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焦點個案 Incident in Focus

進食生吃食物的風險

Risk of Eating Raw Foods

食物安全中心風險傳達組
科學主任莊梓傑博士報告

Reported by Dr Ken CHONG, Scientific Officer,
Risk Communication Section, Centre for Food Safety

背景

二零一八年四月，食物安全中心(中心)接獲歐洲委員會的通報，指法國某區域出產的生蠔被發現受諾如病毒污染。這已是歐洲委員會在本年第二度通報有同類事故發生。此外，在四月，蛋、生牛奶芝士及蘿蔓生菜因受沙門氏菌或產志賀毒素大腸桿菌污染而須進行回收。有關事故顯示，生或未煮熟的食物有潛在的食物安全風險。

Background

In April 2018, the Centre for Food Safety (CFS) received notification from the European Commission (EC) that raw oysters harvested from an area in France were found to be contaminated with norovirus: the second time that a similar incident notified notification in this year. Also in April, there were also recalls of eggs, raw milk cheese, and romaine lettuce due to the contamination with *Salmonella* or Shiga toxin-producing *Escherichia coli* (STEC). These incidents illustrate that raw or undercooked food carries an inherent food safety risk.

生吃食物的潛在食物安全風險

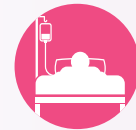
一些人為了品嚐食物的原味而選擇進食生或未煮熟的食物，但這樣做的話，就會冒上較大的食物中毒風險。在本地的食物中毒個案中，最常見的成因之一就是生吃食物受污染。

Inherent Food Safety Risk of Raw Foods

Some people choose to eat raw or undercooked foods for the original taste but this comes at a price of having a higher risk of food poisoning. Contaminated raw foods has been one of the most frequently identified contributing factors of local food poisoning cases.

由於食物在農場到餐桌的不同階段都可能受致病菌污染，包括“超級細菌”(即對抗菌素產生耐藥性的微生物)，因此生產商要多加關注供生吃食物的種植／養殖環境。舉例來說，蠔屬濾食性動物，牠們在進食時

While food can be contaminated with pathogens including “superbugs” (ie., microorganisms that become



高危人士

Susceptible populations

請留意生或未煮熟食物的風險

Pay attention to the risks associated with raw or undercooked food items



生牛奶芝士
Raw milk cheese



預先包裝沙律菜
Prepackaged salad
vegetables



未熟的蛋
Undercooked egg



煙三文魚
Smoked salmon



刺身
Sashimi

高危人士宜避免進食生或未煮熟的食物。
Susceptible populations are advised to avoid raw or undercooked foods.

焦點個案
Incident in Focus

有機會攝取在受污染水中環境的諾如病毒及沙門氏菌。同樣地，在農場，若農地的灌溉水受污染或農夫不注意個人衛生，種植在農地上的蔬菜便可能受沙門氏菌及可致病的大腸桿菌污染。

此外，加工環境或會藏有微生物，例如煙三文魚可在加工環境受李斯特菌污染。由於冷熏程序不能消滅該菌，煙三文魚的長保質期會讓該菌得以滋長。

若食物處理人員在處理食物時不遵守良好衛生規範，尤其是涉及以人手處理的生吃食物（例如壽司及刺身），他們並可能成為污染來源。

徹底煮熟食物可以清除生的食物可能存在的致病菌，因為高溫能有效殺死致病菌。

食物中毒的高危人士

食物中毒可以發生在任何人身上，但**高危人士**，例如孕婦、嬰幼兒、長者及免疫力較低人士（例如糖尿病、肝或腎病、器官移植及愛滋病的病人，或接受化療或放射治療的病人），若進食生或未煮熟的食物，引致感染或併發症的風險較高。視乎致病菌的種類，病人可能出現輕重程度不同的食物中毒症狀。最常見的症狀包括嘔吐、腹瀉、腹痛及發燒，但高危人士或出現較嚴重，甚至足以致命的症狀。舉例來說，幼兒及長者受產志賀毒素大腸桿菌感染，較易出現溶血尿毒症的情況。孕婦若受李斯特菌感染，症狀可能較輕微，但細菌或會透過胎盤傳染給胎兒，可能引致流產、死胎，甚至初生嬰兒夭折。長者及免疫力較低人士受李斯特菌感染，可能導致血液或腦部嚴重感染。

注意事項：

1. 生或未煮熟的食物可能在農場到餐桌的不同階段受致病菌污染，故潛在食物安全風險。
2. 食物中毒有時可導致相當嚴重的後果，對高危人士尤甚。
3. 徹底煮熟食物才進食，是清除食源性致病菌的有效方法，從而預防食物中毒。

給市民的建議

- 最佳的做法，當然是進食徹底煮熟的食物，以盡量減低患上食源性疾病的風險。
- 高危人士及希望減低患上食源性疾病風險的人應避免進食生及未煮熟的食物。
- 供生吃的新鮮農產品應從可靠的供應商購買、妥善處理以避免受污染、以清水徹底清洗，並在調製後盡快食用。

給業界的建議

- 遵從《優良製造規範》，並採用食物安全系統，例如食物安全重點控制系統，以加強食物安全。
- 食物處理人員在處理食物時，應保持良好的個人、環境及食物衛生。
- 提供標籤（或在服務地點設標語牌）以顯示即食食品中有生或未煮熟的食物／配料，以助消費者作出知情的選擇。舉例來說，在標籤或標語牌註明：“特別是在患有某類疾病的情況下，若你進食生或未煮的肉類、家禽、海產、貝類或蛋類，可能會增加患上食源性疾病的風險”。

resistant to antimicrobials) along different stages from farm to table, more concerns are put to their farming/growing environments for those foods commonly consumed in raw. Examples include oysters which are filter-feeders and can ingest norovirus and *Salmonella* in the contaminated water environment during feeding. Similarly in farms, vegetables could be contaminated with *Salmonella* and pathogenic *E. coli* when they are grown in the field by contaminated irrigation water or farmers who do not observe personal hygiene.

Moreover, the processing environment may harbour microorganisms, e.g. smoked salmon may be contaminated with *Listeria monocytogenes* in its processing environment. The bacterium cannot be eliminated by cold smoking process and the long shelf life of smoked salmon allows it to grow.

Food handlers may also be a source of contamination, if they do not observe good hygienic practices when handling foods, in particular when raw foods involving manual handling, such as sushi and sashimi.

To get rid of pathogens potentially present in raw foods, cooking food thoroughly is of paramount importance as heat can effectively kill the pathogens.

Susceptible Populations of Food Poisoning

Anyone can get food poisoning, but **susceptible populations** such as pregnant women, infants, young children, the elderly and people with weakened immunity (e.g. people with diabetes, liver or kidney disease, organ transplants and HIV infection; or people receiving chemotherapy or radiation therapy) are of higher risk of being infected or having complications if they consume raw or undercooked foods, due to their health status. Symptoms of food poisoning may range from mild to severe and vary depending on the pathogens. The most common symptoms include vomiting, diarrhoea, abdominal pain and fever, yet more severe or even life-threatening symptoms may occur in the susceptible populations. For example, hemolytic-uraemic syndrome (HUS) are more likely to occur for STEC infection in very young children and the elderly. For *Listeria* infection in pregnant women, symptoms may be relatively mild in mothers, but the passage of the bacterium through the placenta may cause miscarriage, stillbirth, or even infant death. *Listeria* infections in elderly and people with weakened immunity may lead to severe infections of the bloodstream or brain.

Key Points to Note:

1. Raw or undercooked food could be contaminated with pathogens at different stages from farm to table and hence have inherent food safety risk.
2. Consequences of food poisoning sometimes could be quite serious, particularly in susceptible populations.
3. Cooking food thoroughly before consumption is an effective way to get rid of foodborne pathogens and hence prevent food poisoning.

Advice to the Public

- It's always best to eat food that has been cooked thoroughly to minimize the risk of foodborne illness.
- Susceptible populations and those who wish to reduce the risk of foodborne illnesses should avoid consuming raw and undercooked foods.
- Fresh produce, intended to be consumed raw, should be sourced from reliable suppliers, handled properly to avoid contamination, thoroughly washed with clean water, and consumed as soon as possible after preparation.

Advice to the Trade

- Follow Good Manufacturing Practices and adopt food safety systems such as Hazard Analysis and Critical Control Points (HACCP) to enhance food safety.
- Food handlers should maintain good personal, environmental and food hygiene when handling food.
- Indicate the presence of raw or undercooked foods/ingredients in ready-to-eat items to help consumers make informed choices by providing labels (or placards of service location) stating, for instance, "Consuming raw or undercooked meats, poultry, seafood, shellfish or eggs may increase your risk of foodborne illness, especially if you have certain medical conditions".



日本進口食品管制的最新資料

Update on Import Control on Japanese Food

食物安全中心 風險評估組
科學主任陳家茵女士報告

Reported by Ms. Michelle CHAN, Scientific Officer,
Risk Assessment Section, Centre for Food Safety

本文概述食物安全中心(中心)對規管日本進口食品作出的新安排。

This article provides an overview of the new arrangement of the Centre for Food Safety's (CFS) import control on Japanese food.

規管日本進口食品的新安排

政府的首要考慮是確保食物安全。就二零一一年福島核電站事故(福島事故)，政府於二零一一年三月發出《命令》，限制日本福島及其他四個縣(即千葉、群馬、茨城及栃木)的若干食品進口香港。因應事態的發展，政府持續檢視對日本進口食品的風險管理措施。考慮到最近的監察結果及國際組織的專業意見，政府建議對規管日本進口食品作出以下的新安排(見下表)。

總的來說，香港對來自福島的食品的進口限制維持不變。來自四個縣(不包括福島)的蔬菜、水果、奶、奶類飲品及奶粉，如附有由日本當局發出的輻射證明書及出口商證明書，可有條件地准予進口。輻射證明書註明進口本港的每批日本食品是來自該四個縣中的哪一個縣份，並證明有關食品的輻射水平沒有超出食品法典委員會的指引限值。根據食品法典委員會，若食品的輻射水平不超出其指引限值，便可供人安全食用。作為進一步的保障，有關出口商必須持有及提供出口商證明書，證明有關出口商向本港出口的食品就輻射防護而言適宜供人食用，並在日本可供銷售(即該等食品的輻射水平不超出較食品法典委員會指引限值更嚴格的日本限值)。

New Arrangement for Import Control on Japanese Food

Ensuring food safety is the government's prime consideration. In response to the 2011 Fukushima nuclear power plant incident (Fukushima incident), an [Order](#) was issued in March 2011 to restrict the import of certain food from Fukushima and other four prefectures (namely Chiba, Gunma, Ibaraki and Tochigi) in Japan to Hong Kong. The government has been reviewing the risk management measures on food products

縣 Prefectures	食品 Food products	現有的進口限制 Existing Import Restrictions	新的進口限制 New Import Restrictions
福島 Fukushima	水果、蔬菜、奶、奶類飲品及奶粉 Fruits, vegetables, milk, milk beverages and dried milk	禁止進口 (不變) Banned (No change)	
	冷凍或冷藏野味、肉類及家禽、禽蛋，以及活生、冷凍或冷藏水產品 Chilled or frozen game, meat and poultry, poultry eggs, and live, chilled or frozen aquatic products	如附有輻射證明書，准予進口 (不變) Allowed to be imported if accompanied with radiation certificate (No change)	
千葉、群馬、茨城、栃木 (四個縣) Chiba, Gunma, Ibaraki and Tochigi (the four prefectures)	水果、蔬菜、奶、奶類飲品及奶粉 Fruits, vegetables, milk, milk beverages and dried milk 	禁止進口 Banned	(新安排) 如附有下列文件，有條件地准予進口： (a) 出口商證明書；以及 (b) 輻射證明書 (New arrangements) Allowed to be imported on the conditions that they are accompanied with: (a) exporter certificate; and (b) radiation certificate
	冷凍或冷藏野味、肉類及家禽、禽蛋，以及活生、冷凍或冷藏水產品 Chilled or frozen game, meat and poultry, poultry eggs, and live, chilled or frozen aquatic products	如附有輻射證明書，准予進口 (不變) Allowed to be imported if accompanied with radiation certificate (No change)	

日本食品進口限制於作出新安排前後的比較
Comparison of import restrictions on Japanese food before and after implementation of new arrangement

imported from Japan in the light of the latest situation. Taking into account the recent surveillance results and expert views from international organisations, new arrangement for import control on Japanese food was proposed as shown in Table below.

In summary, import restrictions on food from Fukushima remain unchanged. Vegetables, fruits, milk, milk beverages and dried milk from the four prefectures (Fukushima excluded) are allowed to be imported with the conditions that they are accompanied by both a radiation certificate and an exporter certificate issued by the Japanese authority. The radiation certificate shows which of the four prefectures each

consignment of products come from and attests that the radiation levels do not exceed the Codex Guideline Levels (Codex levels). According to Codex, food is considered as safe for human consumption if the radiation levels do not exceed the Codex levels. As an additional safeguard, the exporter concerned must hold and produce exporter certificate which certifies the foods exported to Hong Kong by the exporter concerned are fit for human consumption as far as radiological protection is concerned and are readily available for sale in Japan implying that the radiation levels do not exceed the Japanese levels which are more stringent than Codex levels.

雙重把關保障食物安全

新安排涉及雙重把關。在出口層面，作為簽發輻射證明書及出口商證明書的日本當局，必須確保進口本港的每批日本食品不是來自福島，並證明有關食品的輻射水平不但沒有超出食品法典委員會指引限值，亦沒有超出更嚴格的日本限值。在進口層面，中心會繼續就進口本港的每批日本食品進行輻射檢查。有關食品在進行輻射檢測後才可在本地市場銷售。中心會加強檢查，抽取來自該四個縣的蔬菜、水果及奶類產品進行輻射檢測。中心會繼續於每個工作天在其網頁更新有關的輻射檢測結果，供公眾查閱。

Two Levels of Gatekeeping to Safeguard Food Safety

Two levels of gatekeeping are involved under the new arrangement. At export level, the Japanese authority which issue the radiation certificates and exporter certificates must ensure that each consignment of those products do not come from Fukushima and attest that the radiation levels of the food products do not exceed the Codex levels as well as the more stringent Japanese levels. At the import level, the CFS will continue to conduct radiation tests on every consignment of food products imported from Japan. Food products can only enter the local market after radiation testing has been conducted. The CFS will strengthen inspection and testing on vegetables, fruits and milk products from the four prefectures. The radiation test results will continue to be updated on the CFS's website every working day for public access.

新安排的科學依據

經考慮以下的依據，政府對規管日本進口食品作出上述的新安排。

Scientific Justifications for New Arrangement

The new arrangement for import control on Japanese food aforementioned being made has taken into account the following justifications.

在《命令》生效後，中心檢測了逾49萬個日本進口食品樣本，包括該四個縣准予進口的食品。所有樣本的檢測結果均沒有超出食品法典委員會指引限值，當中只有64個樣本檢測出微量輻射。中心最近一次是在二零一六年九月檢出含有微量輻射的樣本。

After the Order has become effective, over 490,000 food samples from Japan, including those allowed to be imported from the four prefectures, were tested by the CFS. All samples complied with Codex levels and only 64 of them detected with low radiation levels. The latest sample with low radiation level detected was collected in September 2016.

自福島事故後，日本政府已加強對食品的輻射監控。當有食品被檢測出輻射水平超出日本標準(即使沒有超出食品法典委員會指

The Japanese Government has enhanced its monitoring on radiation in food since the Fukushima incident. Food products detected with radiation level exceeding the

引限值)，日本政府會禁止相關食品在日本出售及出口。日本當局的資料顯示，截至二零一八年三月初，日本已抽取超過200萬個食品樣本進行輻射檢測，僅少數樣本(約1200個)被檢測出食品法典委員會指引限值。在這些超出食品法典委員會指引限值的樣本中，約90%在二零一三年三月或以前抽取，接近60%來自福島。

世界衛生組織、聯合國糧食和農業組織及國際原子能機構等國際組織一直監測福島事故的放射性塵埃對健康及食物安全的影響，並普遍從放射性水平角度確認日本食物的安全性。

新安排將於《命令》作出相應修訂及刊憲後生效。中心會繼續監察事態的最新發展，在有需要的情况下，調整對日本進口食品的規管措施。

Japanese standards (even though not exceeding the Codex levels) will be prohibited from domestic sale and export. Information from Japanese authority showed that as of early March 2018, over 2,000,000 samples were collected for radiation testing with small number of them (about 1200 samples) exceeded the Codex levels. Among those samples exceeded Codex levels, nearly 90% of them were collected in or before March 2013 and about 60% came from Fukushima.

International organisations including the World Health Organization, the Food and Agriculture Organization of the United Nations, and the International Atomic Energy Agency have been monitoring the impact of the fallout of the Fukushima incident on health and food safety and generally have confirmed the safety of Japanese food from the perspective of radiation levels.

The new arrangement will become effective after corresponding amendments to the Order has been made and gazetted. The CFS will keep monitoring the latest development and adjust its import control on Japanese food when necessary.

食物事故點滴
Food Incident Highlight

微塑膠對食物安全的影響

The Impact of Microplastics on Food Safety

最近，一所本地大學報稱，60%野生烏頭含有微塑膠。

根據聯合國糧食及農業組織(糧農組織)表示，微塑膠通常是指最長一邊為少於5毫米的塑膠物品。該定義的微塑膠亦包括納米塑膠(少於100納米)。二零一七年，糧農組織認為，現時海產含微塑膠對人類所造成的整體健康風險甚低。同時，重要的是必須考慮到，已排放及將會排放到環境中的塑膠在降解後，日後無可避免會導致微塑膠及納米塑膠有所增加。

糧農組織認為對微塑膠的課題認識不足，包括：水生環境及水生生物含有體積較小的微塑膠(少於150微米)的情況；微塑膠可能對海產安全造成的影響；以及相關分析方法。因此，有需要就有關課題進行更多研究。食物安全中心會繼續留意國際間的最新發展。

Recently, a local university reported that 60% of wild flathead grey mullet contained microplastics.

According to the Food and Agriculture Organization (FAO) of the United Nations, microplastics usually refer to plastic items less than 5 mm in their longest dimension. This definition includes also nanoplastics (less than 100 nanometres). In 2017, FAO commented that the overall human health risks posed by microplastics in seafood at present appear to be low. At the same time, it is important to consider the unavoidable increase of micro- and nanoplastics in the future as a result of degradation of plastics already released in the environment as well as future inputs.

FAO considered that there were knowledge gaps on the occurrence in aquatic environments and organisms of the smaller sized microplastics (less than 150 µm), their possible effects on seafood safety, as well as relevant analytical methods. More researches on the subject were needed. The Centre for Food Safety will keep in view the international development.

透過取代工業生產的反式脂肪防治心血管疾病

Prevent Cardiovascular Diseases (CVDs) through Replacing Industrially-produced Trans Fat

世界衛生組織在五月中發布以“REPLACE”系列行動作為藍圖，以期使到全球在二零二三年在食品供應中停用工業生產的反式脂肪。攝入高含量的反式脂肪會增加低密度脂蛋白膽固醇(即“壞”膽固醇)水平，同時降低高密度脂蛋白膽固醇(即“好”膽固醇)水平，從而增加罹患心血管疾病的風險。全球停用工業生產的反式脂肪有助實現目標，在二零三零年把非傳染性疾病(例如心血管疾病)導致的過早死亡的人數減少三分之一。

反式脂肪有兩大來源：天然來源(存在於牛及羊等反芻動物的乳製品及肉)及工業生產來源(主要來源是部分氫化油)。多種食物，包括人造牛油、煎炸食物及烘焙食品(例如餅乾及批)，均有使用部分氫化油作配料。反式脂肪含量高的食物，若改用多元不飽和脂肪或單元不飽和脂肪製作，可降低患上心血管疾病的風險。消費者在選購食物時，可利用營養標籤所載有關反式脂肪的資料。業界可選用較健康的替代品，取代含有工業生產的反式脂肪的配料。

In mid-May, the [World Health Organization](#) released the [REPLACE](#) action package as a roadmap to eliminate industrially-produced trans fat from the global food supply by 2023. High trans fat intake increases the risk of CVDs through increasing LDL (“bad”) cholesterol levels while lowering HDL (“good”) cholesterol. Global elimination of industrially-produced trans fat can help achieve the goal of reducing premature death from noncommunicable diseases (e.g. CVDs) by one-third by 2030.

There are two main sources of trans fat: natural sources (in the dairy products and meat of ruminants, e.g. cows and sheep) and industrially-produced sources (their main source being partially hydrogenated oils, PHOs). PHOs are an ingredient in many foods, including margarine, fried foods and baked goods (e.g. biscuits and pies). Replacing diets high in trans fat with polyunsaturated or monounsaturated fat decreases the risk of CVDs. Consumers can make use of the trans fat information on [nutrition labels](#) when purchasing foods. Traders can choose healthier alternatives to replace ingredients containing industrially-produced trans fat.



風險傳達工作一覽 (二零一八年五月)

Summary of Risk Communication Work (May 2018)

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