NSERC Canadian Integrated Multi-Trophic Aquaculture Network

Réseau canadien d'aquaculture multitrophique intégrée du CRSNG

CIMTAN Snippets

Blair Billard, Production Manager for the Bennett Point site, where the CIMTAN project will take place.

Grieg Seafood BC Ltd. is a new industrial partner of CIMTAN. Established in 2001, Grieg's 21 farm sites are located in Esperanza Inlet on the east coast and in Nootka Sound on the west coast of Vancouver Island, British Columbia (BC). The town of Gold River, on the island's west coast, is home to Grieg's freshwater hatchery. Like many other rural communities closest to the farm sites, Gold River's businesses provide transportation, equipment and marine servicing in support of the aquaculture industry. Grieg's head office is located in Campbell River, the location of the industry's professional and technical services, governments and equipment providers. Grieg also has sites on the Sunshine Coast, 75 miles north of Vancouver, that produce both Atlantic and Pacific salmon and a processing facility in Egmont, which seasonally employs more than 50 persons.

During peak farming times, Grieg employs 120 persons, from nearly a half-dozen rural and aboriginal communities. Although many have grown up in Vancouver Island towns or are members of area First Nation communities, some have brought their families from other provinces to join the Grieg team. Several have returned to BC after working in the aquaculture industry elsewhere in Canada. Grieg's Managing Director, Stewart Hawthorn, has worked in aquaculture for more than two decades in Canada, Scotland and New Zealand, and understands the economic opportunity that the industry, valued at $800 million annually, brings to BC.

Although it is a smaller aquaculture company in BC, Grieg is committed to research partnerships. The proposed IMTA project with CIMTAN member Chris Pearce (DFO Nanaimo), at Grieg's Bennett Point site, will inform scientists, industry and regulators as it relates to the interaction of shellfish (Pacific oyster) with sea lice along one of wild salmon's migratory routes. The CIMTAN partnership will introduce Grieg's Fish Health team to researchers and experts across Canada and will, hopefully, present opportunities for further research activity.

Thierry Chopin and Amir Neori published an article entitled "ונמויקל תוינויחה תוצאה" or "**Algae are essential for our existence**" in ***Teva Hadvarim*** (the equivalent of *National Geographic* in Israel). After papers in English, French, Spanish and Chinese, a paper in Hebrew is a first for Thierry Chopin, who worked with long-time colleague and friend Amir Neori, of the National Centre for Mariculture of the Israel Oceanographic & Limnological Research Ltd. in Eilat, to adapt this paper, initially published in the spring/summer 2011 issue of the Cooke Aquaculture Newsletter.

Read the article:
http://www.unbsj.ca/sase/biology/chopinlab/articles/files/Chopin%20and%20Neori%202012%20Teva%20Hadvarim.pdf

Everything You Always Wanted to Know About Se…aweeds But Were Afraid to Ask! Now you can get the answers watching a beautiful and instructive **YouTube video,** entitled **"Seaweeds – a part of everyday life" at:** http://www.youtube.com/watch?v=kZup18AZtzk

This short video should be of interest to the general public, the experts and educators alike. Aimed at being informative with a touch of humor, this video should be enjoyable to watch while the roles, applications and values of seaweeds in marine ecosystems, the economy and our society are explained.

The media/graphics editor behind this video is **Paul Robertson**, known to friends and colleagues alike as "Robson". Robson, originally from the UK, landed in Canada in 2009 after 3 years of globetrotting. He spent time working as a cruise director in Toronto and a dog sledding tour guide in Inuvik, in the Northwest Territories of Canada, before making his way out east to St. Andrews, New Brunswick. Robson has been working with the IMTA team at the St. Andrews Biological Station since the beginning of 2010. Robson first produced a short informative video piece called "Seston – the particles in the water" using his media and imaging expertise in the field of video production, photography and graphic design. The product was well received by the IMTA team for communicating science in a modern way and to a wider audience beyond that of the scientific community. Since, Robson has continued to work to produce a series of informative video pieces, as well as bring his imaging skills into current IMTA research projects. Robson's six other IMTA videos are posted on the CIMTAN website (http://www.cimtan.ca/audio_and_video).

The Global Aquaculture Advocate just published the first part of a paper by **Thierry Chopin** entitled "**Seaweed aquaculture provides diversified products, key ecosystem functions. Part I. Lesser-known species group tops mariculture output**". Part II will be published in the next issue of *The Global Aquaculture Advocate* and will explore the seaweed industry and its more recent evolution.

In Part I, a kind of "Introduction to Seaweeds", Thierry Chopin explains what seaweeds do, their importance in aquaculture, and clarifies what seaweeds are, or are not, in simple terms for non-phycologists (phycologists are the people studying algae).

So, the next person using "marine plants" instead of "seaweeds" will have to copy 100 times "All plants are in fact algae, but not all algae are plants – Willem Prud'homme van Reine"!!! Yes, that's right: terrestrial plants are, evolutionarily speaking, of the same lineage as the green algae, but the most used and cultivated seaweeds, the brown seaweeds, are not plants but belong to the Chromista kingdom. Moreover, if kelps (a few species of which are cultivated in CIMTAN projects) are brown algae, not all brown algae are brown seaweeds, and not all brown seaweeds are kelps.

Willem Prud'homme van Reine is a member of the committee of the "International Code of Botanical Nomenclature" which is being re-named the "International Code of Nomenclature for Algae, Fungi and Plants" to keep everybody (or most) happy.

Read the article:
http://www.unbsj.ca/sase/biology/chopinlab/articles/files/Chopin%202012%20GAA%20Seaweeds%20Part%201%202%20pages.pdf

Top 25 hottest articles in the journal *Aquaculture* for 2011 – 3 papers co-authored by CIMTAN members and 3 papers on IMTA. That's 4 papers out of 25 or 16%... we are indeed hot!

http://top25.sciencedirect.com/subject/agricultural-and-biological-sciences/1/journal/aquaculture/00448486/archive/36/

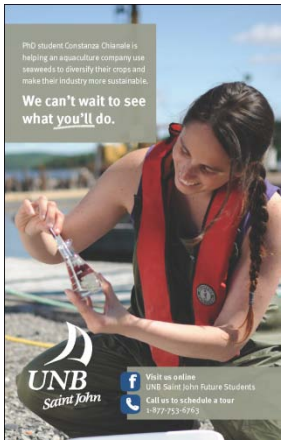
2. Burridge, L.; Weis, J.S.; Cabello, F.; Pizarro, J.; Bostick, K. Chemical use in salmon aquaculture: A review of current practices and possible environmental effects. *Aquaculture*, Volume 306, Issue 1-4, August 2010, Pages 7-23.

10. Neori, A.; **Chopin, T.**; Troell, M.; Buschmann, A.H.; Kraemer, G.P.; Halling, C.; Shpigel, M.; Yarish, C. Integrated aquaculture: rationale, evolution and state of the art emphasizing seaweed biofiltration in modern mariculture. *Aquaculture*, Volume 231, Issue 1-4, March 2004, Pages 361-391.

11. Troell, M.; Joyce, A.; **Chopin, T.**; Neori, A.; Buschmann, A.H.; Fang, J.G. Ecological engineering in aquaculture - Potential for integrated multi-trophic aquaculture (IMTA) in marine offshore systems. *Aquaculture*, Volume 297, Issue 1-4, December 2009, Pages 1-9.

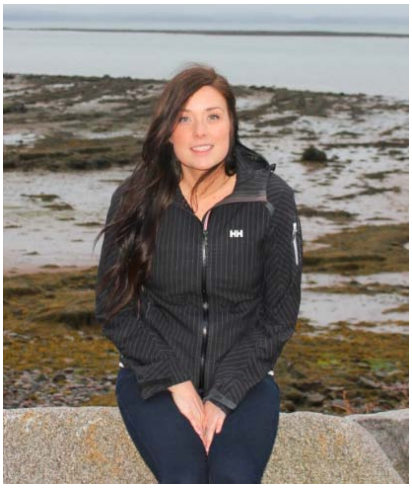
24. Nobre, A.M.; Robertson-Andersson, D.; Neori, A.; Sankar, K. Ecological-economic assessment of aquaculture options: Comparison between abalone monoculture and integrated multi-trophic aquaculture of abalone and seaweeds. *Aquaculture*, Volume 306, Issue 1-4, August 2010, Pages 116-126.

And **another paper**, from our IMTA team, **selected as the featured article for the *Journal of Shellfish Research*** by **BioOne** participating publishers (http://www.bioone.org/action/showDois).
Matthew Liutkus, **Shawn Robinson**, **Bruce MacDonald** and **Gregor Reid**, 2012. Quantifying the effects of diet and mussel size on the biophysical properties of the blue mussel, *Mytilus* spp., feces egested under simulated IMTA conditions. *Journal of Shellfish Research* 31(1): 69-77.
http://www.bioone.org/doi/abs/10.2983/035.031.0109



CIMTAN PhD student Constanza Chianale is the **"May girl"** on the **UNB calendar** and the **poster girl** for **student recruitment at UNB**! A new modeling career for Constanza and IMTA (which is also the acronym for the International Modeling and Talent Association; http://www.imta.com/)!

Nicole Leavitt first joined CIMTAN as a summer student in 2011. In the fall of 2011, she began her MSc thesis through the University of New Brunswick in Fredericton, under the supervision of Drs. Gregor K. Reid and Tillmann Benfey. Her day-to-day research occurs at the St. Andrews Biological Station, where she investigates the metabolic response and scope for growth of the green sea urchin (*Strongylocentrotus droebachiensis*) fed Atlantic salmon (*Salmo salar*) faeces as inputs for modelling the deposit feeder niche in IMTA systems. Nicole is now beginning the experimental phase of her thesis and looks forward to getting into the laboratory. When not working on her thesis, Nicole can be found on her family's whale watching boat, the Island Quest, observing and recording cetacean sightings, as well as maintaining the sightings blog.



CIMTAN member quote of the month: "The potential for diversification in an IMTA system is amazing - moving to full scale IMTA in the Bay of Fundy, including the green sea urchin, is something I look forward to seeing one day." (*Nicole Leavitt, CIMTAN MSc candidate*).