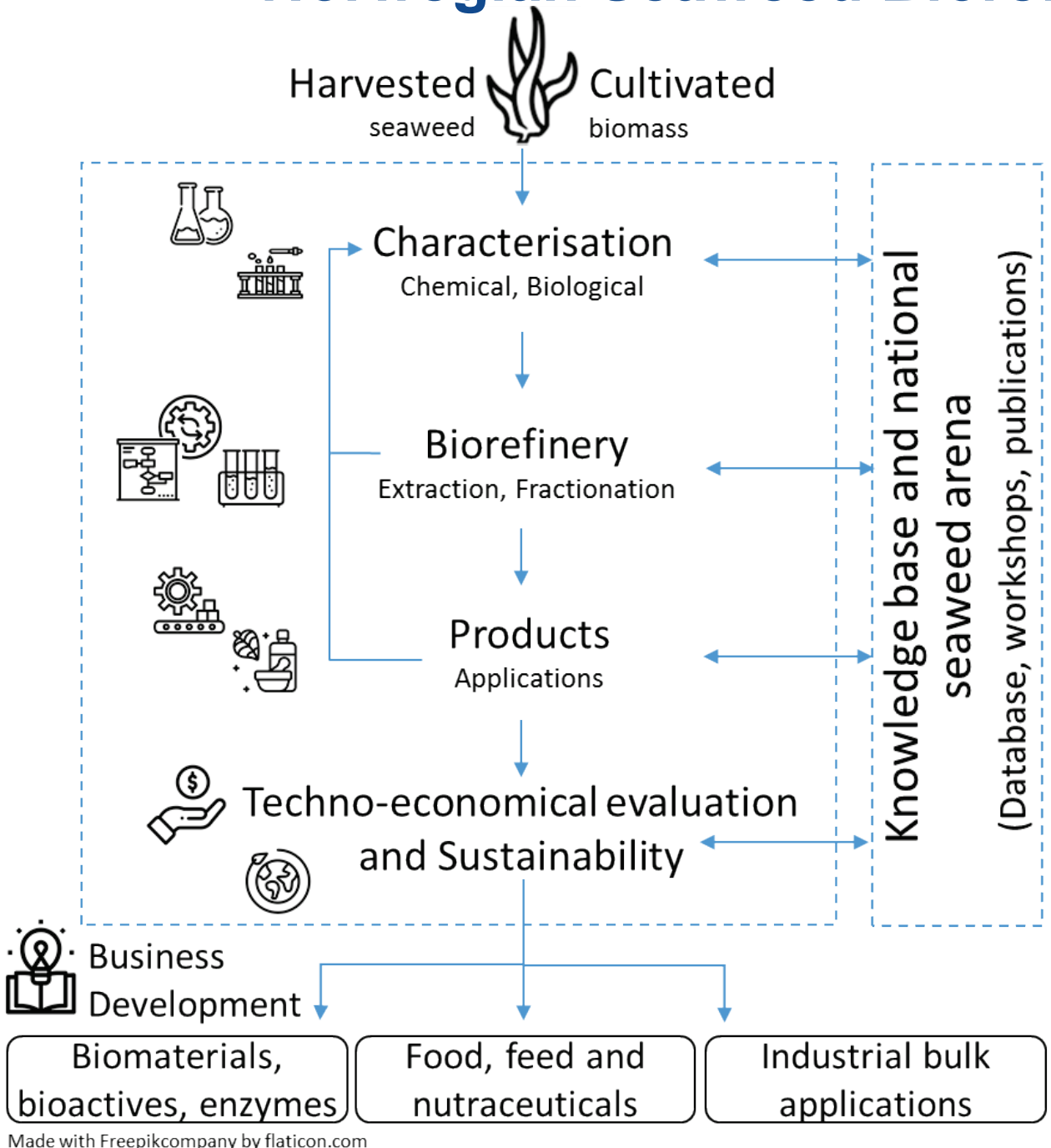
5. Utstyrsutvikling for tareindustrien? Et kort innlegg med påfølgende gruppearbeid. 30 min
Tom Ståle Nordtvedt, SINTEF Ocean

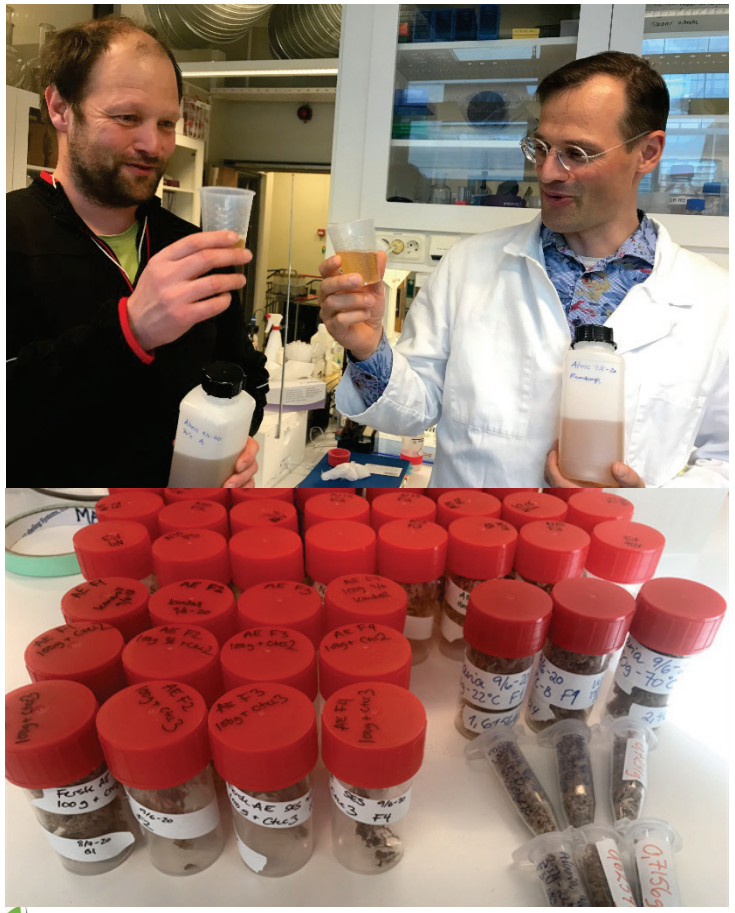
6. Oppsummering av gruppearbeid og avslutning. 10 min
Tom Ståle Nordtvedt, SINTEF Ocean

Tareplattformen – status og planer

Finn L. Aachmann, PhD, Professor, finn.l.aachmann@ntnu.no
NTNU Norwegian University of Science and Technology
Trondheim, Norway

Norwegian Seaweed Biorefinery Platform (SBP-N)





Nofima

Norges miljø- og biovitenskapelige universitet

MØREFORSKING

NTNU
Norwegian University of Science and Technology

SINTEF

The Research Council of Norway

Norwegian Seaweed Biorefinery Platform (SBP-N)

Harvested seaweed

Cultivated biomass

Characterisation
Chemical, Biological

Biorefinery
Extraction, Fractionation

Products
Applications

Techno-economical evaluation and Sustainability

Knowledge base and national seaweed arena (Database, workshops, publications)

Business Development

- Biomaterials, bioactives, enzymes
- Food, feed and nutraceuticals
- Industrial bulk applications

WP 2 – Characterization

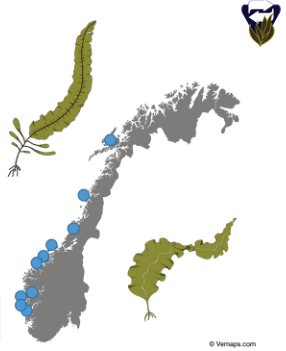
Sampling campaign 2020

- ✓ 15 samples (3 AE + 12 SL)
- ✓ Minerals (Iodine, arsene, bromide, cadmium)

ICP-MS analysis
Na, Mg, K, Ca, Ba, Zn, Cd, P, S, Cl, As, Se, Br, I

- ✓ Dry matter and Ash
- ✓ Crude protein (Dumas CNS, Kjeldahl total N)
- ✓ Carbohydrate analysis

HPAEC-PAD - H_2SO_4 and TFA
Mannitol, Fucose, Rhamnose, Galactose, Glucose, Mannose, Xylose



WP 3 – Pre-Processing of seaweed

Report

Preservation of seaweed

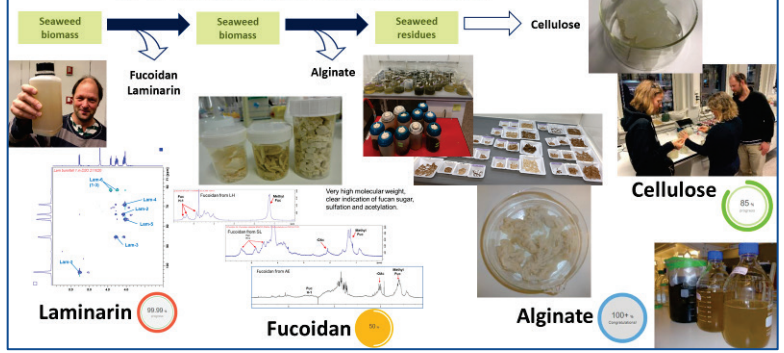
Status 2020

Author(s)
Tom Ståle Nordtvedt
Erlend Indergård and Rasa Sliutyte

Open report on pretreatment of Seaweed from SINTEF Ocean

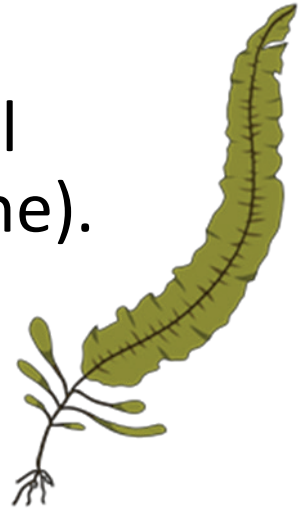
WP 3 – Seaweed biorefineries

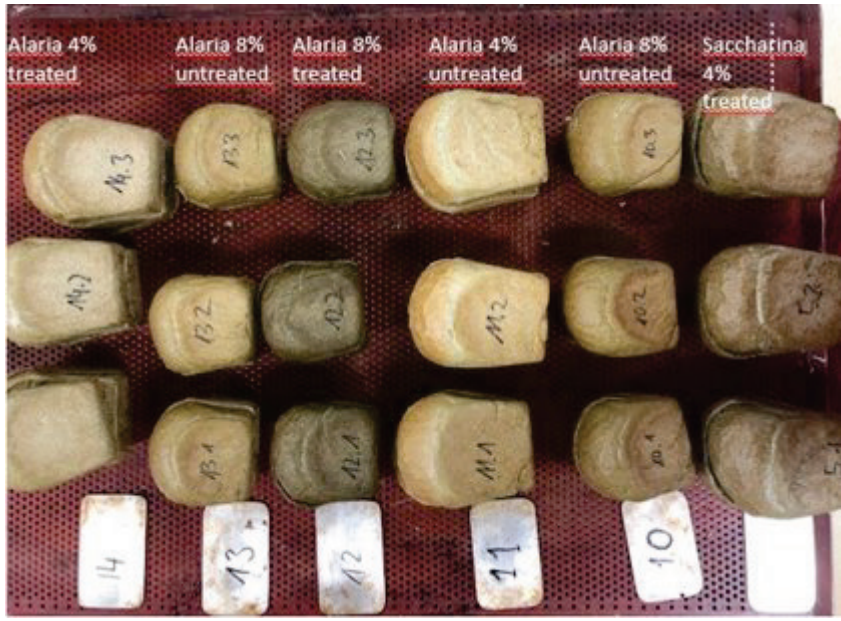
"We can extract all relevant sugars from seaweed"

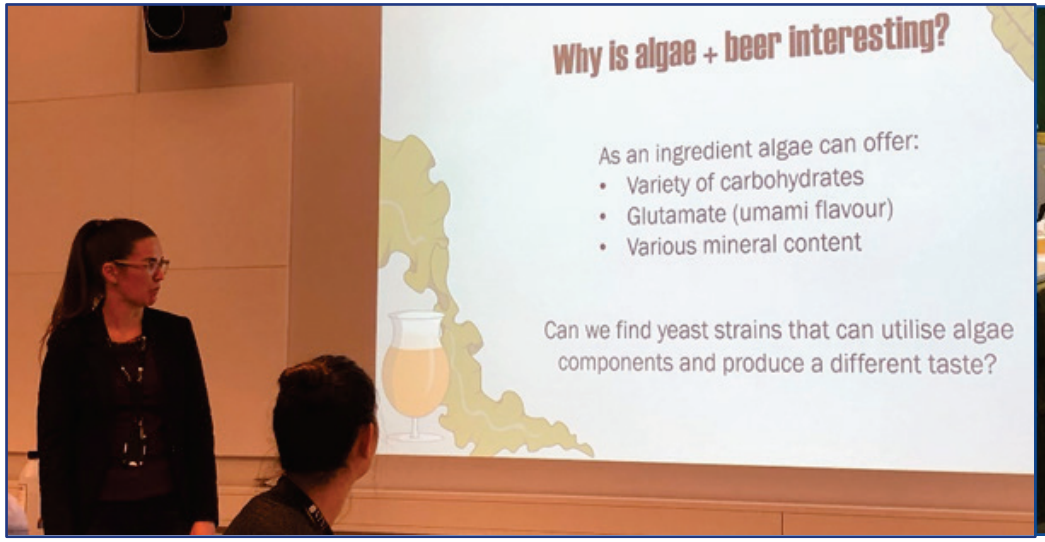


WP 4 – Products and applications

- ✓Possible effects of SL/AE on technological properties in bread (independent of iodine). This include analysis of iodine.



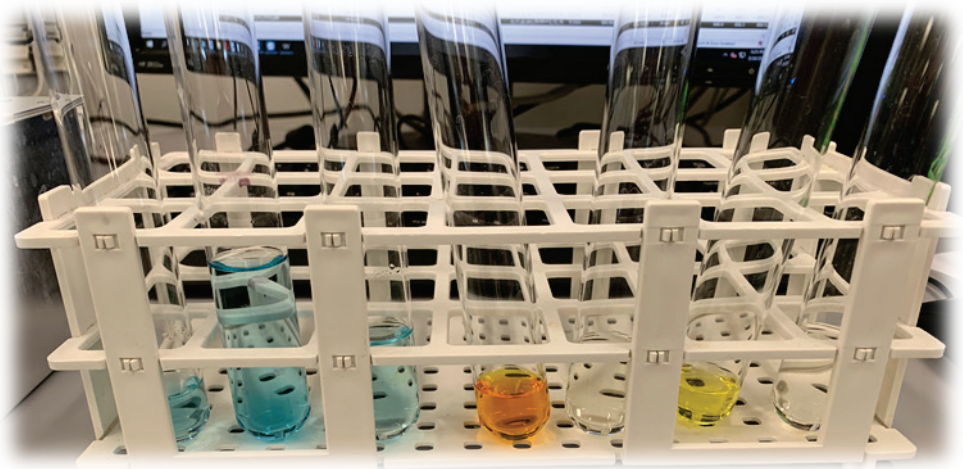


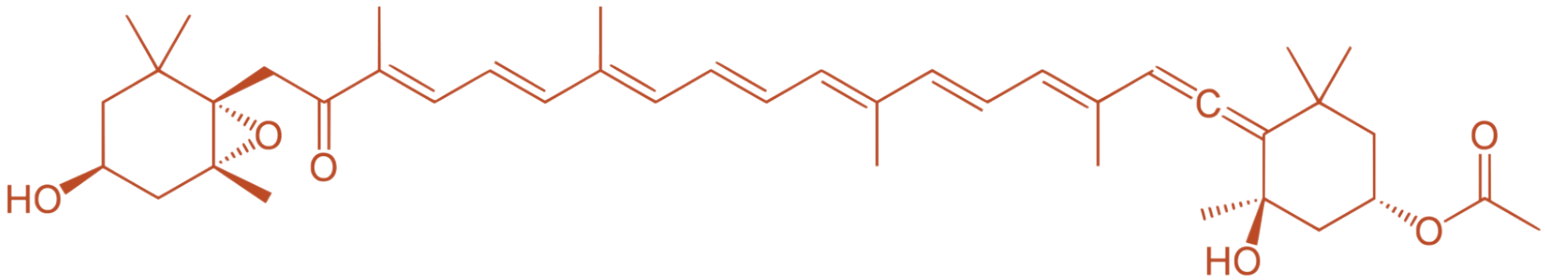


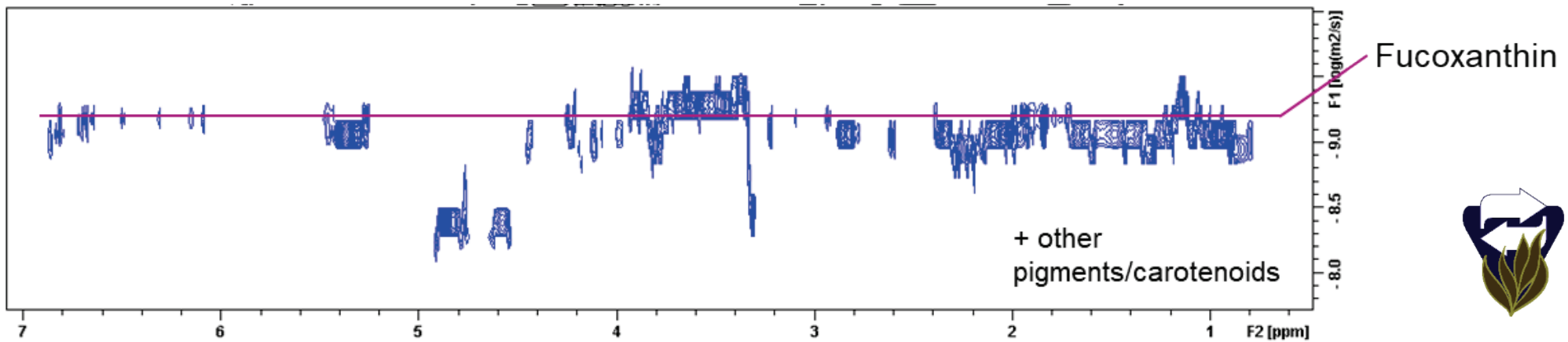
Maybe an **Algaebeer**

WP 4 – Products and applications

Extraction, characterization and evaluation of Polyphenol and Fucoxanthin







Plans 2021

❑Sample campaign 2021

- ➢ Seaweed Solutions AS will provide samples of SL and AE from their sites every 14 day throughout the whole harvesting period.

❑Integration of processes (Biorefinery)

- ➢ Laminaran, fucoidan, alginate and cellulose extraction in one process both for SL and AE.

❑Acid preservation of Seaweed

- ➢ Look more into the quality of the different compounds over time both for SL and AE.

❑SIG Seaweed meeting 25-26.11.2021 in Trondheim

- ➢ More results focusing on products from cultivated macroalgae will be presented from SBP-N