

Is Wet Storage of Imported Ready-to-eat Oyster appropriate ? 以水存養進口生蠔是否適當？

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Food Incidents related to Oysters

與生蠔有關的食物事故



- In **September** and early **October, 2021**, the CFS was notified by the Centre for Health Protection (CHP) of the Department of Health of suspected food poisoning cases after consumption of raw oysters in restaurants in Tsim Sha Tsui East.
- One special issue noted during the investigation is that the importer has pooled the imported ready-to-eat oysters from various sources into a saltwater tank. With the intention of extending shelf-life of the shellfish, the temporary storage method may otherwise pose additional food safety risks to consumers.

(在本年9月及10月份，於調查有關由未經烹煮的蠔所導致的食物中毒個案期間，食物安全中心注意到，有些進口商把待售的進口(可不經烹煮而食用的)生蠔重新浸入鹹水缸中存養。雖然原意是為了延長蠔 的保質期，但這種暫存的方法卻有機會對消費者構成額外的食物安全風險。)

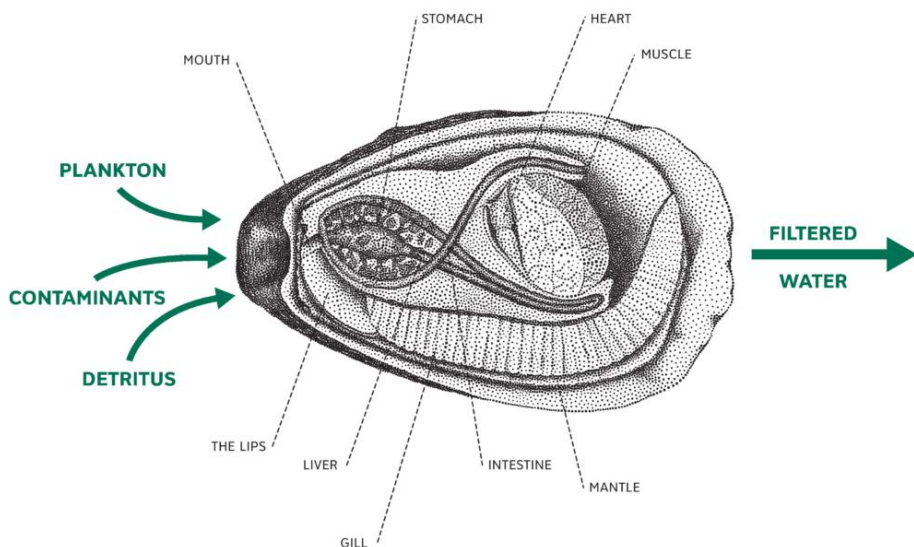


Oyster as a Filter Feeder

生蠔－濾食性動物



- Being a filter feeder, oysters can filter litres of water hourly.
(蠔是濾食性動物，每小時可過濾數公升的水。)



Adopted from <https://99percentinvisible.org/episode/oyster-tecture/>



Adopted from <https://www.afoodieworld.com/foods-future-summit/oysters-sos-bringing-the-nyc-billion-oyster-project-to-hong-kong>

Oyster with Inherit Risk

生蠔的固有風險



- During feeding, both suspended food particles and disease-causing microorganisms, such as bacteria (e.g. *Vibrio parahaemolyticus* and *Vibrio vulnificus*) and viruses (e.g. norovirus and Hepatitis A virus) from the seawater, are collected and concentrated inside the organism.

(在濾食過程中，蠔隻體內吸收在海水中懸浮的食物粒子，但同時也會積聚致病微生物，例如細菌(例子：副溶血性弧菌和創傷弧菌)及病毒(例子：諾如病毒和甲型肝炎病毒)。)

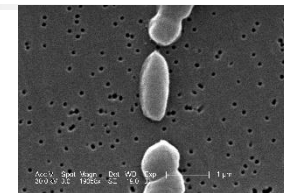
- As such, consuming oysters raw without thorough cooking might risk direct intake of these microorganisms. In terms of food safety, eating raw oysters is not recommended, particularly for susceptible individuals.

(因此，進食未經徹底煮熟的生蠔可能會有直接攝入這些微生物的風險。從食物安全的角度而言，我們不建議進食生蠔，特別是高危人士。)

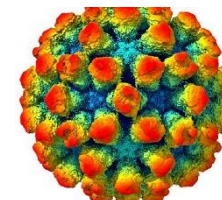
Pathogen / Harmful substances

病原體 / 有害物質

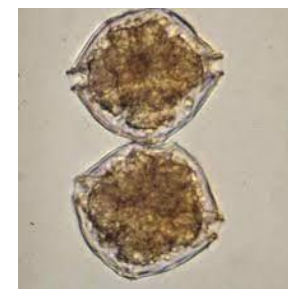
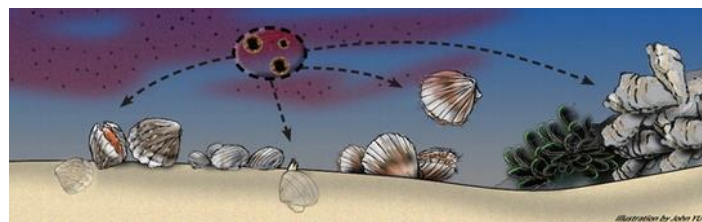
- *Bacteria - Vibrio spp. (e.g. Vibrio parahaemolyticus)*
(副溶血性弧菌)



- viruses (e.g. Norovirus and Hepatitis A virus)
(諾如病毒和甲型肝炎病毒)



- Marine biotoxins (e.g. Paralytic Shellfish Poisoning (PSP) toxins)
(麻痺性貝類毒素)



Alexandrium spp. (dinoflagellate)

Example of Health Certificate – USA

		For Office Use Only Tracking Number: <u>23190206</u>									
STATE OF WASHINGTON DEPARTMENT OF HEALTH OFFICE OF SHELLFISH AND WATER PROTECTION PO Box 47824, Olympia, Washington 98504-7824 (360)236-3330 TDD Relay Services 1-800-833-6388											
STATEMENT OF LICENSURE AND CERTIFICATION											
Exported By: HONG KONG SHELLFISH CO., LTD. 100, QUEEN'S ROAD, HONG KONG HONG KONG	Cert#: WA-0000-SS	Consigned to: The Honorable Governor of Washington 1000 First Avenue, Seattle, WA 98101 Washington, D.C.	Final Destination: Hong Kong								
Shipped Via: Air	Port of Embarkation: Seattle	Port of Debarcation: Hong Kong									
Identifying Marks: LIVE SHELLFISH - PERISHABLE - KEEP IN COOLER	Total Containers: 10 CASES	Total Marked Weight: 232.0 KG									
<table border="1"> <thead> <tr> <th>Product</th> <th>Class, Type, Style</th> <th>Count/Lot Weight</th> <th>Labels/Brand</th> </tr> </thead> <tbody> <tr> <td>Pacific Oyster</td> <td>Live</td> <td>10 CS 232.0 KG</td> <td></td> </tr> </tbody> </table>	Product	Class, Type, Style	Count/Lot Weight	Labels/Brand	Pacific Oyster	Live	10 CS 232.0 KG		The above named exporter hereby certifies through its undersigned authorized agent that this product was harvested from the following growing area(s) which was/were open for commercial harvest on the date(s) indicated and that the product has been treated with chemical preservatives or other additives injurious to health.		
Product	Class, Type, Style	Count/Lot Weight	Labels/Brand								
Pacific Oyster	Live	10 CS 232.0 KG									
<table border="1"> <thead> <tr> <th>Product</th> <th>Growing Area</th> <th>Harvester Cert#</th> <th>Date of Harvest</th> </tr> </thead> <tbody> <tr> <td>Pacific Oyster</td> <td>Penn Cove</td> <td>WA-0000-SS</td> <td>02/18/2016</td> </tr> </tbody> </table>	Product	Growing Area	Harvester Cert#	Date of Harvest	Pacific Oyster	Penn Cove	WA-0000-SS	02/18/2016	SIGNATURE OF AUTHORIZED AGENT: <u>[Signature]</u> DATE: <u>2-19-2016</u> (Must be signed by Authorized Agent on or after date of harvest.)		
Product	Growing Area	Harvester Cert#	Date of Harvest								
Pacific Oyster	Penn Cove	WA-0000-SS	02/18/2016								
The Facility/License named herein has been inspected by the Washington Department of Health and found to be in compliance with the laws of the State of Washington and with national guidelines established by the US Food and Drug Administration to assure that shellfish products are handled in a sanitary and hygienic manner. Goods processed by this Facility/License are a product of USA and safe for human consumption.											

The products do not contain harmful levels of heavy metals in accordance with international standards.

Live bivalve molluscan shellfish do not contain harmful levels of marine biotoxins in accordance with international standards.

The products do not contain harmful levels of bacteria in accordance with international standards.

All used certificates must be kept on file in the company's records for three years. Any certificate(s) not used must be marked "Void - did not ship" and kept on file in the export company's records for three years.

Example of Health Certificate – FRANCE

衛生証書例子- 法國

Original ☒ Duplicate ☐ Nombre total de duplicatas délivrés / Total number of copies issued Certificat n° / Certificate n°: 0000000000 Ministère de l'Agriculture, de l'Alimentation, de la Pêche, de la Ruralité et de l'Aménagement du Territoire CERTIFICAT SANITAIRE POUR L'EXPORTATION DE PRODUITS DE LA PÊCHE DE FRANCE VERS HONG KONG HEALTH CERTIFICATE FOR AQUATIC PRODUCTS INTENDED FOR EXPORT FROM FRANCE TO HONG KONG Pays exportateur / Country of dispatch: FRANCE Autorité compétente ⁽¹⁾ / Competent authority ⁽¹⁾: Direction Générale de l'Alimentation / General Directorate for Food I. IDENTIFICATION DES PRODUITS DE LA PÊCHE / DETAILS IDENTIFYING THE AQUATIC PRODUCTS Produit / Commodity name: Huîtres creuses - gigas oysters - flat oysters Espèce (dénomination scientifique) / Species (scientific name): Crassostrea gigas - Ostrea edulis Lieu d'origine / Place of origin: [redacted] Aire de capture / Catch Area: [redacted] Sauvage ou d'aquaculture / wild or aquaculture: Sauvage - aquaculture - wild - aquaculture Présentation ⁽²⁾ ou type de traitement ⁽³⁾ / State ⁽²⁾ or type of processing ⁽³⁾: animaux vivants - alive animals Type d'emballage / Type of packaging: [redacted] Nombre de colis / Number of packages: 5 Poids net / Net weight: 32 kg	Original ☒ Duplicate ☐ Certificat n° / Certificate n°: 0000000000 IV. ATTESTATION SANITAIRE / HEALTH ATTESTATION Je soussigné, vétérinaire officiel, certifie que / The undersigned, official inspector, hereby certifies that - Les produits de la pêche décrits ci-dessus proviennent d'établissements agréés par l'autorité compétente ; / The above aquatic products come from the establishment approved by the competent authority; - Les produits ont été manipulés, préparés ou produits, conditionnés, entreposés et transportés dans des conditions sanitaires appropriées, sous la supervision de l'autorité compétente, dans le respect des dispositions du code d'usage pour les poissons et les produits de la pêche du Codex alimentarius / The aquatic products described above have been handled, prepared or produced, packed, stored and transported under sanitary conditions and under supervision by the competent authority, in accordance with the requirements laid down in Codex alimentarius Code of Practice for fish and fishery products; - Les produits ont été inspectés par l'autorité compétente, conformément aux réglementations européennes et hongkongaises applicables, et aucun germe pathogène, substance toxique ou substance indésirable n'ont été mis en évidence / The aquatic products were inspected and quarantined by the competent authority, in accordance with the relevant European and Hong Kong regulations, and no pathogenic bacteria, harmful or foreign substances were found; - Les produits sont conformes aux règles sanitaires et vétérinaires et sont propres à la consommation humaine / The aquatic products meet veterinary and sanitary requirements and are fit for human consumption. Fait à / Done at: [redacted], le / on: 08/03/2016 (date/date) Cachet officiel / official stamp Dr LOIC GUYET Inspecteur de la Santé Publique Vétérinaire (signature du vétérinaire officiel / Signature of official veterinarian)
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Je soussigné, vétérinaire officiel, certifie que / The undersigned, official inspector, hereby certifies that

- Les produits de la pêche décrits ci-dessus proviennent d'établissements agréés par l'autorité compétente ; / The above aquatic products come from the establishment approved by the competent authority;**
- Les produits ont été manipulés, préparés ou produits, conditionnés, entreposés et transportés dans des conditions sanitaires appropriées, sous la supervision de l'autorité compétente, dans le respect des dispositions du code d'usage pour les poissons et les produits de la pêche du Codex alimentarius / The aquatic products described above have been handled, prepared or produced, packed, stored and transported under sanitary conditions and under supervision by the competent authority, in accordance with the requirements laid down in Codex alimentarius Code of Practice for fish and fishery products;**
- Les produits ont été inspectés par l'autorité compétente, conformément aux réglementations européennes et hongkongaises applicables, et aucun germe pathogène, substance toxique ou substance indésirable n'ont été mis en évidence / The aquatic products were inspected and quarantined by the competent authority, in accordance with the relevant European and Hong Kong regulations, and no pathogenic bacteria, harmful or foreign substances were found;**
- Les produits sont conformes aux règles sanitaires et vétérinaires et sont propres à la consommation humaine / The aquatic products meet veterinary and sanitary requirements and are fit for human consumption.**

Problems of Wet Storage

以水存養的問題



- Imported ready-to-eat raw oysters can be contaminated by polluted water in local saltwater tank
(若本地水源受污染，重新把進口(可不經烹煮而食用的)生蠔浸入水中 有可能污染生蠔)
- Mixing of raw oysters from different batches in the same water tank facilitates can cause cross-contamination between shellstocks.
(不同批次的生蠔混置於同一水缸中，也可以造成生蠔之間交叉污染)
- The temperature of the saltwater tank is usually not low enough to suppress bacterial growth
(鹹水缸的水溫通常不足以低至可抑制細菌生長)

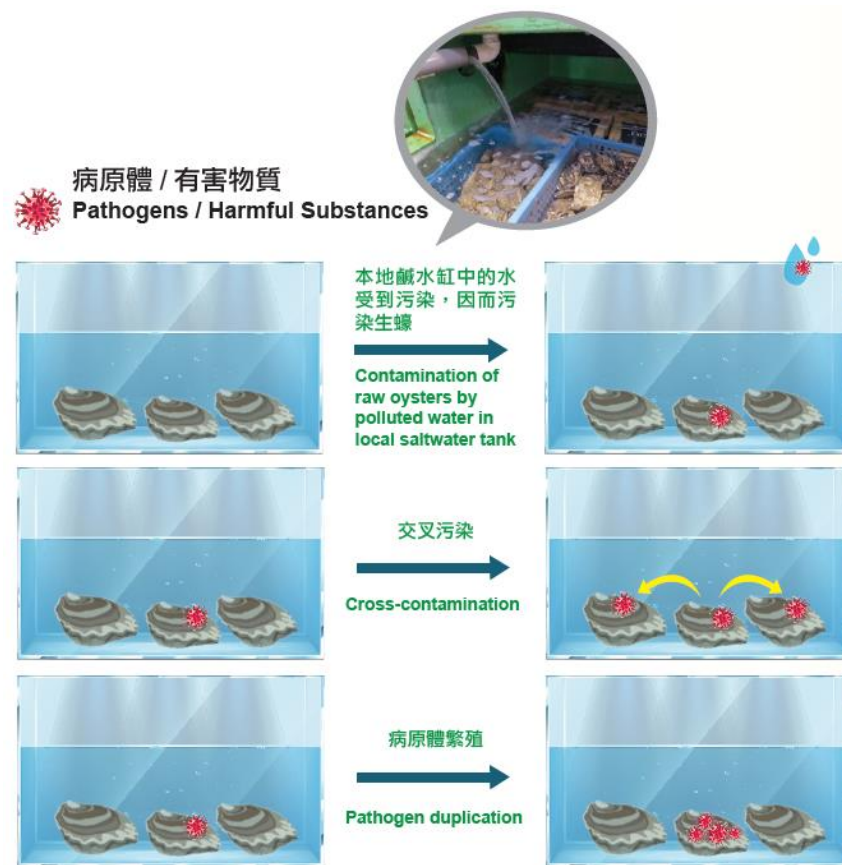


圖1: 以水存養生蠔的污染風險

Figure 1: Contamination risks of raw oysters during wet storage

International and local Hygiene Requirements for Storage of Raw Oyster

國際及本地對生蠔存養的相關要求



CODEX (國際食品法典委員會)

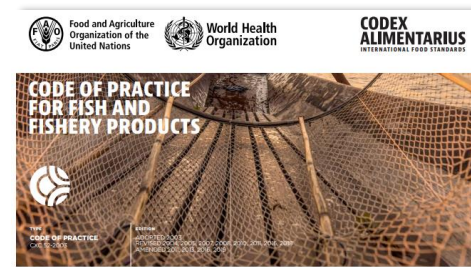
- Re-immersion in or spraying with water of live bivalve molluscs must not take place after they have been packaged and have left the distribution centre or establishment except in the case of retail sale at the distribution centre. (CODEX) (國際食品法典委員會不建議在包裝後把生蠔重新浸入水中存養。)

EU regulation (歐盟)

- Live bivalve molluscs must not be re-immersed in, or sprayed with, water after they have been packaged for retail sale and left the dispatch centre. (REGULATION (EC) No 853/2004 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL) (歐盟禁止在包裝後把生蠔重新浸入水中存養。)

FEHD (食環署)

- All oysters ready for consumption shall be kept in a refrigerator or compartment of a refrigerator separated from other food items at a temperature between 0°C and 4°C. (licensing condition) (食物環境衛生署在受限制食物售賣許可證的持證條件中訂明，供生吃的蠔必須保持於攝氏0度至4度之間的溫度。)



Advices 建議

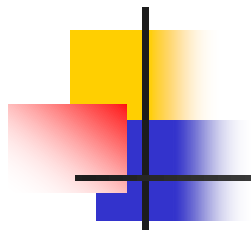


Advice to the Trade (給業界的建議)

- Do not re-immers raw oysters, which can ruin the quality and safety of the products.
(不要把生蠔重新浸入水中存養，此舉會破壞蠔的品質及安全。)
- Traders should purchase raw oysters from reliable sources with the corresponding health certificate. Verify stocks and make sure they are all attached with a shellfish tag that allows tracking of products from harvest to consumers.
(業界應向可靠的供應商採購附有相應衛生證明書的生蠔，並在來貨後加以核實，確保全部附有可供從採收到銷售追蹤蠔隻的標籤。)
- When receiving orders, make sure the temperature of the shipment is satisfactory (i.e. below 4°C) and immediately place it into a cooler at 0°C-4°C for temporary storage.
(收到付運的生蠔時，應確保其溫度符合要求(即攝氏4度以下)，並立即放入攝氏0度至4度的冷凍櫃中暫存。)

Advice to the Public (給市民的建議)

- Susceptible individuals should avoid consuming raw oysters.
(高危人士應避免進食生蠔。)
- Make sure the oysters purchased have not been re-immersed as raw oysters undergoing wet storage have higher food safety risk.
(確保所購買的生蠔沒有重新浸入水中存養，因為以水存養的生蠔存有更高的食物安全風險。)
- Buy raw oysters from licensed / permitted food premises.
(向持有牌照/許可證的食物業處所購買生蠔。)



Thank You