

# Shellfish harvesting process from farm to retail. Regulatory oversight and industry procedures (page 1 of 2)

	Harvest	Loading	Transport to Federally Registered Processor	Shellfish Processing																				
<b>Routine role/process</b>	<p><b>DFO:</b> shellfish aquaculture site licensing and communication with all licenced leaseholders.</p> <p><b>FLNRO:</b> BC government shellfish tenure licensing to generate land-file (lease holder) numbers</p> <p><b>EC:</b> water classification for shellfish harvest area</p>		<p><b>DFO:</b> <i>Pacific Aquaculture Regulations</i>. See detail below. No shellfish shall remain untagged during transport to market (condition of licence).</p>	<p><b>CFIA:</b> verify processors have controls to ensure acceptability of incoming shellfish (e.g. <i>Vibrio parahaemolyticus</i>)</p> <p><b>CFIA:</b> responsible for auditing each processor, at minimum, 1 time/year. Responsible for reviewing QMP plans to ensure they are implemented and reducing risk. (per Facilities Inspection Manual, Ch 3, Subject 3)(a). QMP should have Vp control requirements, that include control for harvest, transport to plant, processing, storage. See App. H and K in QMP guidelines.</p> <p><b>Shellfish processor:</b> must notify CFIA if 5 sample lot testing does not meet standard. One, but not more than one, sample of &gt;100 MPN/g is allowed in the sub-units. Any single sample exceeding 10,000 MPN/g renders the lot unacceptable. (HC: Apr 2008)</p> <table border="1"> <thead> <tr> <th rowspan="2">FOOD CATEGORY</th> <th rowspan="2">METHOD OR EQUIVALENT</th> <th rowspan="2">GUIDELINE</th> <th rowspan="2">NATURE OF CONCERN (Health Risk (HR))</th> <th colspan="4">SAMPLING PARAMETERS</th> </tr> <tr> <th>n</th> <th>c</th> <th>m</th> <th>M</th> </tr> </thead> <tbody> <tr> <td>Raw Oyster</td> <td>MFLP-37</td> <td><i>Vibrio parahaemolyticus</i> at retail</td> <td>HR 2</td> <td>5</td> <td>1</td> <td>10*2</td> <td>10*4</td> </tr> </tbody> </table>	FOOD CATEGORY	METHOD OR EQUIVALENT	GUIDELINE	NATURE OF CONCERN (Health Risk (HR))	SAMPLING PARAMETERS				n	c	m	M	Raw Oyster	MFLP-37	<i>Vibrio parahaemolyticus</i> at retail	HR 2	5	1	10*2	10*4
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<b>2015 outbreak additional regulatory role/process</b>	<p><b>DFO:</b> communicated to license holders and shellfish industry on outbreak, sent notifications using the Fishery Notification System, posted information to website.</p> <p>Provide information to Outbreak Investigation Coordinating Committee (OICC) on volumes of oysters harvested, water temperature and other harvest practices for specific lease areas.</p>			<p><b>CFIA:</b> Communication with processors on human illness and HC interim guidance and Aug 18 recall.</p> <p>Worked with processors to implement HC interim guidance.</p> <p>Would take action on unsatisfactory results for products still in the marketplace (would require a health risk assessment).</p> <p>Shellfish processor: Must test each lot (finished product) and ensure all sub-samples are &lt;100 MPN/g. All results must be shared with CFIA.</p> <p>HC interim guideline: must notify CFIA of all results. No sub-samples may exceed 100 MPN/g of Vp. Each lot must be tested, held, and shown to meet this standard prior to release to market.(b)</p> <p><b>Bacteriological guideline (end-product) for Vp</b></p> <table border="1"> <thead> <tr> <th>Test Organism</th> <th>Product Type</th> <th>Number of sample units</th> <th>Acceptance number (c)</th> <th>n/g</th> <th>M/g</th> <th>Criteria for action</th> </tr> </thead> <tbody> <tr> <td><i>Vibrio parahaemolyticus</i></td> <td>Raw Oyster</td> <td>5</td> <td>0</td> <td>100</td> <td>n/a</td> <td>Reject if any unit is equal to or exceeds m</td> </tr> </tbody> </table> <p>Measures will be lifted when the following criteria have been met:</p> <ol style="list-style-type: none"> <li>The outbreak has been declared over by the OICC, and;</li> <li>When a sufficient period has elapsed outside of the high risk periods, identified in the Vp RRS, where the water or oyster temperatures have consistently demonstrated to be below 15°C and environmental Vp levels are shown to be &lt;3 MPN/g for at least two consecutive weeks.</li> </ol>	Test Organism	Product Type	Number of sample units	Acceptance number (c)	n/g	M/g	Criteria for action	<i>Vibrio parahaemolyticus</i>	Raw Oyster	5	0	100	n/a	Reject if any unit is equal to or exceeds m						
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<b>Regulation covering process</b>	<p><b>DFO: Pacific Aquaculture Regulations</b> condition of licence</p> <p>Prior to leaving the licensed area, all containers holding shellfish that are destined for market sale shall be marked with a visible tag identifying the following: (i) Licence Holder Name; (ii) Species; (iii) Pacific Fishery Management Area; (iv) Land File Number; (v) Date of Harvest; and (vi) Facility Reference Number.</p> <p>The licence holder shall record, within 24 hours, the importation or transfer of shellfish to the licensed area, the transfer of shellfish from the licensed area and harvest for market sale. Records shall include shellfish wet stored at the licensed area(s) from other locations prior to market sale.</p> <p>The licence holder shall record:</p> <ol style="list-style-type: none"> <li>Aquaculture Licence Number(s), Facility Reference Numbers, or groups of Aquaculture Licence or Facility Reference Numbers associated with the licence holder for sites in the same Pacific Fishery Management Area;</li> <li>Activity date; (c) Species common name;</li> <li>The nature of the activity (i.e. Activity Code (IP - Importation) (TS - Transfer) (H - Harvest for Market Sale));</li> <li>Number of containers; (f) Container type;</li> <li>Average container weight, OR total estimated weight OR, estimated number of individuals;</li> <li>Source of shellfish arriving at the site (source licence number, or other); and (i) Destination of shellfish leaving the site (destination site licence number, shellfish buyer, or market sale processor).</li> </ol> <p><b>The CSSP isn't a regulation – it consolidates regulatory information and outlines policy. Shellfish processors must implement requirements in the CSSP (FIR 15 (8))</b></p> <p><b>CSSP 4.4.</b> Label must include harvester's name, harvest location, date of harvest, common name and quantity of shellfish.</p>		<p><b>DFO: Pacific Aquaculture Regulations.</b> Condition of licence, the licence holder shall land all harvested bivalves at a federally registered processing plant prior to sale for human consumption.</p> <p><b>CSSP 4.2.</b> Water used for washing shellstock shall be obtained from an approved shellfish area, or from other safe sources approved by the CFIA</p> <p><b>CSSP 4.6.</b> "Temperature shall be controlled during transport when ambient air temp and time of travel are such that unacceptable bacterial growth or deterioration may occur"</p> <p><b>CFIA: Federal Fish Inspection Regulations. FIR Sch II 16.1</b> Fish must be kept iced or chilled before processing at an establishment.</p> <p><b>BC Ministry of Agriculture: Provincial Fish Inspection Regulations. S.54</b> (Apply to harvest and through to processor, NOT to distributor or retail). Before removing from harvest site molluscs must be placed into containers and a tag affixed to each container. Tag info: name of harvester, species of mollusc, area/sub-area as set by DFO, date of harvest, lease or licence number. The receiver (processor) of the molluscs must ensure that tag information if recorded &amp; retained for at least one year.</p>	<p><b>CSSP 7.3:</b> A durable, waterproof tag must be affixed to each container (package) destined for sale.</p> <p>For non-retail packages: date of processing, site, registration number of processor and name and address of responsible party for distribution, type and quantity of shellstock, depuration and relay info as applicable.</p> <p>For retail packages for sale in Canada: date of processing, best before date or harvest date and the statement "keep refrigerated", harvest site, registration number of processor and name and address of responsible party for distribution, type and quantity of shellstock, depuration and relay information.</p> <p><b>CSSP 7.2.</b> Shellstock in storage must be held between -1 and 4°C</p> <p><b>CFIA: Federal Fish Inspection Regulations. FIR 15.1</b> processors are registered</p> <p><b>FIR 15.8</b> processors are compliant with CSSP</p> <p><b>FIR ar II, 26.1.f</b> Containers must be marked to indicate the date of processing and the location from which they were harvested</p> <p><b>BC Min. of Agriculture: FIR 12.3, 14.d and FIR 54.2.b.i</b> shellfish processors are provincially licenced and all bivalves must first pass through a federally registered establishment prior to being sold.</p>																				
<b>Industry process</b>	<p><b>Shellfish farm:</b></p> <p>Indicator sampling: a single pre-harvest oyster meat sample is tested for Vp, either prior to harvest, or simultaneously with harvest (more sub-samples may be tested).</p> <p>Harvest: from raft (oysters suspended on long-lines); from beach; from raft to beach (hardening of oyster shell). Deep-water submersion before harvesting is one method; cold tank storage with deep line water occurs with one farm.</p> <p>Washing: at harvest/beach area, or with approved water at registered facility (CSSP 4.2)</p>	<p><b>Temp control methods:</b></p> <p>Ice totes may be brought to harvest site by some leaseholders, product is layered in ice for transport to the dock.</p> <p>Previous CFIA control guidance may be followed:</p> <p>Water temp&gt;15°C, 1 hr to place product under temp control.</p> <p>Water temp&lt;15°C, 4 hr to place product under temp control.</p>	<p><b>Trucking companies:</b></p> <p>Some trucks have temperature data-loggers &amp;/or drivers who monitor temperature during delivery</p> <p>HACCP certification of trucking companies (e.g., Cold Star Freight)</p>	<p><b>Shellfish processor:</b> follow FIR, FIM, QMP reference standard &amp; CSSP.</p> <ol style="list-style-type: none"> <li>Oysters are checked they are from an open and approved harvest site</li> <li>Sensory assessment is performed.</li> <li>Oysters may be washed</li> <li>Oysters are tagged for identification</li> <li>Oysters are refrigerated (note: processing of oysters is done in small batches, oysters are maintained under refrigeration.</li> <li>Subunits (n=5) of 10 to 12 oysters (per subunit) per harvest day lot samples are taken for verification testing.</li> </ol> <p><b>For Vp, processors additionally:</b></p> <ol style="list-style-type: none"> <li>Evaluate Vp levels at harvest are low enough</li> <li>Evaluate harvest &amp; transportation conditions met time/temp controls</li> <li>Implement time/temp controls for Vp</li> <li>Implement interim Vp guidelines</li> </ol> <p>Other processes not described here: wet storage (up to 60 days) (CSSP 5); shucking, heat shock, cool, repacking (CSSP 6)</p>																				

(a). <http://www.inspection.gc.ca/food/fish-and-seafood/manuals/facilities-inspection-manual/eng/1354209008142/1354209083903>  
 (b). <http://www.inspection.gc.ca/food/fish-and-seafood/communiqués/2015-08-21/eng/1440167294856/1440167295700>

**Shellfish harvesting process from farm to retail. Regulatory oversight and industry procedures (page 2 of 2)**

Transport to Distribution Chain		Shellfish Distributors	Retail / Restaurant	Human exposure & Illness Reports
<b>Routine regulatory role/process</b>	<p><b>CFIA:</b> reviews processor QMP for loading at appropriate temperature.</p>	<p><b>BC Min. of Agriculture:</b> If a distributor is provincially licensed as a processor, the facility is subject to constructional and operational inspections. For e.g., inspect shellfish holding, verify water quality, species held, source of shellfish from federally registered establishments.</p> <p><b>Local HA:</b> During complaint investigations, review &amp;/or inspect distributors temperature logs and control.</p>	<p><b>Local HA:</b> Inspection of all facilities identified during illness investigations with focus on food safety and temp controls.</p> <p>Annual inspections occur based on risk, at least once/yr and usually 3X/year. Evaluation of food safety and sanitation plans, observations during inspection. Posting of risk rating and inspection results on public web-site.</p>	<p><b>Local HA</b> responsible for case investigation and sending forms/tags to BCCDC and CFIA</p> <p><b>BCCDC:</b> Responsible for reviewing submitted forms for cluster or common associations in time/place</p> <p><b>CFIA:</b> responsible for traceback for every tag provided by local HA and follow up with processors identified.</p>
<b>2015 outbreak additional regulatory role/process</b>			<p><b>Local HA:</b> Distribution of education materials re: temp control.</p> <p>Distribution of warning to avoid consumption of raw BC oysters to restaurants/retailers.</p> <p>Implementation of order in VCH to ban sales of raw oysters</p>	<p><b>BCCDC:</b> Review of available tag information, coordinate provincial response, national OICC liaison, engage BCSGA to share data</p>
<b>Regulation covering process</b>	<p><b>CSSP 7.2.</b> no specific time/temp requirements in Canada. "Shellstock shall be transported in adequately refrigerated vehicles when the shellstock have been previously refrigerated or when ambient temperatures are such that unacceptable bacterial growth or deterioration may occur."</p> <p>Shipments destined for US; is shipping time is &gt;4hr, mechanically refrigerated vehicles maintaining &lt;7.2°C must be used; a time temp recording device must accompany shipment. If shipping time is &lt;4 hr, icing is acceptable.</p> <p>Conveyances used to transport shellstock shall be constructed, maintained and cleaned in accordance with the requirements of Schedule V of the Fish Inspection Regulations (FIR).</p>	<p><b>CSSP 7.2.</b> shellstock in storage shall be protected from contamination and maintained at temperatures between -1°C and 4°C (applies to distributors who are also federally registered fish processing establishments)</p> <p><b>CSSP 8.3 e.</b> Repackaged shellstock shall be labelled in the same manner as shellstock was initially packaged.</p> <p><b>BC Ministry of Agriculture: FIR 14 (d)</b> shellfish distributors who meet the definition of processing require a processing licence.</p> <p><b>FIR S. 53.</b> Condition of oysters and clams Oysters and clams in the shell shall be alive, undamaged and free from mussels, limpets, stones, excess mud and other extraneous material.</p>	<p><b>BC Food Premises Regulations:</b> <b>S. 14.</b> PHF food is stored at &lt;4°C <b>S. 23/24</b> requirement for food safety and sanitation plan</p> <p><b>National Food Retail and Food Services Code 3.2.2.2</b> Invoices, receipts, and lot coding information should be retained, to allow tracking of unlabelled products (such as carcasses, produce or bakery products) or split lots. Seafood tags should be retained for a minimum of 90 days after use.</p> <p><b>BCCDC</b> educational documents for restaurants and retailers</p>	<p><b>FRFSC:</b> retain tags for 90 days (per previous box)</p> <p><b>BCCDC:</b> recommendation in educational notices is to retain tags for 3 months</p>
<b>Industry process</b>	<p><b>Trucking companies:</b> Some trucks have temperature data-loggers &amp;/or drivers who monitor temperature during delivery HACCP certification of trucking companies (e.g., Cold Star Freight)</p>	<p><b>Distributor (Processor):</b> Verify farms are SQA via inspections 1-2X/yr (in person or 3<sup>rd</sup> party audit) Establish cold chain of custody for transport from farm to processor/distributor Provide potable ice/ ice packs for delivery to retail/restaurant Maintain premise interior below 4°C Delivery trucks have data logger and records Maintain temp control logs</p>	<p><b>Retail/restaurant:</b> Keep all PHF foods ≤4°C Keep shellfish tags/invoices for a minimum of 90 days Maintain temp control logs for refrigerated equipment Follow food safety plan for oysters for raw consumption In VCH: warnings on either menus or tables</p>	<p><b>Retail/restaurant:</b> Track and report illnesses to Health Authority for follow-up</p>