

Bivalve Shellfish – Harvesters & Retailers, Play It Safe!

Oysters, clams, mussels, and other bivalve molluscs are unique foods which have been enjoyed by consumers for many years. Generally, bivalves are a wholesome product and when certain basic rules are followed they can be safely consumed.

All bivalve molluscs have a shell that consists of two valves hinged at one side. They are filter feeders, which means they filter out algae, plankton, and organic material from the water and use it as food. As they feed, however, they are able to concentrate the various bacteria, viruses and/or toxins that may be in the growing water.

Specific Hazards

There is a long list of bacterial and viral agents associated with shellfish: *Vibrio parahaemolyticus*, and Hepatitis A to name a few. Some of these organisms occur naturally and may be found in abundance in BC marine waters, especially during the warmer months. Others, such as Hepatitis A, occur in waters polluted by sewage.

Paralytic shellfish poisoning (PSP) is caused by the consumption of bivalve shellfish that have been contaminated with the organisms that cause "red tide". It is characterized at the onset by numbness and tingling around the mouth and may progress to paralysis and even death. The symptoms are caused by a toxin that may be retained in some species of clams for as long as two years. Cooking does not destroy this toxin. Hence, illnesses may occur even in the cold months.

Regulatory Controls

The Canadian Shellfish Sanitation Program is a program jointly conducted by Environment Canada, the Canadian Food Inspection Agency (CFIA), and the Department of Fisheries and Oceans. The program is designed to ensure that all shellfish growing areas meet approved federal water quality criteria, and all bivalve shellfish sold commercially are harvested, transported, and processed in an approved manner

Growing areas where shellfish have been determined to be unsafe (due to bacteriological or PSP contamination) are closed by regulation under the *Fisheries Act*. [Information on these closures](#) can be obtained by contacting the local [Department of Fisheries and Oceans](#) office or by calling 604-666-2828 in Vancouver, or toll-free 1-866-431-3474 (24 hours).

Shellfish harvesters should be aware that not all red tides are red. Indeed, the bivalve may become toxic long before any colour change in the water can be noticed by the human eye. It is also important to note that contaminated shellfish (whether bacteriological, viral or by toxins) may not differ in smell, appearance, or taste from uncontaminated shellfish. Shellfish harvesters should keep harvested shellfish cool to prevent growth of naturally occurring bacteria such as *Vibrio*. It is recommended to harvest beach bug shellfish on a receding tide, so shellfish are not exposed to warmer ambient air temperatures.

[Section 12.1 of the BC Fish Inspection Regulations](#) requires that all commercially harvested bivalves are processed at a federally registered fish plant prior to their sale. [Section 54 of the BC Fish Inspection Regulations](#) requires shellfish tags – **this information must be affixed by the harvester and stays with the shellfish to retail**. The retailer is required to keep the shellfish tags available with receipts for a period of one year. All companies and individuals throughout the distribution system, including retailers and restaurateurs, have a responsibility to ensure that only legally processed shellfish are used in their operation.

Bivalves shucked in BC are sold in containers that are identified with the product name, plant name, registration number, positively sealed, and date of packaging. It is also a requirement under the *BC Fish Inspection Regulations* that these containers are sold intact and are not displayed for bulk sales. During *Vibrio* season shucked oysters in tubs are also required to have a cook advisory label on the container.

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Bivalves sold in the shell require an identification tag (area and date of harvest and name of harvester) as they leave the beach. This information must remain with the product as it is distributed throughout the wholesale and retail system. Tag identification is the most evident safety verification available to the retailer or restaurant operator. If a sack of shellfish is broken into smaller quantities the accompanying invoice must make reference to the original tag.

Commercial harvesting of bivalve shellfish from closed areas is a serious contravention of Federal and Provincial regulations, and could pose a serious health risk, including death, to consumers. The potential liabilities for those selling illegally harvested bivalves far overrides the immediate financial gains that may be had.

Recommendations

1. Shellfish should only be purchased from reputable distributors who are established in the seafood business. Shellstock must never be received unless accompanied with a fully completed tag or other reliable evidence that they have been processed at a federal plant. Tag information must be retained for a minimum of 1 year.
2. During transportation, storage, and display, bivalves must be protected from contamination and maintained at refrigerated temperatures. Product must be checked for identification and obvious abuses when received. Suspect product must not be accepted.
3. Purchase BC shucked bivalves only in fully labelled containers.
4. When *Live Holding Tanks* are used to store or display bivalves, they should be designed, constructed, and maintained such that the water quality will not cause product contamination. Use of refrigerated water, effective filters, water disinfection devices, and avoid mixing with other species of fish are all important safety controls. Consult the [Live Retail Fish Holding Guidelines](#).
5. Check about area closures with the Department of Fisheries and Oceans prior to recreational digging for bivalves.

6. Suspected irregularities should be reported to Local Health Authorities.
7. Eating raw oysters or other uncooked shellfish such as clams or mussels will always be more risky than eating these products cooked. Bacterial and viral infections can be avoided by thoroughly cooking the shellfish to an internal temperature of 90°C for 90 seconds. The following instructions should be followed for cooking bivalve shellfish (clams, mussels and oysters):
 - Boil: add shellfish in the shell to water that is already boiling. Boil for 3 to 5 minutes after the shells are open.
 - Steam: for 4 to 9 minutes. Throw out any shellfish with unopened shells.
 - Fry: for at least 3 minutes at 190°C (375°F).
 - Bake: for at least 10 minutes at 230°C (450°F).

***For further information
please contact your Fish
Safety Officer (604.707.2458)
or your local Health Region***

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