

食物安全焦點

Food Safety Focus



食物安全中心
Centre for Food Safety

二零一四年一月·第九十期
January 2014 · 90th Issue
ISSN 2224-6908



食物環境衛生署
Food and Environmental
Hygiene Department

由食物環境衛生署食物安全中心於每月第三個星期三出版
Published by the Centre for Food Safety, Food and Environmental Hygiene Department on every third Wednesday of the month

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蠔的食物安全風險

Oyster and Food Safety Risk

食物安全中心

食物事故應變及管理小組

陸坡醫生報告

Reported by Dr. Baw LUKE, Medical & Health Officer,
Food Incidents Response & Management Unit,
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食物安全中心上月接獲兩宗涉及49人的集體食物中毒個案報告。患者均曾於跑馬地用膳，並於進食後約40小時出現嘔吐和腹瀉等主要病徵。流行病學調查顯示，肇因是進食了受諾如病毒污染的生蠔。

由於蠔以過濾大量海水的方式進食，體內很容易積聚了各種病毒、細菌和重金屬。

諾如病毒與蠔

蠔所含的各種病毒中，最為人熟知的是諾如病毒。世界各地都有因進食含諾如病毒的蠔所引致的食物中毒事件，因此生蠔屬於高危食物。除經食物傳播外，諾如病毒的主要傳播途徑還包括人傳人及接觸受病毒污染的環境。諾如病毒感染多在冬季爆發，故又稱“冬季嘔吐症”。

諾如病毒只須少量粒子便會致病，不同年齡的人士都會受影響，但以長者和五歲以下幼兒較易染病。一般而言，進食受污染的食物或飲用受污染的食水後24至48小時內會出現嘔吐、噁心、腹部絞痛和腹瀉等症狀，有時也會出現頭痛和發燒。雖然患者或會嘔吐得很厲害，及出現身體虛弱的情況，但症狀一般在一至兩天後便自行消退，及不會有後遺症。

蠔所含的細菌

受污染的海產(包括蠔)經常含有弧菌。弧菌生活在溫暖的海岸水域，種類繁多，其中最常引致食物中毒的是副溶血性弧菌，病徵包括腹瀉、腹部絞痛、發燒、噁心和嘔吐等。

蠔 — 暗藏風險的美食。
Oyster, delicacy that carries inherent risk.



Last month, two clusters of food poisoning involving 49 persons who had dined in Happy Valley were reported to the Centre for Food Safety. The predominant symptoms among the victims were vomiting and diarrhoea which appeared about 40 hours after the meal. Findings of epidemiological investigation suggested that the food poisoning was caused by consumption of norovirus contaminated raw oysters.

As oysters feed by filtering large volumes of seawater from their surrounding environment, viruses, bacteria and heavy metals can accumulate in oysters.

Norovirus and Oysters

Among the different disease-causing viruses found in oysters, norovirus in oysters is well-known to cause foodborne disease outbreaks worldwide, making raw oysters a high risk food item. Besides being foodborne, the virus can also be spread from person to person and from contaminated surroundings, both of which are important routes of infection. Norovirus infection is more common in winter months, and thus it is sometimes called the “winter vomiting disease”.

Norovirus affects people of all ages and only a few viral particles are required to cause disease. However, it is more common among the elderly and children under five years of age. Typically, symptoms of vomiting, nausea, abdominal cramps and diarrhoea develop 24 to 48 hours after the ingestion of contaminated food or water while headache and fever may also occur. Although vomiting can be severe and debilitating, symptoms generally last for one to two days and the illness is usually self-limiting with no long term complication.

Bacteria in Oysters

Vibrio bacteria are often implicated in contaminated seafood, including oysters. There are different kinds of Vibrio. They like to live in warm coastal sea water. Vibrio parahaemolyticus is the commonest type of Vibrio which causes food poisoning. Symptoms of affected persons include diarrhoea, abdominal cramps, fever, nausea and vomiting.

焦點個案
Incident in Focus

蠔所含的重金屬

蠔亦會受鎘和鉛等重金屬污染。雖然因進食受重金屬污染的食物而引致急性中毒的情況並不常見，但長期攝取重金屬可能會對健康帶來不良的影響。重金屬對身體的毒性視乎重金屬的種類和攝入量而定。舉例來說，鎘會影響腎臟，而鉛則對神經系統的發育有影響。

控制措施

發生上述兩宗食物中毒事件後，食物安全中心立即下令禁止進口及銷售有關蠔隻，同時透過國際食品安全當局網絡把事件通知世界衛生組織，由該組織循國際層面知會其他食物安全機構。

注意要點：

- 採自受污染水域的蠔可以致病。
- 雖然已有嚴格的監管措施，但目前沒有萬無一失的方法，可以保證吃生蠔是絕對安全的。
- 進食生蠔有潛在的食物中毒風險。

給市民的意見

1. 食用生蠔存在微生物和化學風險。
2. 為減低風險，無論是進食還是購買生蠔，都應光顧可靠的持牌店鋪。
3. 高風險人士(長者、幼童、孕婦和免疫力較弱的人)應避免進食生蠔。
4. 保持均衡飲食，避免過量進食蠔。
5. 把蠔徹底煮熟可大幅減低食物中毒的風險。

給業界的意見

1. 貝類海產(包括蠔)應購自可靠的供應商，並須附有原產地有關當局簽發的衛生證書。
2. 售賣生吃海鮮(例如蠔)須獲得食物環境衛生署署長的書面許可/批准。
3. 盡量採購在乾淨水域生長和採獲的蠔。

Heavy Metals in Oysters

Oysters can also be contaminated by heavy metals like cadmium and lead. Acute toxicity resulting from consumption of contaminated food is uncommon but chronic exposure can result in undesirable toxic effects. Toxicity from heavy metals depends on the type of metals and the amount taken, for example, cadmium and lead affect the kidney and neurodevelopment respectively.

Action Taken

For the two food poisoning outbreaks, prompt action was taken to stop the import and sale of the concerned oysters. At the same time, the World Health Organization was informed of the outbreaks through its International Food Safety Authorities Network (INFOSAN), which in turn alerted other food safety authorities at the international level.

Key Points to Note:

- Oysters harvested from contaminated water can cause disease in human.
- Despite rigorous monitoring, currently there is no foolproof method to ensure oysters are absolutely safe for raw consumption.
- Consumption of raw oysters carries an inherent risk of food poisoning.

Advice to the Public

1. Eating raw oysters carries potential microbiological and chemical risks.
2. To reduce risk, raw oysters should only be consumed in or obtained from reliable licensed premises.
3. Susceptible populations (the elderly, young children, pregnant women and people with weakened immunity) should avoid taking raw oysters.
4. Maintain a balanced diet and avoid over indulgence in oysters.
5. Thorough cooking of oysters can significantly reduce the food poisoning risk.

Advice to the Trade

1. All shellfish, including oysters, should be obtained from reliable sources with health certificates issued by relevant authority of the exporting countries.
2. Selling raw seafood, such as oysters, requires permission in writing/endorsement from the Director of Food and Environmental Hygiene.
3. Efforts should be made to source oysters that were grown in and harvested from areas of clean water.

風險傳達
工作一覽
Summary of
Risk Communication Work

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菇類含毒素嗎？

Toxins in our Mushrooms?

食物安全中心
風險評估組
科學主任游天頌先生報告

Reported by Mr. Arthur YAU, Scientific Officer,
Risk Assessment Section,
Centre for Food Safety

我們一連三期介紹食物中的天然毒素，本文為該系列之完結篇。

菇類清香味美、口感獨特，並蘊含豐富的蛋白質和其他營養，古今中外皆視之為山珍。菇類屬於大型真菌，可供食用的是其產生孢子的生殖器官。

然而，很多野生菇類含有多種對健康有害的化學物，誤食可能會對器官造成永久性傷害，甚至死亡。由於有毒和無毒的菇類外形相似，非真菌學家不易鑒別，因誤食菇類而中毒的事例在有食用菇類傳統的地方時有所聞。民間流傳觀察菇類的顏色，或用銀器測試等都是沒有根據的說法，絕對不能當作判斷菇類毒性的標準。此外，很多菇類毒素都是耐熱的，烹煮或裝罐都不能去除毒性。因此，預防菇類中毒的唯一方法是不要隨便採食野菇。另外還有很多不至於致命但仍然有毒的菇類毒素。事實上，香港大部分野菇(約佔九成)都是不能食用或有毒的。

毒傘肽

毒傘肽是一類環肽化合物，屬劇毒，其獨特之處在於食用後會在人體內潛伏6至48小時(平均為6至15小時)後才會出現中毒症狀。患者在潛伏期時往往由於沒有病徵而沒有及時求診，但此時其實毒素已在侵害體內各器官。發病初期會出現腹痛、嘔吐和水狀腹瀉等嚴重腸胃感染症狀。如患者挺過這個階段，會有短暫時間彷彿已經病愈，但之後會病情惡化，出現肝衰竭、乏力、沒有胃口、尿呈茶色和皮膚發黃等病徵。中毒深的患者有可能在早期嚴重腸胃炎時因脫水而死，但更常見的是因無法安排肝臟移植而死於肝衰竭。本港的野生菇類如條紋毒鵝膏菌、致命鵝膏菌、灰花紋鵝膏菌和小托柄鵝膏菌等都含有毒傘肽。二零一三年四月本港曾發生兩宗採食野生鵝膏屬菌而毒傘肽中毒的事件，造成三人中毒，三名患者的肝都受到嚴重損害，其中一人更需肝臟移植。

毒蕈鹼

毒蕈鹼是一種菇類毒素，會影響自主神經系統的平滑肌和汗腺的受體。進食了含大量毒蕈鹼的菇類會大量流汗，毒蕈鹼的中毒症狀還包括唾液、汗液和淚液分泌增加，並在進食毒菇後15至30分鐘內出現腹痛、噁心、腹瀉和呼吸困難。本港郊外可見的杯傘屬和絲蓋傘屬某些品種含有毒蕈鹼。有些本地中毒個案懷疑是毒蕈鹼造成的，但涉及之確實菇類品種未明。

腸胃毒素

香港以至全世界的菇類最常含有的是刺激腸胃

This article is the last in a series of three articles on natural toxins in food.

Mushrooms have been cherished by many cultures as nature's delicacies. They provide people with food of unique aroma, flavour and texture, and at the same time provide a source of protein and other nutrients. The macroscopic mushroom, which is the reproductive spore-bearing organ of a fungus, is usually the part consumed as food.

However, there are also many wild mushrooms that contain a range of chemicals that can seriously hamper consumers' health, causing permanent damages to organs and even death. Such tragic results have been reported in many mushroom-consuming cultures from time to time, as toxic and non-toxic species of mushrooms can look similar and identifying toxic mushrooms calls for the expertise of mycologists. Folklore methods like observing the colour, reactions with silver, etc. are not reliable indicators of mushroom toxicity. Furthermore, many mushroom toxins are heat resistant and cannot be rendered non-toxic through cooking or canning. Therefore, the only way to avoid mushroom poisoning is not to collect and consume wild mushrooms. There are also many non-lethal but still toxic mushroom toxins. In fact, the majority of the wild mushrooms in Hong Kong (about 90%) are inedible or poisonous.

Amatoxins

Amatoxins is a family of cyclic octapeptides. Amatoxins are potent toxins that are unique in staying latent in human for a period ranging from 6 to 48 hours (average 6 to 15 hours) after consumption before showing any poisoning symptoms. This symptomless latent period enables the intaken amatoxins to circulate and exert toxicities to different organs of the victim, and cause the victim to delay seeking medical attention. The symptoms initially resemble severe gut infection with abdominal pain, vomiting and watery diarrhoea. If the victims survive this stage, they may seem to recover for a short period, and followed by liver failure with loss of strength and appetite, tea colour urine and yellow skin. Death can occur from dehydration in the initial severe gut toxicity phase or more commonly from liver failure if liver transplantation cannot be arranged. Death Cap (*Amanita phalloides*), Guangzhou Destroying Angel (*Amanita exitialis*), East Asian Brown Death Cap (*Amanita fuliginea*) and Eastern American Flourey Amanita (*Amanita farinosa*) are among the local wild mushroom species that contain amatoxins. There were two outbreaks of amatoxins poisoning in April 2013 after consumption of locally collected wild *Amanita* mushrooms, affecting three persons. All three persons suffered from serious liver damage and one of them required liver transplant.



條紋毒鵝膏菌
Amanita phalloides



花褶傘
Panaeolus retirugis

本港其中兩種有毒野菇：條紋毒鵝膏菌含毒傘肽，而花褶傘則含脛基二甲色胺。(照片由中大生物學榮休講座教授張樹庭教授提供)

Examples of poisonous wild mushrooms that can be found in Hong Kong. *Amanita phalloides* contains amatoxins while *Panaeolus retirugis* contains psilocin. (Photo by courtesy of Professor Chang Shu-ting, Emeritus Professor of Biology at The Chinese University of Hong Kong)

Gastrointestinal Toxin

By far the commonest toxin in mushroom in Hong Kong or worldwide is gut

的毒素。本港亦有菇類含有這些成分不明的腸胃毒素，本港逾九成的菇類中毒都是由這些毒素引起的。患者很快(0.5至3小時)會出現上腹痛、嘔吐和腹瀉等症狀。這類中毒一般會自然痊癒，期間只須補充水分和輔以舒緩症狀的藥物。

其他菇類毒素

除了上述毒素外，還有其他食用後會出現不同中毒症狀的菇類毒素。但本港至今沒有這類病例報告。有些菇類毒素會引致與醉酒類似的症狀，出現錯覺和幻覺，甚至抽搐；其他則會引致腎臟或肌肉受損，其中一種菇類毒素只有與酒類同吃才會出現症狀。

切勿自行採食野生菇類

鑒別可食用的野生菇類並沒有簡單易行的方法，因此，市民不應自行採食野生菇類。可食、不可食和有毒的野生菇類外形十分相似，實難以分辨種類。野外採摘的菇類受污染的情況非常普遍，而且很容易混雜了已腐爛變質的野菇。食用受到污染或腐爛的食用菇同樣會引致中毒。誤食有毒或不安全的野菇後果可以非常嚴重，甚至致命。

irritants. These ill-defined gastrointestinal toxins exist in a number of local mushrooms and cause more than 90% of mushroom poisoning in Hong Kong. Patients would have early onset (0.5 to 3 hours) of epigastric pain, vomiting and diarrhoea. The disease is self-limiting and responds to fluid replacement and symptomatic treatment.

Other Mushroom Toxins

There are also other mushroom toxins that cause a range of symptoms after consumption. However, there is no local case reported so far. Some mushroom toxins can cause drunk-like symptoms, illusions, hallucinations or even convulsion, others can cause renal or muscle injury, while one of them can cause symptoms only after co-ingestion of alcohol.

Do Not Self-collect and Consume Wild Mushrooms

As there is no easy way for the general public to ensure correct identification of edible wild mushrooms, the public should not collect wild mushrooms themselves for consumption. Edible, inedible and poisonous wild mushrooms can look quite similar and distinguishing mushroom species is difficult. Contamination in field collected mushrooms is common, and it is easy to have spoiled mushrooms in a collection. Consuming edible but contaminated or spoiled wild mushrooms also leads to poisoning. The consequence of consuming incorrectly identified or unsafe mushrooms can be severe and life threatening.

食物事故點滴 Food Incident Highlight

堅果與黃曲霉毒素

食物安全中心(中心)上月公布的總膳食研究結果顯示，本港成年人口從膳食攝入五種霉菌毒素的分量屬於低，對健康造成嚴重不良影響的機會不大。

這次研究涵蓋了五種霉菌毒素，其中黃曲霉毒素較常見於花生、木本堅果、玉米、無花果乾、穀物和上述食物的製品中。天然存在的黃曲霉毒素已被世界衛生組織轄下的國際癌症研究機構列為確定令人類致癌的物質。中心根據這次總膳食研究的結果和本港乙型肝炎帶菌者的百分比推算，本港每年因攝入黃曲霉毒素引致的肝癌病例約八宗，佔每年患肝癌的病例百分之一以下，市民不用過分擔心。儘管如此，在合理的情況下，應將黃曲霉毒素的攝入量減到最少。

為減低食物中的霉菌毒素含量，業界應遵循優良務農規範和良好作業規範；向可靠的食物供應商採購食品及原材料；以及妥善貯存食材。市民則應避免食用發霉或受損的食物。由於堅果含有各種營養素，例如不飽和脂肪酸、優質蛋白質、纖維、維他命和礦物質等，適量進食不加鹽的堅果可作為均衡飲食的一部分。

Nuts and Aflatoxins

Last month, the Centre for Food Safety (CFS) released the Total Diet Study (TDS) results which revealed that dietary exposures of the Hong Kong adult population to five types of mycotoxins were low and unlikely to pose significant health concern.

Aflatoxins, one of the five types of mycotoxins studied, are more likely found in peanuts, tree nuts, corn, dried figs, cereals and their products. The International Agency for Research on Cancer (IARC) of the World Health Organization has classified naturally occurring aflatoxins as carcinogenic to humans. Based on the TDS findings and the prevalence of hepatitis B carriers in Hong Kong, the CFS estimated that aflatoxins contribute approximately eight cases of liver cancer in Hong Kong each year which amount to less than 1% of liver cancer annually. While there is no cause for alarm, exposure to aflatoxins should be reduced to as low as reasonably possible.

The trade should observe good agricultural and manufacturing practices, source food and ingredients from reliable suppliers and store food properly to minimise mycotoxin contamination. The public is advised to avoid consuming food that looks mouldy or damaged. As nuts contain many nutrients, such as unsaturated fatty acids, high-quality protein, fibre, vitamins and minerals, the public may include unsalted nuts in a well-balanced diet and consume them in moderation.

針對禽流感的進口管制

最近，本港出現四宗人類感染甲型禽流感確診個案，其中三宗是H7N9個案，一宗是H9N2個案，四名患者均曾在深圳逗留。

甲型流感病毒是一組通常於鳥類中傳播的流感病毒，偶而會有人類受到感染。由於流感病毒在一般煮食溫度下會失去活性，**家禽和蛋經適當處理和烹煮後是可以安全食用的。**

鑑於本港近期出現人類感染甲型禽流感(H7N9)確診個案，為防患於未然，本港已暫停由深圳供港註冊養殖場輸入活家禽。至於從內地其他地方進口的家禽，每批均須在文錦渡邊境進行甲型禽流感病毒測試(包括高致病性的H5和H7亞型病毒)。只有測試結果令人滿意的家禽，才會放行售賣。市民應保持良好個人衛生，避免直接接觸家禽、鳥類及其糞便。食物安全中心會繼續密切留意有關情況。

Import Control for Avian Influenza

Recently, four confirmed human cases of avian influenza A have been reported in Hong Kong. Three cases were infected with H7N9 and one was infected with H9N2. All four patients involved had a history of stay in Shenzhen.

Avian influenza A viruses belong to a group of viruses that normally circulate among birds and occasionally found to infect humans. Because influenza viruses are inactivated by normal cooking temperatures, it is safe to eat **properly prepared and cooked poultry and poultry eggs.**

In response to the recent human cases of avian influenza A(H7N9) in Hong Kong, the import of live poultry from the registered farms in Shenzhen has been suspended as a precautionary measure. For poultry imported from other regions of the Mainland, each consignment will be screened for influenza A viruses, including the highly pathogenic H5 and H7 subtypes, at the Man Kam To border. Only the poultry with satisfactory test results would be released for sale. Members of the public are advised to observe good personal hygiene and avoid direct contact with poultry, birds and their droppings. The Centre for Food Safety will continue to monitor the situation.