ORIGIN BY OCEAN

Making the chemical industry run on algae

SOLUTION

Algae based functional ingredients to substitute existing high carbon footprint chemicals

Team

Mari Granström
Founder, Chief Executive Activist
PhD Orgchemistry
>20 years of experience i

Heikki Heiskanen
Chief Operations Activist ,
MSc. Industrial Economics
>15 years of experience

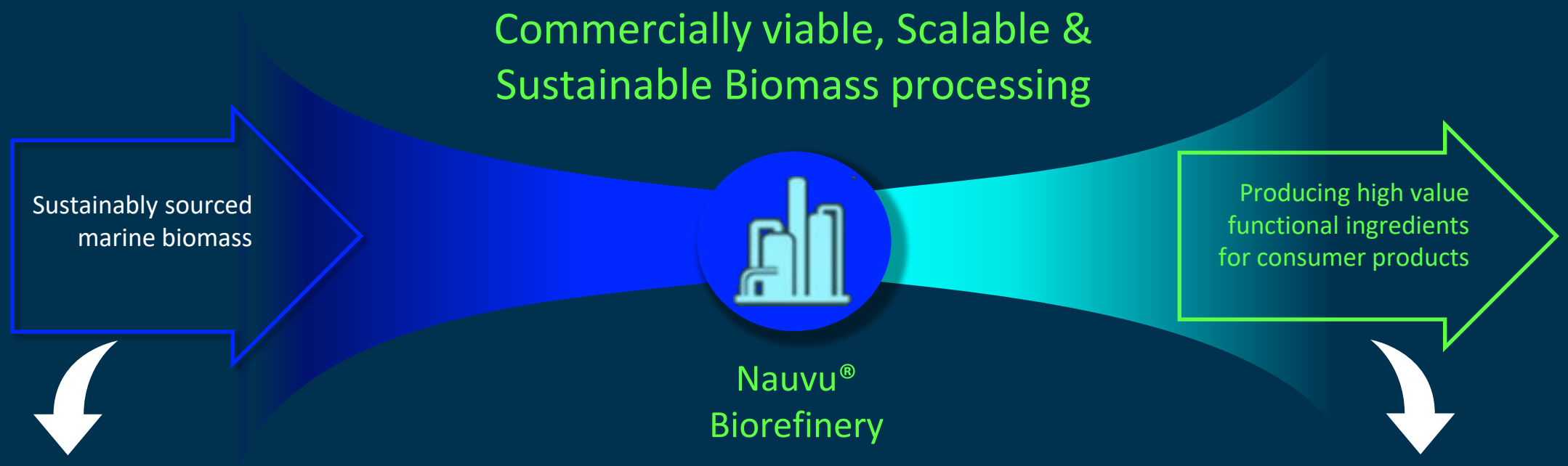
Today we are experienced and diverse team of 20 professionals

PhD Organic Chemistry X2
PhD Biochemistry
PhD Biology
PhD Marine Biology

MSc Chemistry X2
MSc Food Chemistry
MSc Biocosmetics
MSc Env. Engineering
Laboratory Technician X6

MSc Industrial Economics
MSc Chemical Engineering X2

Our Efficient & Regenerative Business



- ✓ Positive Environmental Impact
- ✓ Improved Biodiversity
- ✓ Nutrient removal in oceans

- ✓ Substitution of oil-based ingredients
- ✓ Substitution of animal based ingredients
- ✓ Reduction of carbon footprint of consumer products

Origin by Ocean's functional chemical ingredients. Made out of algae.

USAGE

- Food
- Cosmetics
- Detergents
- Textiles
- Packaging & materials
- Agriculture

CAERULO™
(Sodium Alginate)

- Thickening agent
- Viscosity and rheology modifier
- Humectant
- Stabiliser

USAGE: F C D T P

AXUREO™
(Fucoxanthin)

- Pigment
- Antioxidant
- Nutraceutica

USAGE: F C

LIVIDO™
(Laminarin)

- Biopesticide
- Thickening agent
- Binder

USAGE: A

CYANEO™
(Mycosporin)

- UV filter
- Antioxidant

USAGE: C

CUMATILO™
(Fucoidan)

- Antioxidant
- Bioactive nutraceutical
- Anti-inflammatory

USAGE: F C

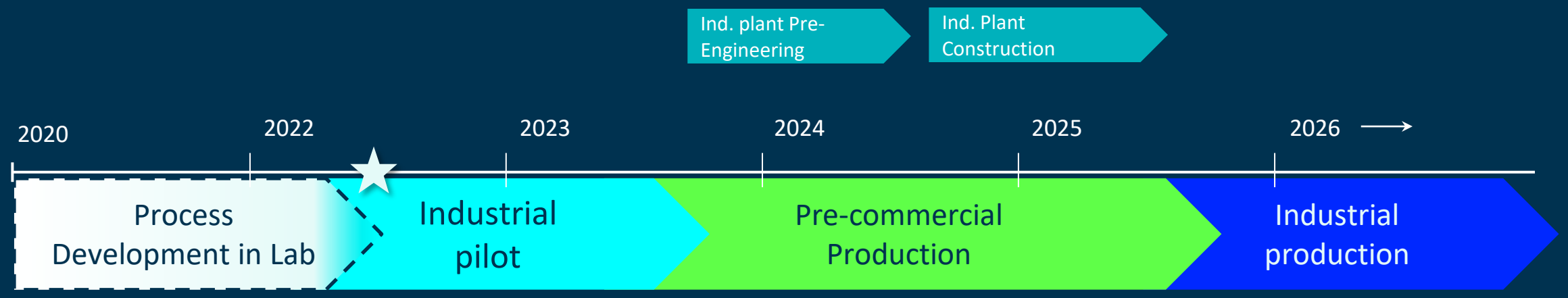
CALLAINO™
(Phycobilin)

- Pigment
- Protein
- Photoactive

USAGE: F T P

ORIGIN BY OCEAN

Timeline



Feedstock development

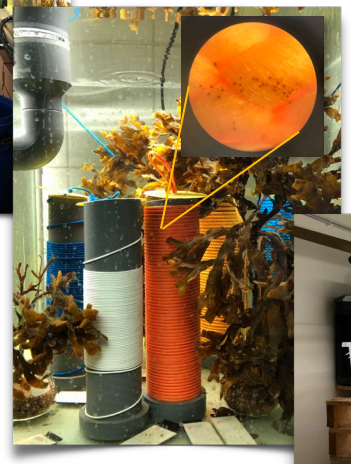
- Fucus farming
- Sargassum soursing
- Cyano collection

Fucus Cultivation

1.

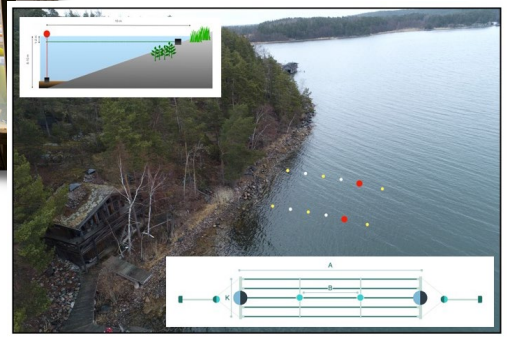
2.

3.1



3.2

4.



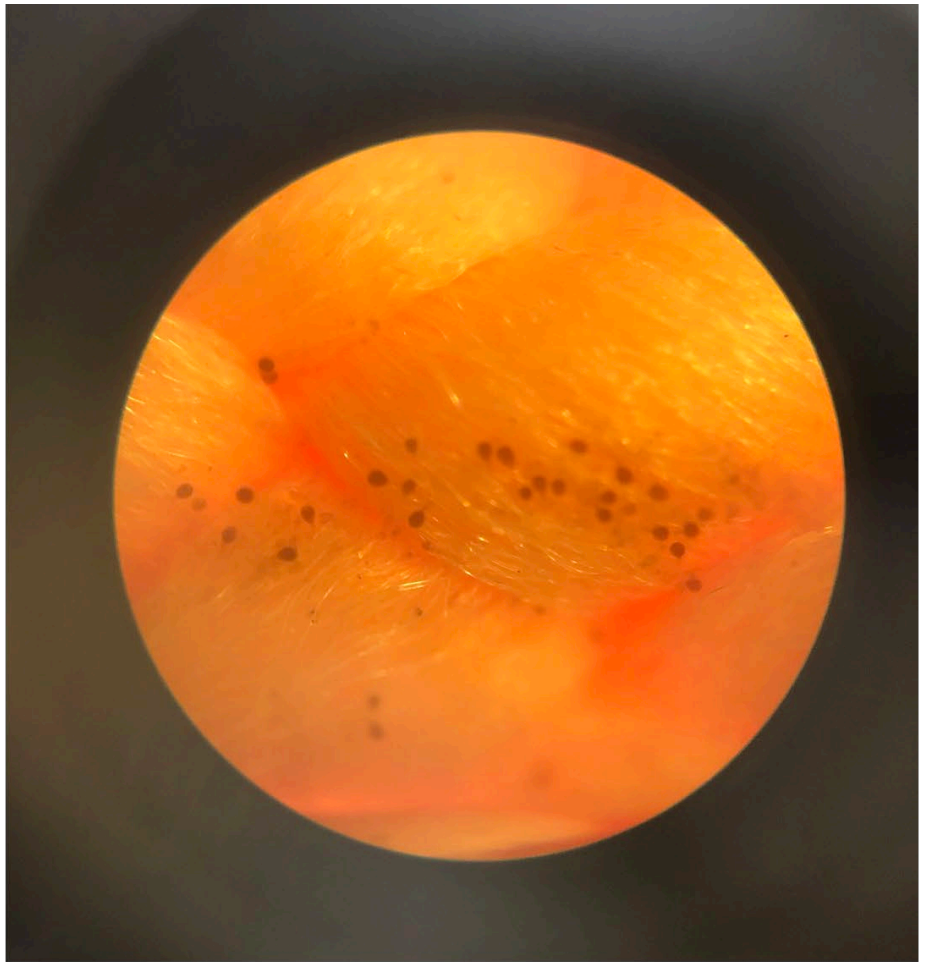
1. Collection and acclimation in lab
2. Development of reproductive structures (receptacles)
   - Re-Production 10 x year (nature 1x)
3. Reproduction and attachment of zygotes
   - Hatsery+Nursery in operation, 2 different methods
4. Farming - pilot in open water summer 2022
   - Known farming methods for kelp implemented for Fucus

Hyödyt ja mahdollisuudet

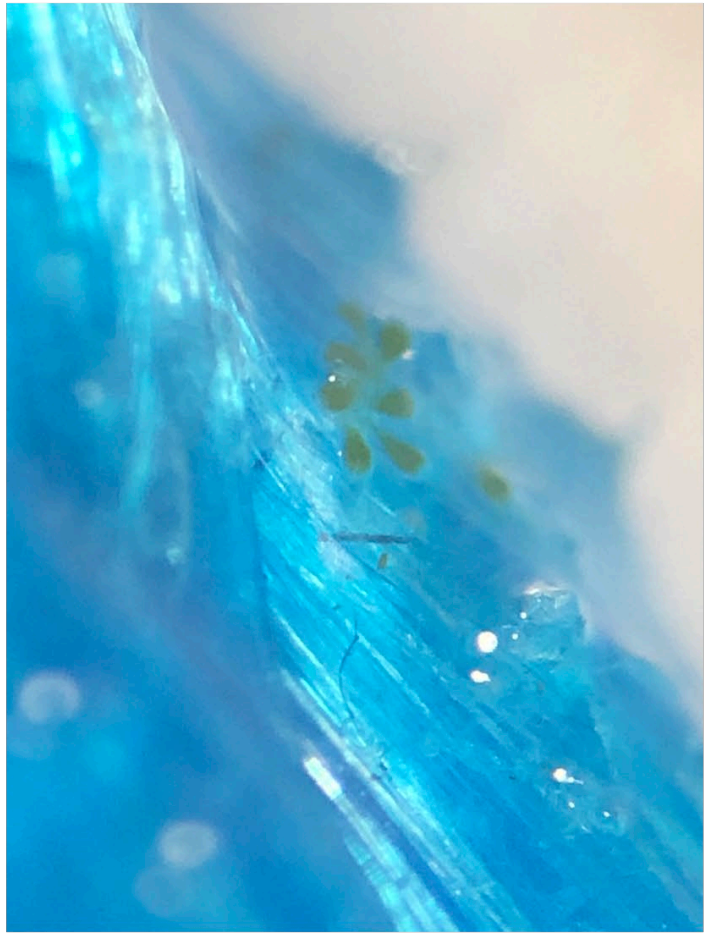
- Takes up “bad nutrients” and transforms into “good biomass”
- Needs very little maintenance after installation
- Species is adapted to the local environment
- Collaboration with local fish farmers helps with logistics
- Attracts local fauna

Käytännön haasteet

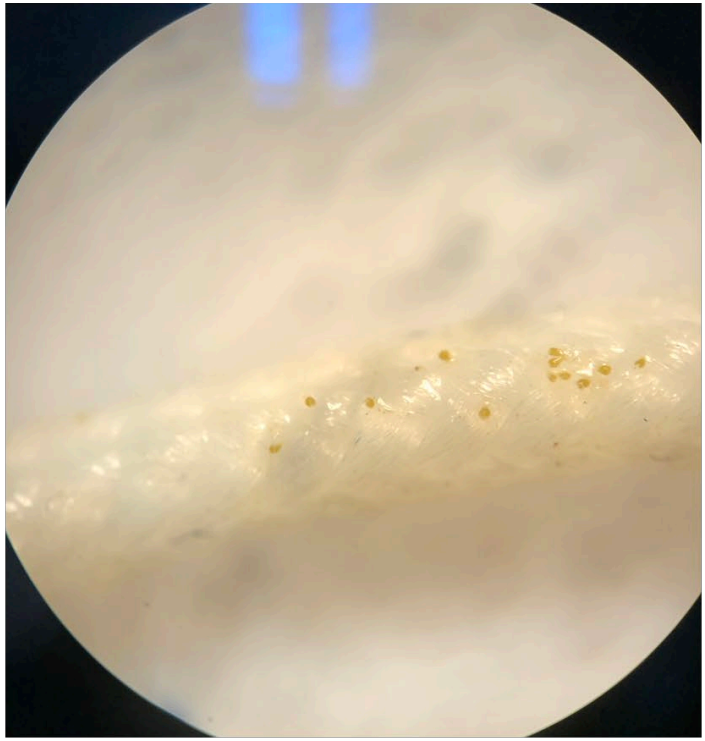
- *Fucus* doesn't grow as fast as other farmed algae
  - In nature: ca. 10cm year^{-1}
- The attachment structure is different
- Reproduction of Baltic populations is complex
- Harsh environmental conditions in winter
- Further offshore we go, more complicated it gets



Polyester rope (4mm thick)



Polypropylene rope (3 mm thick)



Polyester rope (1.3 mm thick)

So, let’s farm *Fucus!*

ORIGIN BY OCEAN

Washing the Oceans

KIITOS!