Risk Management and Communication

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Communication
Public Website
www.bccdc.ca

Food safety information for Consumers (Public)

Guidelines for Industry and Inspection

Shellfish Advice for Consumers

Shellfish are animals living in the sea that have shells. Shellfish are generally edible but are not actually fish. Bivalve shellfish have two hinged shells and include oysters, clams, scallops, mussels and cockles.

- Place live shellfish on the lowest shelf in the refrigerator, and cover with a damp towel. Do not allow any juices or liquids to leak onto other food items.

- Store shucked shellfish (meaning without the shell) in a closed plastic or glass container, or a leak-proof bag.

FROZEN SHELLFISH

- For optimum quality, commercially frozen shellfish are best eaten in the fresher form.

Recommendations for purchasing shellfish

- Buy shellfish from trustworthy sources such as supermarkets, local fishmongers, or certified shellfish farmers.

Photo Source: BC Shellfish Growers Association

RETAIL LIVE FISH HOLDING TANKS

<table>
<thead>
<tr>
<th>Record Keeping Compliance</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Logs (i.e. cleaning, temperature checks, UV bulb)</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Product Invoices (1 year)</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Shellfish Tags (fresh, 1 year)</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Shellfish Tags (frozen, 2 year)</td>
<td>☐</td>
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<table>
<thead>
<tr>
<th>Holding Tank Components</th>
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<tbody>
<tr>
<td>Display Tank</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Free of foreign objects (claws, legs, etc.)</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Unpilled is primed</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Pumping System</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Temperature Control System (Refrigeration)</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
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</table>

http://www.bccdc.ca/foodhealth/fish/default.htm
http://www.bccdc.ca/foodhealth/fish/Provincial+Fish+Inspection.htm
Risk Messaging – Cadmium in Shellfish (Dec 2010)

Who identified: Association for Responsible Shellfish Farming

How it was received: Via web-site inquiry

Is it an issue? Yes

Other stakeholders? Yes

Risk messaging

“eating one BC oyster is equivalent to consuming 40 cigarettes in terms of cadmium absorbed”

Cadmium in BC Shellfish

What is cadmium?
Cadmium is a chemical element, commonly associated with rechargeable (ni-cad) batteries. It does not have any known function in human metabolism. Ingestion of cadmium over long periods of time may lead to kidney and bone problems.

Updated health concerns about cadmium
Cadmium reduces the kidney’s ability to absorb essential nutrients, such as calcium, glucose, and amino acids into the body. In particular, the loss of calcium can result in decreased bone strength. Cadmium exposure has also been linked to other health effects, including diabetes and high blood pressure, but the scientific evidence to support a relationship between cadmium and these health effects is not strong [6].

Levels of cadmium in BC shellfish
On land and in ocean waters, cadmium is found in varying amounts dependent on the local geology. Levels of cadmium tend to be higher in the Pacific Ocean than the Atlantic due to a “conveyor belt system” that deposits cadmium circulating in the world’s oceans into the northwest Pacific - located at the end of the “ocean conveyor belt” [7]. Man-made sources of cadmium in the environment derive from mining and agricultural activities [8-11]. Other than near to mines and waste disposal sites, natural sources (in particular, cadmium in soils and in ocean waters) are likely more important than man-made sources in determining levels of cadmium on land and in coastal waters.

There is a wide range of cadmium levels reported in oysters from the Pacific northwest. The amount of cadmium, reported as parts per million (ppm) wet weight in Pacific northwest oysters has been measured at between 1 and 4 ppm.

Generally, levels of cadmium are much lower in oysters elsewhere in the world.

Cadmium levels reported in oysters

<table>
<thead>
<tr>
<th>Location</th>
<th>Oyster Cadmium Levels</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska</td>
<td>Average: 0.2 ppm, Range: 0.1 to 0.3 ppm</td>
<td>[6]</td>
</tr>
<tr>
<td>BC</td>
<td>Average: 0.15 ppm, Range: 0.1 to 0.2 ppm</td>
<td>[7]</td>
</tr>
<tr>
<td>Oregon</td>
<td>Average: 0.05 ppm, Range: 0.02 to 0.08 ppm</td>
<td>[8]</td>
</tr>
<tr>
<td>Washington</td>
<td>Average: 0.02 ppm, Range: 0.01 to 0.03 ppm</td>
<td>[9]</td>
</tr>
<tr>
<td>Califorins</td>
<td>Average: 0.01 ppm, Range: 0.0 to 0.02 ppm</td>
<td>[10]</td>
</tr>
<tr>
<td>France</td>
<td>Average: 0.002 ppm, Range: 0.001 to 0.003 ppm</td>
<td>[11]</td>
</tr>
<tr>
<td>England</td>
<td>Average: 0.005 ppm, Range: 0.004 to 0.006 ppm</td>
<td>[12]</td>
</tr>
</tbody>
</table>

Safe consumption of BC oysters and scallops for the general population
Surveys of BC shellfish have shown that only oysters and scallops have higher than expected levels of cadmium—most clams and mussels surveyed have low cadmium levels [13]. Scallop is a problem when consumed whole. The more commonly consumed adductor muscle (the fleshy part of the scallop) is low in cadmium [14].

Not all of the cadmium you ingest is absorbed into your body. Recent scientific studies show that cadmium absorption varies widely between people [15, 16]. As the effects of cadmium on health relate to long-term exposure, clear hazard levels are hard to define. Recently, international authorities have recommended that exposure to cadmium from all sources (such as cigarettes, as well as oysters and scallops) be lowered in order to better protect the health of the public [17].

The current Health Canada policy [18] on cadmium in BC oysters is to reduce risk by limiting consumption: for adults, Health Canada recommends a maximum of 12 oysters per month and for children, no more than 1½ oysters per month.

http://www.bccdc.ca/foodhealth/fish/default.htm
Risk Messaging
Botulism in home-prepared foods (Oct 2012)

Who identified:
Department of Fisheries and Oceans

How it was received:
Phone call, in preparation for court case

Is it an issue?
Yes

Other stakeholders?
Yes

Risk messaging
Fish products and home prepared canned products are higher risk.

http://www.bccdc.ca/foodhealth/fish/default.htm
**Risk Messaging – Public Health Practitioners**

**Who generates this data:**
CFIA & DFO (official site)

**Who receives this data:**
Industry, Federal shellfish plants, DFO, BCCDC-EH

**What can this data can tell us?**
Increases of marine toxins in shellfish

**What this data DOES NOT tell us....**
That there will be an increase in shellfish related illness

That these shellfish are commercially sold (they are not)

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**Coastwide Martox**

*Unofficial Results for September 24, 2012:*

<table>
<thead>
<tr>
<th>Area</th>
<th>Sub-area</th>
<th>Location</th>
<th>Species</th>
<th>PSP ug/100g</th>
<th>DA ppm</th>
<th>Date of Harvest (mm/dd/yy)</th>
<th>Inspection No.</th>
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<tbody>
<tr>
<td>15</td>
<td>5</td>
<td>REDONDA BAY</td>
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<td>MALISOPE INLET</td>
<td>F SEA MUSSELS</td>
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<td>ND</td>
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</table>

**Question to Public Health Practitioners**

*(Environmental Health Officers, Medical Health Officers)*

Do you want to know when marine toxins *(or Vibrio parahaemolytic)* levels increase?

When and under what conditions do you want to know?