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Winter 2011

BC Shellfish Growers Association Quarterly Newsletter

Summary of Project on Ocean Acidification

This is a brief summary of a newly published report on Ocean Acidification. For the full report go to <http://www.epoca-project.eu/index.php/what-do-we-do/outreach/rug/oa-questions-answered.html>

Since the end of the first Industrial Revolution in the 1830s widespread burning of fossil fuels, deforestation and cement production has released more than 440 billion metric tons of CO₂ into the atmosphere (half of it in the last 30 years). This mass release of previously 'locked away' carbon enhances the natural greenhouse effect, and jeopardises the future stability of the Earth's climate. Fortunately for us more than half of this extra CO₂ has been taken up by vegetation and the ocean, greatly slowing the rate and extent of impacts of climate change observed to date, but with other consequences, especially for the ocean. When the additional CO₂ released into the atmosphere dissolves in sea water, several chemical changes occur. These are collectively known as ocean acidification – also as the 'other CO₂ problem' and 'the evil twin of climate change'. Ocean acidification has only recently been noticed, yet its implications may be as great as the global temperature increases arising from climate change.

What is ocean acidification?

The shift in the ocean towards more acidic (or less basic) conditions is happening because of the ever-increasing amount of CO₂ in the atmosphere. This is known as ocean acidification. It occurs when CO₂ reacts with sea water to produce an acid. The faster the increase of CO₂ in the atmosphere, the

faster the acidification of the ocean.

Understanding 'carbonate' and 'acidity'

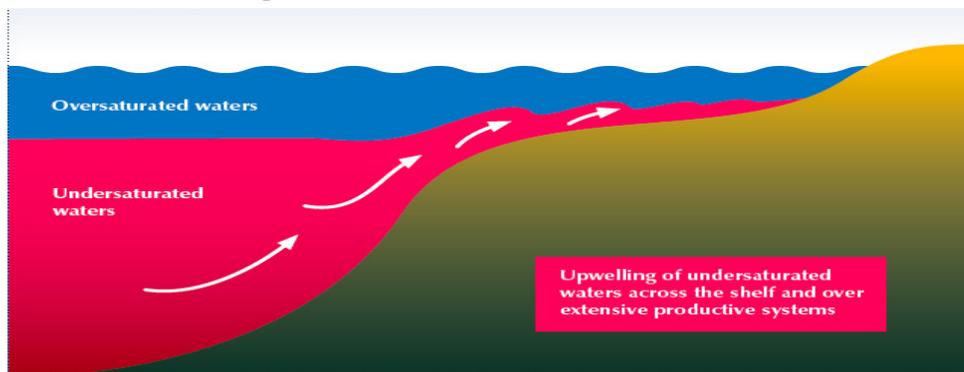
Ocean acidification is very different from climate change. Climate change represents a much larger set of consequences of human activity affecting a range of processes in ways whose frequency, scale and effects range from predictable to highly uncertain. Ocean acidification is the effect of CO₂ on the ocean as it is absorbed by the sea water. The term 'ocean acidification' summarises several processes that occur when CO₂ reacts with sea water.

Ocean problems coming to the surface

Coastal regions periodically experience upwelling events where deeper ocean water circulates onto continental shelves and near-shore areas. This exposes productive upper ocean ecosystems to colder water containing more nutrients but also more CO₂.

As ocean acidification makes the upper oversaturated layer of sea water shallower each year, these natural upwelling events will more often cause undersaturated water to well up and flow to the shore. Coastal marine organisms that form shells are unaccustomed to such events, and periodic exposures to these significantly different conditions may affect these communities. Upwelling of undersaturated water is already occurring on the west coast of North America, and it may start to

occur elsewhere where ocean conditions allow.



Seasonal invasion of undersaturated waters such as is already occurring on the west coast of North America could have serious impacts on important fisheries such as the oyster industry.

The View From My Desk

by *Roberta Stevenson*

Winter greetings from the warmth and comfort of my big office chair to all of you shellfish farmers out there making it happen! Without you and the government, what would I do with my time?! Seriously though, the goal of these newsletters is to try and keep you informed of it least some of the issues we deal with here daily on your behalf. Currently the three biggest being: Cadmium and the media, herpes in oysters, and rallying around keeping our waters clean enough to grow shellfish!

Those of you who farm away from the Baynes Sound “hub” spend more in fuel and labour, but the constant threats to the Baynes Sound region keep mounting. It is not only the area where over half the current farmed shellfish are grown, but also the region now needing a sewage treatment facility to service the massive urban growth projected for the area. The costs of putting in a fool proof system with the longest possible outflow pipe are being weighed against the fact that only 2500 current users will pay for the initial costs of the treatment facility. The BCSGA goal of improving water quality is weighing against the social and economic needs of the growing population. Bottom line with sewage plants is that nothing is fail safe. The three discharge locations proposed are Gartley Point, Union Point and just east of the Comox bar.

Politically this season has also been busy with the “take over” by the Department of Fisheries and Oceans. The SGA board and I have been working with the department to educate them on shellfish farming so that we can have a meaningful regime. Most of you have probably noticed that your new federal aquaculture license was issued for only 90 days, expiring on March 19th. You will soon be receiving a request to update your farm plan and contact information by March 31st. We encourage you to file with the department your current usage as they will be doing inspections shortly. The SGA has worked to translate the landings=quota language into the carrying capacity=production language on these new forms you will be receiving. This information will be used to determine the farm footprint and carrying capacity guidelines. Your production at present and your foreseen plan for the next five years will be used to help DFO understand our

industry now and into the future. Growers strive to have flexibility within their farm tenure to allow for changes in markets, mortality, and growth rates. Sometime after March the DFO should be able to start processing amendments to add new species (there are currently 15 approved species) to your farms. Fishing on a farm is definitely complicated!

Recently some of the small craft harbor authorities have asked farmers for proof of liability insurance on their vessels. This request will eventually be province wide and unfortunately add to the cost of being in business. Apparently to get liability insurance on your vessel, you don’t necessarily need hull and machinery coverage which costs about 3% of the agreed boat value including the outboard. The SGA is looking into the possibility of getting a group rate from a provider, and we may not need a survey if your boat is less than 25 years old. We will send out a membership email when and if we are able to get a association group coverage package. Make sure that since you are now carrying a federal fishing license issued by DFO, that you are given a commercial moorage rate as a fisherman. Note that pleasure boats also now have to show proof of liability insurance. Also, a reminder that your SGA membership brings you a much cheaper tenure liability insurance rate (also mandatory condition of your license) cost when you use Coastal Community Insurance; call Deanna Hill (250-703-4201) if you need to renew.

Another big change for shellfish farmers on the West Coast of Vancouver Island has been the introduction of precautionary measures for the control and spread of the green crab. Processors are no longer able to wet store any clams from the West Coast. This new regulation has been desired for years by the department, but has only now been possible with the “new regime”. The green crab appeared in Barkley Sound around 1999 and is now found as far north as Quatsino Sound. This new measure has effectively closed the wild clam fishery and heightened the need for a processing plant to be built on the West Coast. The SGA would welcome more research on the green crab and its potential migration.

continued on next page

The View From My Desk continued

On January 18th I was able to meet with Minister Murray Coell, the Provincial Minister of the Environment, to ask him to broaden the public participation and review for the proposed Raven Underground Coal Mine Project. We want there to be a comprehensive mapping and modeling of the aquifers in the entire region affected by the proposed mine. We also want the Minister to support the referral of the environmental assessment of the mine project to a joint federal-provincial independent expert review panel for full public hearings. Unfortunately, our requests have so far gone unanswered. It is pretty obvious that our Provincial government is currently in a hurry up and wait state; still trying to get the ink to dry on the ever changing letterhead. The

decision on the mine is looking to be made on a political level rather than an environmental; the SGA board continues to lobby against this project that is only 6 km uphill from our growing waters. The public comment period for the project should happen around the end of March.

Being an advocate for the issues that concern shellfish growers from the comfort of my office can be a challenge in that I am no longer working the farm. Please continue to phone/email us with the concerns that you have, keeping us up-to-date with what is really going on out there!



New Regulations Mean Positive Changes for the Shellfish Farming Industry

submitted by the Department of Fisheries & Oceans Canada

Fisheries and Oceans Canada (DFO) has a new regulatory responsibility for aquaculture in BC, and has assumed the role of primary licensing authority from the BC government. The Department is looking forward to working with the shellfish industry to reduce the regulatory burden where appropriate while supporting your goals of building an economically-successful, environmentally-conscious, safe and sustainable industry.

DFO's expanded role in aquaculture is built on the foundation of our:

Pacific Aquaculture Regulations

Officially in effect December 18, 2010, the new Pacific Aquaculture Regulations, implemented under the Fisheries Act, have allowed DFO to tailor aquaculture licences for each type of aquaculture activity conducted in B.C. The new Regulations provide the Department with the powers and flexibility necessary to effectively and efficiently regulate aquaculture in this province, while reducing the regulatory burden on industry and creating efficiencies for growers.

According to Andrew Thomson, Director of the regional Aquaculture Management Division in Vancouver, "The new Regulations benefit industry by streamlining administrative and regulatory hurdles. They also reduce complexities that previously existed by simplifying the federal permits and authorizations required to undertake shellfish farming in B.C."

As is the practice in all fisheries managed by DFO, program policies, science, integrated management planning

processes and other engagement processes will inform future decisions, or changes to the conditions of licence and other management measures. Over the next few months, the Department will be working with First Nations, licence holders, and others as it continues to develop processes and priorities to guide its work in these areas.

The Province of B.C. remains a key player in the management of the aquaculture industry, as it will continue to issue leases, licence marine plant cultivation, and manage business aspects of aquaculture such as work place health and safety.

New DFO Employees

As part of DFO's initiative to ensure the smooth management and regulation of the aquaculture industry in B.C., over 50 new federal government employees have been hired, with varying roles and responsibilities. The vast majority of the new Departmental aquaculture staff will be located on Vancouver Island, close to where the aquaculture industry operates.

Working in newly acquired office space, 14 new aquaculture employees will be based in Nanaimo, including fishery officers and aquaculture resource management staff.

The 14 new aquaculture employees in Campbell River, including fishery officers, licensing staff and staff responsible for finfish field assessments, will also be working out of new office space.

continued on page 4

New regulations (continued)

Nine employees will be based in Courtenay, and be responsible for fish health monitoring, shellfish and freshwater field monitoring and assessments, as well as running the fish health laboratory. There will be six new employees for Port Hardy, including a fishery officer, aquaculture resource management staff and employees responsible for finfish field monitoring and assessments. And in Vancouver, there will be a total of 11 new employees providing communication services, aquaculture resource management, Conservation and Protection (enforcement), and information technical support.

B.C. Aquaculture Regulatory Program (BCARP)

BCARP is a new program the federal government has developed to manage, administer and regulate aquaculture activities, including shellfish operations, on the West Coast.

Under the program, DFO staff will be responsible for:
 Reviewing aquaculture licences and conditions of licence; Liaising with stakeholders, other governments and First Nations; Reporting publicly on the environmental performance of the aquaculture

industry; Developing operational policies and Integrated Management of Aquaculture Plans (IMAPs); Conducting compliance evaluations for fish health and environmental protection; Reviewing and analyzing environmental and compliance data; and evaluating the effectiveness of environmental protection.

A Conservation and Protection unit has been created under BCARP. Its primary role is to enforce compliance with the new Pacific Aquaculture Regulations. DFO fishery officers will conduct scheduled and unannounced site patrols and inspections, and undertake investigations and enforcement actions as required.

Reminder

Federal aquaculture licences were issued in December. If you have not applied for your federal licence, please contact the Department immediately:

Telephone: 250-754-0397 Email: aquaculture.licensing@dfo-mpo.gc.ca

For more information on aquaculture in B.C., visit DFO's website: <http://www.pac.dfo-mpo.gc.ca> or www.pac.dfo-mpo.gc.ca

A Message from PRISC

Upon reviewing the 2010 season's shellfish-related illness cases, PRISC has the following reminders to shellfish harvesters.

1. 125 m Prohibited Zone around Floathomes

No shellfish shall be harvested for any purpose within a 125 m radii distance from a floathome unless for the movement of seed or spat, of a size defined by DFO, with a valid licence under the Management of Contaminated Fisheries Regulations of the Fisheries Act and the Canadian Shellfish Sanitation Program (CSSP). Provisions also exist whereby the Pacific Region Interdepartmental Shellfish Committee (PRISC) may approve a reduction of the prohibited zone around floathomes located inside shellfish leases to a minimum 25 meter distance. In order to ensure that food safety objectives are not compromised, certain criteria and conditions must be maintained at the lease including that there be no effluent of both black and gray water from the floathome and that such a commitment be reflected in the facility's management plan and form a condition of license. Specific instructions and guidance on this can be obtained

by contacting your local DFO Office. Aquaculture in the Pacific Region <http://www.pac.dfo-mpo.gc.ca/aquaculture/index-eng.htm>

2. Processors Receiving Product from Leases with Floathomes. Harvesters should have practices in place which assure processors they are sourcing safe product from reliable sources. Processors should review, and if applicable, amend their Supplier Quality Agreements (SQAs) to include food handling practices, employee illness procedures, employee hygiene, and adherence to CSSP Chapter 4 section 4.3 (Human Wastes).

3. Harvest Employee Training & Education Harvesters need to show due diligence in their role in potentially introducing contaminants into food for consumption. To ensure a safe food supply, appropriate training of harvester employees should include:

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Experience the authentic taste of the West Coast

BC
**Shellfish
festival**

3rd Weekend
in June, 2011
Comox Marina Park
*In the heart of
Canada's oyster capital*

Competitions
Culinary Delights
Live Entertainment
Cooking Demos
Gourmet Chef's
Dinner by some of
BC's top chefs



Brought to you by

BCSGA
BC Shellfish Growers Association

The Province and it's role in Aquaculture

submitted by BC Ministry of Natural Resource Operations

Last December, B.C.'s aquaculture industry saw a redistribution of roles between the Province and the Federal Department of Fisheries and Oceans.

Provincially, the Ministry of Natural Resource Operations has assumed responsibility for all Land Act tenures while the Ministry of Agriculture will continue to promote the development of the aquaculture industry. At a federal level, the Department of Fisheries and Oceans remains accountable for regulation and management and is now also responsible for issuing Federal Fisheries Act Licenses.

With these changes, shellfish aquaculture farmers in B.C. will benefit from a more integrated approach to service delivery.

Shellfish farmers will also benefit from the more streamlined land management system delivered by the recently created Ministry of Natural Resource Operations. FrontCounter BC allows aquaculture farmers to receive all provincial permits and tenures in one location, rather than dealing with multiple agencies to

obtain necessary authorizations.

As British Columbians, our identity, economy and way of life are tied to our natural resources. With rising demands on our land base, increased recreational and resource activity and climate change

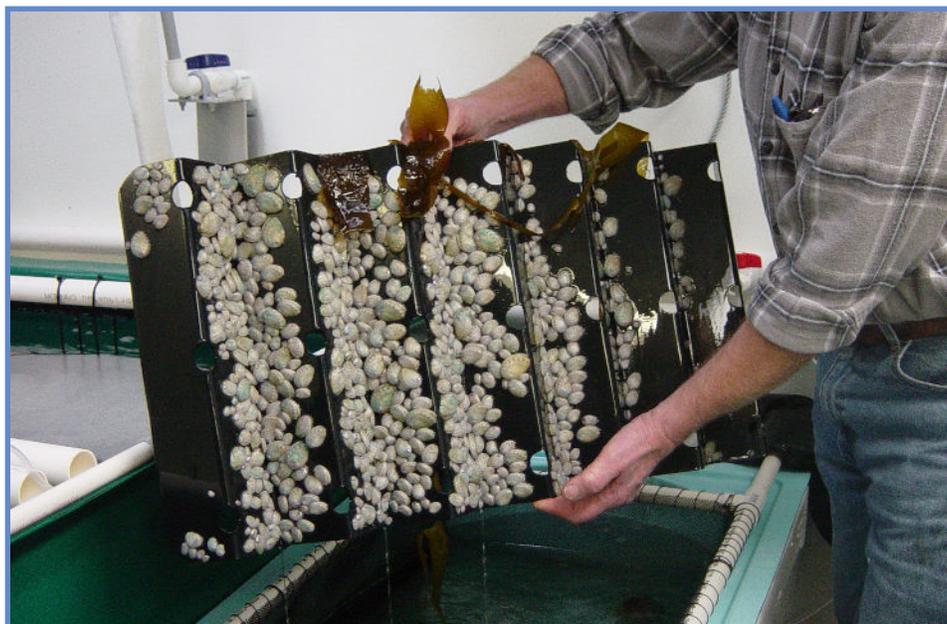
there is an urgent need for an integrated approach to managing our land.

The Ministry of Natural Resource Operations is committed to delivering better service and better land management services to British Columbians.

Regionally based, this ministry is about creating predictability and encouraging investment while ensuring our strong environmental standards are maintained.

This is an exciting time for the natural resource sector in BC and

through continuing to improve service for clients and communities, the future looks prosperous and sustainable.



Marketing and Certification

By Roberta Stevenson

The information overload of today's complicated world has created an unprecedented demand for more food products to show sustainable practices; this is especially true with seafood. While shellfish growers in British Columbia already feel they meet and in fact, exceed, the definition of sustainable, we are being told that certification as such is our new reality. Proving one is sustainable is a complicated and expensive additional cost to the already tight profit margins.

The retailers are looking to assure their customers that they are only selling sustainable seafood. A person using an iPod phone can now walk the grocery store aisles and scan bar codes to analysis every product in the store, learning about the health, social justice and impact on the environment of that product before purchasing it. The appetite for information on farmed seafood choices seems insatiable.

Truth is that if someone doesn't like shellfish, we probably cannot change their minds. We need to target the 20% of the population who already like shellfish and get them to pay a premium price.

We need to change shellfish from being a commodity to an experience by taking the following steps:

Awareness- through retailers and restaurants and event participation

Education- through controlling information sources

Preference- influencing consumer choices

Loyalty- consumer will be loyal to BC grown shellfish

Ownership- consumers will seek our products and



become ambassadors for it

Every major change in the marketplace is event driven. I've been told though, that only 20% of the farming industry would be able to achieve certification standards. For the average mussel farm to be certified the annual audit costs would run around \$4-5,000 and other costs involved would be at least \$3,000 a year. Many of us believe strongly that in Canada our farms are already highly regulated and that if we aren't operating sustainably we are not in business. Proving

this point will soon be done thru a program designed to look at the Canadian regulatory regime against other nations to do a regulation gap analysis. This program will be a Canadian Aquaculture Industry Alliance lead initiative.

Recent surveys have found that 49% of consumers understand the "sustainable seafood" debate. Luckily for shellfish farmers, our products are considered green by organizations

such as Sea Choice and Ocean Wise. The shellfish growers association has just become a paying member of the Ocean Wise Program and will be providing our membership list to the program. Our member companies are now able to utilize the logo and program as an SGA membership benefit.

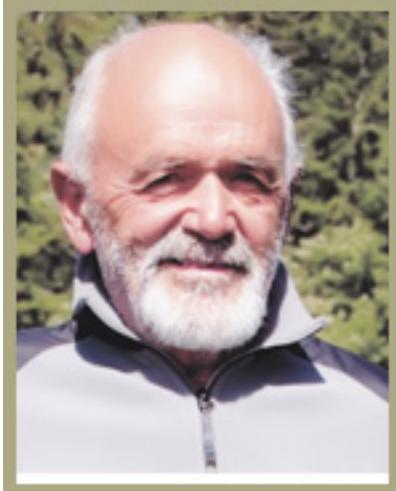
I believe that the consumers should not purchase from the more problematic fisheries. However, we do not need to buy into the hysteria and hype by developing certification programs that are redundant. To that end, we encourage our growers to utilize the Ocean Wise logo on their product and promotional materials.

A Message from PRISC continued from page 4

- Prohibited zone boundary location
- Safe food handling & hygiene practices
- On-board waste containment - location, use, and emptying of the on-board waste receptacle, and the importance of its use
- Employee illness – reporting to supervisor, authorized return to work

In Memorium

Picard, Alfred
October 27, 1943 –
October 29, 2010
“Fred” as everyone
knew him, died in
a tragic motorcycle
accident near Forks,
Washington. He
was returning home
to Victoria after
his 25 day holiday
road trip down
through Arizona.



Fred Picard

He left this world fulfilling a dream and doing something he really loved. He will be sadly missed most by his son, Nigel. They worked together on the oyster farm on Cortes Island and then on the hot dog cart in Victoria. Fred was not only a father to Nigel but his “best friend”. He will also be lovingly missed by his wife of 40 years; his daughter, Vanessa and her partner, Andy; his daughter, Candace and his two wonderful granddaughters, Savannah and Madelyn. Also left to mourn are his two brothers, his two sisters, nephews, nieces and a lot of friends. Fred will always be remembered for his friendly personality, his smile and his warehouse of knowledge. Fred was a long time member of the BCSGA and spent many years volunteering his time on its board.

ALCOCK, Olive Elizabeth
(nee Okeson) December 26,
1930 - December 23, 2010
While vacationing in Mex-
ico, Olive died in the arms
of her beloved husband, Val.
She was predeceased by her
mother Mary and step-father
Victor Hemmingsen. Born
in Edmonton, Alberta, Olive
lived the majority of her life
in British Columbia having
grown up in Ucluelet and
Port Alberni. It was in Port Al-



Olive Alcock

berni that Olive met and married her husband Rodney (Val) Alcock, beginning a life of love and adventure. She loved traveling with Val, exploring over 13 countries. At age 32 she traveled from Prince Rupert to Alaska by boat and again at age 77. They conquered the entire state of Alaska in their Volkswagon “Hip-pie” Vanagon. Olive’s passion was the family’s genealogy, exploring the many family lines of both Val and herself. Olive loved to entertain her family and friends making each gathering a unique and first class experience. She had a myriad of interests including cuisine, heritage and the Arts. Olive will be sadly missed and long remembered by those who knew and love her. She is survived by her husband of 61 years, Val, her children Bud (Stephanie) Alcock, Sherri (David) Marks, nine grandchildren and nine great-grandchildren. Olive was also a former ED of the BCSGA.

And a new birth - Baby Lia

She was born on January 1, 2011 at 12:12 in the morning, making her the first baby born in Central New York (she was born in Syracuse, NY).

“I hope she will grow up to love the ocean as much as Chris and I do, and to eat lots and lots of delicious shellfish (of course, BC’s will be the favourite ones!), but above all I hope she continues to be as healthy as she has been so far.”

Lia’s mom, Liliana Rodríguez Máynez is a shellfish and aquaculture specialist at the Burnaby Canadian Food Inspection Agency and a big advocate of BC shellfish!



From Shellfish to Cetaceans

submitted by Heather Lord, BC Cetacean Sightings Network, Vancouver Aquarium

From the rugged outer coast to sheltered inlets and island archipelagos, British Columbia's marine ecosystems support a rich diversity of marine life, including numerous species of whales, dolphins and porpoise. Many of these marine mammals spend most or all of their time in B.C. waters, including killer whales, Pacific white-sided dolphins, Dall's porpoises, harbour porpoises, and minke whales. Others, like humpback whales, grey whales and fin whales, migrate through our coastal waterways in the summer, sometimes lingering into the winter months.

Unfortunately, many cetacean species are still poorly understood. What is clear is that many species of whales and dolphins are threatened by human activities such as pollution, underwater noise and vessel traffic. In recent years, the threat posed by humans through entanglement in debris and fishing gear, ship strikes, vessel disturbance, and toxins are emerging as significant life-threatening issues for many of these animals. Twelve of the species or distinct populations of cetaceans and sea turtles in BC are listed as either Special Concern, threatened, or endangered by the Species at Risk Act.

The BC Cetacean Sightings Network (BCCSN) was established in 1999 by the Vancouver Aquarium in collaboration with Fisheries and Oceans Canada to help address some of the knowledge gaps in cetacean ecology. The sheer size of BC's coastline means it isn't feasible for scientists to regularly survey the entire area. Instead the BCCSN employs 'citizen science' to help collect data. A network of volunteer observers along the coast collect information on the

relative abundance and distribution of BC's whales, dolphins, porpoises, and more recently, sea turtles. So far the program has collected over 54,000 reports from all walks of coastal denizens: lighthouse keepers, boaters, fishermen, public servants, eco-tourism operators, and avid naturalists.

Members of the BC Shellfish Growers Association (BCSGA) are wide-ranging professionals who spend time on or near the water year-round. Because of this access to BC waters, the BCCSN would like to encourage members of the BCSGA to report any cetacean sightings. Network observers act as the eyes of the coast and enable the BCCSN to collect and com-



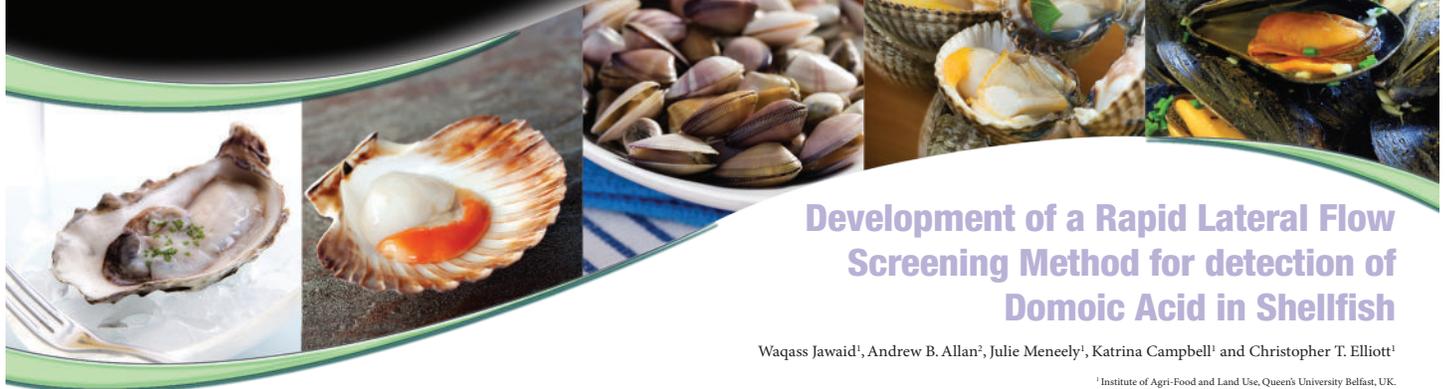
pile important information that wouldn't be available otherwise. In turn, cetacean populations in BC, many of which are listed under Canada's Species at Risk Act, can be better understood. By collecting data on when and where the animals have been seen the BCCSN

is able to look at conservation issues, such as areas of increased ship strike threat from large vessels. They also share their data with over a dozen other research and conservation projects each year, including recovery strategies developed by the government. By getting involved, BCSGA members will directly help cetacean research and conservation in BC.

For more information or to report a sighting visit www.wildwhales.org, call 1-866-I-SAW-ONE, or send an email to sightings@vanaqua.org. Logbooks are also available free of charge. To learn more about cetacean identification, check out the website wildwhales.org.

Aquaculture news, every day on the BCSGA website...

From Monday to Friday every week we post news items from around the globe that are relevant to the aquaculture industry. Go to www.bcsqa.ca and follow the News Today header.



Development of a Rapid Lateral Flow Screening Method for detection of Domoic Acid in Shellfish

Waqass Jawaid¹, Andrew B. Allan², Julie Meneely¹, Katrina Campbell¹ and Christopher T. Elliott¹

¹ Institute of Agri-Food and Land Use, Queen's University Belfast, UK.
² Neogen Europe Ltd, Auchincruive, Ayr, Scotland, UK.

Summary

Reveal[®] ASP, a new lateral flow immunoassay system for the detection of the marine biotoxin domoic acid (DA) in shellfish extracts, has been developed through a knowledge transfer partnership (KTP) program. This involved a collaborative effort between Neogen Europe Ltd and the Institute of Agri-Food and Land Use (IAFLU) at Queen's University, Belfast.

The validation programme for Reveal[®] ASP has shown the kit to be highly effective for the qualitative screening of DA in a range of shellfish species comprising mussels, scallops, oysters, clams and cockles.

An important new product in the regulated seafood testing sector, Reveal[®] ASP proves to be a useful tool for the rapid and practical screening of DA.

Introduction

Global implications are associated with toxic blooms of amnesic shellfish poisoning (ASP) toxin-producing diatoms [Fig. 1].

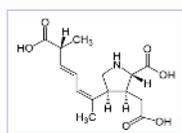


Fig. 2 - STRUCTURE OF DOMOIC ACID

The primary ASP toxin is domoic acid (DA) [Fig. 2].

Contamination of seafood can result in human and marine wildlife mortality.

The clinical toxicological effects attributed to DA can include:

permanent loss of short-term memory, gastro-intestinal distress, nausea, vomiting, headache, disorientation,

loss of balance, seizures and (in severe cases) death. [Kathi A. Lefebvre and Alison Robertson, 2010. Domoic acid and human exposure risks: A review. *Toxicol* 56, 218-230].

Many countries have currently established a maximum permitted level (MPL) of 20 mg DA per kg in whole shellfish (20 ppm).

Reveal[®] ASP has been optimized for visual detection at a cut-off value of approximately 10 ppm (i.e. half the MPL).

Reveal[®] ASP is validated for the qualitative screening of DA in shellfish and is designed for use by personnel with an interest in the rapid screening of shellfish samples.

Benefits

- Protection of shellfish consumers and growing food industry
- Early warning detection system for shellfish producers
- Key Advantages of Reveal[®] ASP**
- Single-step assay
- No buffers required - extract and run using distilled water alone
- Simple sample preparation
- Negligible matrix effects
- Practical assay - no specialist laboratory equipment required
- Rapid analysis
- Versatile
- High sensitivity
- High reproducibility and robustness



Fig. 1 - ALGAL BLOOM
(photo credit: National Oceanic and Atmospheric Administration/Department of Commerce, Kai Schumann, California Department of Public Health)

Sample Extraction and Testing

1. 1 g sample + 20 mL distilled water (shake to mix) [Fig. 4]
2. Simple manual extraction using filter bags and roller. [Fig. 5]
3. 100 µL of sample extract + 20 mL distilled water (shake to mix)

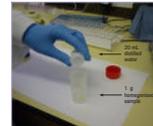


Fig. 4

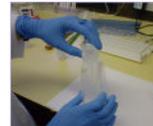


Fig. 5



Apply roller to aid the extraction procedure

Sample extract is now ready for testing

4. Place strip in 100 µL of the diluted sample extract. [Fig. 6]
5. After 10 minutes, visually interpret the result. [Fig. 7]

The appearance of a clear test line indicates a negative result (i.e. ≤ 10 ppm DA); whereas an absence or very faint test line indicates a positive (i.e. ≥ 10 ppm DA).



Fig. 6 - Strip placed in 100 µL of the diluted sample extract



Fig. 7 - Typical results from shellfish extracts

Results

Inter- and intra-laboratory evaluations demonstrate that DA can be detected at the intended levels from a variety of spiked and naturally contaminated shellfish matrices.

Independent assessment has been carried out at several laboratories using randomised-blind samples. All evaluators correctly identified samples as either positive or negative based on visual interpretation alone. [Table 1]

A total of 15 operators were involved in the validations, all with highly consistent results.

Reveal[®] ASP assay

Visual cut-off in shellfish: 10 ppm (i.e. 50% MPL)

Testing time:

Sample extraction (upon obtaining a homogenate): 10 minutes

Assay run time: 10 minutes

Table 1

| Sample | Domoic acid levels in samples | Expected Result (qualitative) | OBSERVED RESULTS (n=5) | | | |
|----------|-------------------------------|-------------------------------|------------------------|--|------------------|--------------------|
| | | | NEOGEN Europe Ltd | afbi Agri-Food and Biosciences Institute | Dr Greg Doucette | Dr Stacey DeGrasse |
| Sample 1 | 94 µg/g (> 450% MPL) | Positive | Positive | Positive | Positive | Positive |
| Sample 2 | < LOD of HPLC | Negative | Negative | Negative | Negative | Negative |
| Sample 3 | 10.3 µg/g (~ 50% MPL) | Positive | Positive | Positive | Positive | Positive |
| Sample 4 | 20.5 µg/g (~ 100% MPL) | Positive | Positive | Positive | Positive | Positive |
| Sample 5 | 1.2 µg/g (~ 6% MPL) | Negative | Negative | Negative | Negative | Negative |
| Sample 6 | 41 µg/g (~ 200% MPL) | Positive | Positive | Positive | Positive | Positive |

*either HPLC verified and/or certified reference materials

(Note: A total of 32 samples evaluated at AFBI)

Note: The evaluating organisations do not promote/endorse the test kits.

To place an order, or for more information, contact your local Neogen Europe representative, or visit our web site at www.neogeneurope.com

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NE600-1010



Threat of Herpes Virus being monitored

Threat of the herpes virus that has decimated the France oyster industry over the last few years is one of the major issues the BCSGA is monitoring. As part of our plan, we are in discussion with the CFIA and other government agencies working on ways to ensure our stock remains healthy and herpes free.

This is a serious threat that can have devastating effects on our industry in BC. This



UK containment area

herpes virus is now not only limited to France either. In December 2010 the virus was identified in New Zealand which in November and December of 2010 alone killed off half of their juvenile oysters. The virus has also been identified in Britain and Australia.

The BCSGA is committed to working with government and industry to ensure the safety of their stocks and the products they grow.

Classifieds

Great Business Opportunity!

Shellfish company with licence. This 15.7 hectare (38 acres +/-) approved for farming of Eastern Blue Mussels + Japanese Scallops as per the Aquaculture License included with the sale. This site is in a great location in Sutil Channel on the northern part of Cortes Island, and includes two bays with southern & western exposure. Call Discovery Islands Realty at **250-285-2800** for details or call the owner directly at **250-285-2583**! Reasonable offers considered.



www.bcsga.ca

Top producing Baynes Sound Leases for Sale

24.39 acres- good production: oysters, 5+ acres clam ground netted-high production, geoduck planted, plus deep-water sites.

12.75 acres – good production: oysters, 4 acres clam ground netted, seed with cultch for production over next 5 years.

8.4 acres – good production: oysters (singles), oyster cultch and clam ground in sheltered bay.

4.2 acres – production of clams, partly netted, oyster cultch and permitted to plant geoduck.

For more information contact: Larry -**250-478-3518** or **250-361-5755** or Mark - **250-757-9252**
summerbreezeaqua@shaw.ca

Keep on top of all the developments of the upcoming BC Shellfish by visiting

www.bcshellfishfestival.com

or our Facebook page at

www.facebook.com/BShellfishFestival

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BC Shellfish Growers Association

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What's the BCSGA been up to?

- **Nov. 16-19**, BCSGA ED R. Stevenson attended the CAIA AGM in Ottawa, ON.
- **Nov. 25**, BCSGA ED R. Stevenson and CM M. Wright attended a joint Coal Watch/ CEAA meeting to discuss the proposed coal mine, Fanny Bay, BC.
- **Jan. 14**, the BCSGA hosted a meeting with Coal Watch and an independent socio/economic research analyst, Comox, BC
- **Jan. 18**, BCSGA ED R. Stevenson attended a meeting at the Leg with Environment Minister M. Coell to discuss shellfish concerns about the proposed coal mine in Baynes Sound, Victoria, BC
- **Jan. 18**, CM M. Wright attended the funding announcement for dock upgrades at the Fanny Bay wharf, Fanny Bay, BC
- **Jan. 19**, BCSGA Board of Directors meeting, including delegates from both the DFO and province of BC to discuss new aquaculture regulations and requirements, Courtenay, BC
- **Jan 29**, CM M. Wright attended the Comox Valley Chamber of Commerce Business Awards where the BCSGA was a finalist in the Agriculture Business of the Year category, Courtenay, BC
- **Feb. 8**, CM M. Wright attended a Comox Valley visitors planning session, Courtenay, BC
- **Feb. 11**, ED R. Stevenson attended a BCARDC Steering Committee meeting, Nanaimo, BC
- **Feb. 15**, CM M. Wright attended the NAAHP (National Aquatic Animal Health Program) meeting, Nanaimo, BC

Upcoming Events

- **Feb 28- Mar.3**, Aquaculture America 2011, New Orleans, LA
- **March 16**, BCSGA Board Meeting, Comox, BC
- **March 20-22**, International Boston Seafood Show, Boston, MS
- **April 16**, BCSGA General Board Meeting, Lund, BC
- **May 18**, BCSGA Board Meeting, Comox, BC
- **May 27-29**, Lund Shellfish Festival, Lund, BC
- **June 15**, BCSGA Board of Directors meeting, Comox, BC
- **June 17-18**, BC Shellfish Festival, Comox, BC

Have an event you'd like listed?
Send it in to matt@bcsga.ca