

Welcome!

Seaweed Cultivation Workshop

January 26, 2017

Organizing Committee:

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What we want to accomplish today

Main goal: **Identify the potential for seaweed aquaculture in Nova Scotia**

- What has been done here and elsewhere?
 - Positives
 - Negatives
- What do WE need to do to succeed?
 - What are potential products?
 - What do we need to start?
 - What are potential roadblocks?
 - Infrastructure
 - regulatory

A bit of history (2015-2017)

- AANS requested a study to examine the potential of seaweed aquaculture in Eastern Shore, NS (2015)
- Bill and Stanley Oysters hosted a trial on their site in 2015/16
- AANS developed a proposal for funding (NS-DAF) to develop a plan for a comprehensive study of viability of seaweed culture at a number of sites in NS (2016-2017)

Survey of candidate seaweed species for aquaculture in Eastern Nova Scotia (2015)



Dr. Neil Ross (Ross Scinergy Inc.)

Dr Thierry Chopin (Professor, University of New Brunswick Saint John)

Survey of commercial seaweed species in Nova Scotia with promise for aquaculture

Species	Common name	Market	Value (High/Medium/Low)	Readiness for culture	Other comments
Saccharina latissima	Sugar kelp	Food	\$10-14/kg	Ready (T. Chopin – UNBSJ)	Formerly Laminaria saccharina. Annual crop
Alaria esculenta	Winged kelp	Food	\$10-14/kg	Ready (T. Chopin – UNBSJ)	Annual crop
Palmaria palmata	Dulse	Food	\$10-14/kg	In progress (T. Chopin – UNBSJ)	Annual crop
Pyropia umbilicalis and P. purpurea	Nori	Food	-	Non-local species of Pyropia are cultivated in Asia. Would need to develop cultivation methods and markets for these local species.	Formerly Porphyra umbilicalis and P. purpurea

Survey of commercial seaweed species in Nova Scotia with limited promise for open ocean aquaculture

Species	Common name	Market	Rationale for exclusion	
Chondrus crispus	Irish moss	Food	Tank cultivation of a specific strain for food for the Asian market. Much of the wild harvest reduced years ago, due to cheaper tropical sources of carrageenophytes.	
Ascophyllum nodosum	Rockweed	Food, agricultural products	Large tonnage of wild harvest and lower price for product.	
Fucus vesiculosus Fucus spiralis	Bladderwrack	Food, agricultural products	Abundance in wild and co-location with A. nodosum, along with no defined specific product.	
Ulva lactuca	Sea lettuce	Food, animal feed	Often considered a nuisance species, so growers may encounter resistance to its cultivation at high densities.	

2015 - List of regional companies that purchase, produce/process and/or sell seaweed products

Company	Website/contact info	Location	Sector	Current Products
Acadian Seaplants Ltd.	http://www.acadianseaplants.com/	Dartmouth, NS	Food, agricultural products, nutraceuticals/ cosmetics	Chondrus crispus (Irish moss) – food; brewing agent Ascophyllum nodosum (Rockweed) – crop and animal enhancement Red and brown seaweeds – functional ingredients, cosmetics
SeaBoost	http://www.seaboosta/	Lower Sackville, NS	Food, animal and garden products	Palmaria palmata (Dulse) – Food Chondrus crispus (Irish moss) – Food “Kelp meal” (most often A. nodosum) – Food Saccharina japonica (Kombu) – Food Alaria esculenta – Food Ulva lactuca (Sea lettuce) – Food Pyropia sp. (Nori) – Food Seaweed blend – Horse feed supplement Seaweed meal – soil conditioner
Atlantic Mariculture	www.organicdulse.com	Grand Manan, NB	Food	Palmaria palmata (Dulse) – Food Ulva lactuca (Sea lettuce) – Food Alaria esculenta – Food Pyropia sp. (Nori) – Food
Roland’s Sea Vegetables	http://www.rolandsdulse.com/	Grand Manan, NB	Food	Palmaria palmata (Dulse) – Food Pyropia sp. (Nori) – Food “Kelp meal” – Food
Slocum & Ferris	http://www.dulse.com/	Saint John, NB	Food	Palmaria palmata (Dulse) – Food
Louisbourg Seafoods	http://www.louisbourgseafoods.ca/Home	Louisbourg, NS	Agricultural products, interest in food	No products at moment. Developing soil conditioner/remediation.
Ocean Nutrasciences	http://www.oceannsc.ca/	Matane, QC	Bioactives	No products at moment. Investigating bioactives from marine biomass.
Cooke Aquaculture Inc.	http://cookeaqua.com/	Blacks Harbour, NB	Novel products	Saccharina latissima and Alaria esculenta. Developing seaweeds for human food, cosmetics, animal feed, biochar. Organically certified kelps.

Natural Ocean Products		Halifax, NS	Functional ingredients	No products at moment. Developing processing technologies for seaweeds and other products.
Ocean Nutrasciences	http://www.oceanns.ca/ 418 562 4700	Matane, QC	Bioactives	No products at moment. Investigating bioactives from marine biomass.
Cooke Aquaculture Inc.	http://cookeaquaculture.com/	Blacks Harbour, NB	Novel products	Saccharina latissima and Alaria esculenta. Developing seaweeds for human food, cosmetics, animal feed, biochar. Organically certified kelps.

Some Irish literature (2015)

- Aquaculture explained, No. 26: Cultivating *Laminaria digitata* (2011)
- A market analysis towards the further development of seaweed aquaculture in Ireland (2011)
- Business plan for the establishment of a seaweed hatchery and grow-out farm (2011)
- Aquaculture explained, No. 27: Cultivating *Palmaria palmata* (2011)
- *Palmaria palmata* – Recommendations of optimal techniques for obtaining spores of *Palmaria palmata*, settling and maintaining them prior to outplanting at sea (2011)
- *Palmaria palmata* – Recommendations for optimal ongrowing and harvesting techniques (2011)

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