

Scaling-up Saccharina and Ulva production on the Swedish West Coast

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NORDIC

SEAFARM



Nordic SeaFarm

- Founded in 2016 by six researchers
- 15 people employed
- Gothenburg – Dingle - Stromstad
- World leading R&D
- B2B Supplier of seaweed
- Food – Biomaterials – Fertilizers – Animal feed
- Seaweed crackers



Our Farm

29 Ha Cultivation area

- In 2020, Nordic SeaFarm was granted a 29 Ha area in the sea to cultivate seaweed
- The area corresponds to approx. 300 tons seaweed capacity/year
- This permit is the first of its kind in Sweden and will enable an upcoming and rapid scale up

In 2021, capacity for approx. 100+ tons was installed. The potential to add another 200+ tons capacity can be made swiftly



Our Product Portfolio



Sugar Kelp



Sea Lettuce

We also source seaweed from other sustainable farms around the EU.
Therefore we can usually offer more upon request



Processing

- Fresh
- Dried
- Blanched and frozen
- Fresh frozen
- Salted



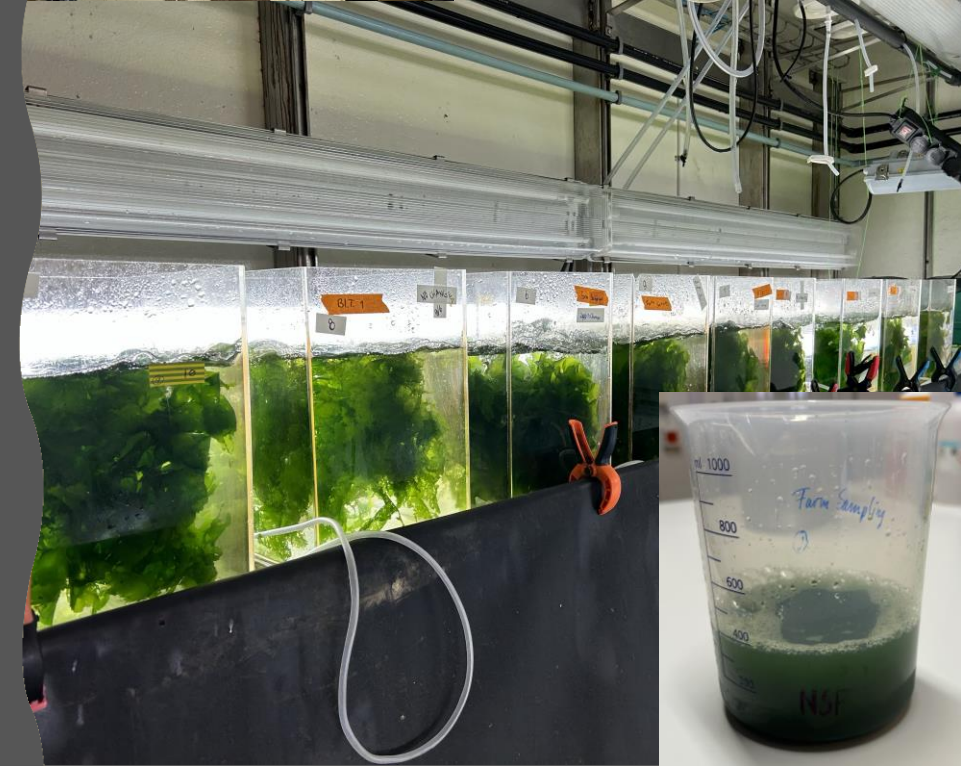
Up-scaling Ulva cultivation

- Control of fertility in mother plants
- Access to large amounts of spores/gametes
- Reliable protocols for growing early-stages in large quantities
- Method for applying seedlings to cultivation substrate (twine or direct seeding)
- A system for cultivation in the sea
- Effective harvest technology
- Processing/preservation techniques



Control of fertility and spore release

- Year round storage of mother plants (gametophytes and sporophytes)
- Weekly production of mature tissue during May-October
- Spore release twice per week (10 biljon spores)
- Gametes and zoospores



Cultivation of early stages

- June to October
- Possibility to keep dormant to bulk up for later use
- Production 2023: early stage material for 60 km twine
- Very low use of water and lab space



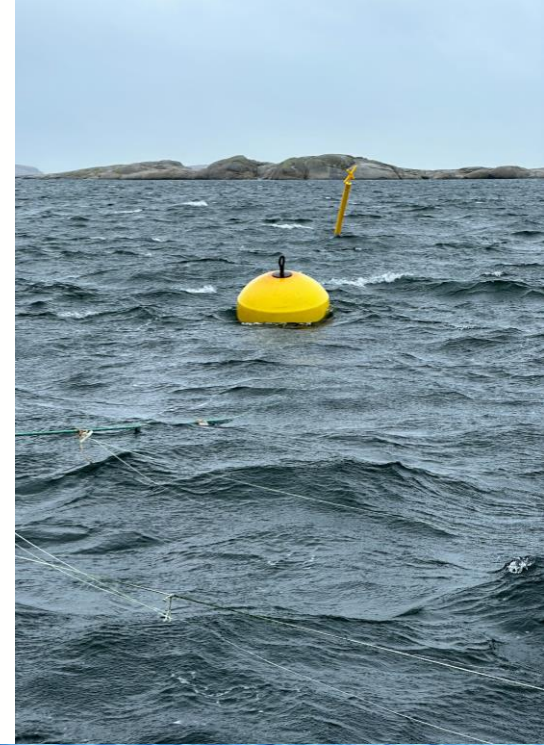
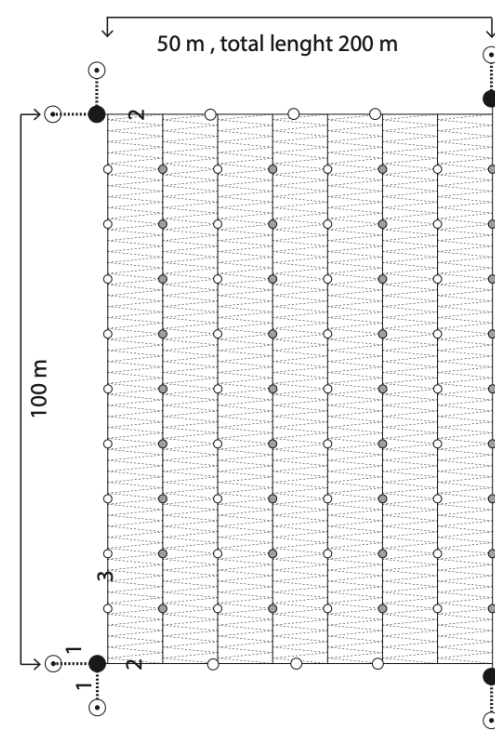
Twine cultivation

- August-November
- Ready for deployment after 3-4 weeks
- Container based simple system, "plug and play"
- Production 2023: 40 km twine



Seeding and Ulva rig

- Zig-zag pattern with ≈ 18 km seeded line per 2 ha
- No header/carrier rope used
- Seeding rate ≈ 500 m per hour and two persons
- Seeding from small boats (6 m)



Ulva harvest and processing

- Small scale farms, many farmers
- Harvest from small boats (500 kg biomass per landing)
- Small staff (2 persons) but slow harvest speed per boat
- Processing: dried, blanched&frozen, salted. Also sold fresh



Upscaling Ulva (and Saccharina) cultivation

- Improved harvest techniques (speed)
- Better utilisation of rig surface area
- Rig/line system adapted to harvest techniques
- More effective processing



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