

本期內容 IN THIS ISSUE

焦點個案

大閘蟹與食物安全

食物安全平台

從食物安全角度探討抗菌素耐藥性問題

食物事故點滴

跟進受真菌污染雞蛋的工作
有關巴西肉類及偽造衛生證明書事件的跟進事宜

風險傳達工作一覽

Incident in Focus

Hairy Crabs and Food Safety

Food Safety Platform

Antimicrobial Resistance (AMR)
from Food Safety Perspectives

Food Incident Highlight

Follow-up on Fipronil
Contaminated Eggs
Brazilian Meats and Falsified
Health Certificate Follow-up

Summary of Risk Communication Work

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焦點個案

Incident in Focus

大閘蟹與食物安全

Hairy Crabs and Food Safety

食物安全中心

風險管理組

繆若恒醫生報告

Reported by Dr. Henry MOU, Medical Officer,

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事件

二零一六年，三個來自內地的大閘蟹樣本被檢出二噁英及二噁英樣多氯聯苯的含量超出食物安全中心(中心)所訂的行動水平。兩個涉事水產養殖場被暫停進口及在港出售大閘蟹。本文簡介中心為確保食物安全而就大閘蟹採取的現有管制措施。

二噁英及二噁英樣多氯聯苯

二噁英及二噁英樣多氯聯苯是毒性作用相似的環境污染物。二噁英在環境中無處不在，既可天然釋出(例如火山爆發及森林大火)，亦會透過燃燒及多種工業過程以副產品的形式產生。另一方面，二噁英樣多氯聯苯則與工業活動有較大關係。一但釋出，二噁英會污染土壤表面和大閘蟹所生活的溪澗、河流及湖中的沉積物。大閘蟹在這些棲息地的水底覓食，二噁英及二噁英樣多氯聯苯沿食物鏈在生物體內積聚。二噁英對人類健康造成長遠的累積風險，包括導致兒童及成人分別出現發育及生育問題，還可令人致癌。

本港的食物安全規例

《公眾衛生及市政條例》(第132章)訂明，所有出售及擬供人食用的食物必須適合供人食用。進口的大閘蟹必須符合本地規定，包括獸藥殘餘(例如硝基呋喃及孔雀石綠)、金屬雜質(例如鎘及汞)、人造激素、染色料(例如蘇丹紅)、除害劑殘餘、二噁英及二噁英樣多氯聯苯。

在香港，食物環境衛生署一直密切監察食物中的二噁英及二噁英樣多氯聯苯含量。經考慮國際慣例及本地的飲食習慣，中心在二零一六年制定大閘蟹的行動水平。每克大閘蟹可食用部分的二噁英及二噁英樣多

The Incident

In 2016, three samples of hairy crabs from the Mainland were detected to have dioxin-like polychlorinated biphenyls (DL-PCBs) exceeding the Centre for Food Safety (CFS)'s action level. Import into and sale within Hong Kong of hairy crabs from the two concerned aquaculture farms were suspended. This article introduces the current control measures of hairy crabs adopted by the CFS for ensuring the food safety.

Dioxins and DL-PCBs

Dioxins and DL-PCBs are environmental pollutants with similar toxic effects. Dioxins are ubiquitous in the environment, occurring naturally (e.g from volcanic eruptions and forest fires), as by-products of combustion and various industrial processes. DL-PCBs, on the other hand, were more related to industrial activities. Dioxins, once released, contaminate soil surfaces and aquatic sediments in streams, rivers and lakes where hairy crabs live. Hairy crabs scavenge for food at the bottom of these habits. Dioxins and DL-PCBs bioaccumulate along the food chain. The long-term cumulative risk of dioxins to health includes developmental problems in children and reproductive problems in adults as well as cancer-causing in humans.

Local Food Safety Regulations

The Public Health and Municipal Services Ordinance (Cap. 132) stipulates that all foods for sale and are intended

for human consumption should be fit for human consumption. Hairy crabs imported should comply with the local requirements including veterinary drug residues (such as nitrofurans and malachite green), metallic contaminants (such as cadmium and mercury), synthetic hormones, colouring matters (such as Sudan dyes), pesticide residues, and dioxins and DL-PCBs.

In Hong Kong, dioxins and DL-PCBs in foods have been closely monitored by the Food and Environmental Hygiene Department. After considering international practices and local dietary habits, the CFS established



中心在進口、批發及零售層面抽取大閘蟹樣本作檢查及化學測試。
Hairy crabs are inspected and tested for chemicals at import, wholesale and retail levels.



氯聯苯總含量的行動水平為6.5皮克毒性當量。

進口管制

在港出售的大閘蟹主要來自內地，經內地有關當局作品質檢查後註冊的水產養殖場進口。香港近年亦有從其他地方(例如荷蘭、台灣及日本)進口大閘蟹。每批供港大閘蟹如附有由出口國家/地區的簽發機構發出的衛生證明書，均須經中心檢查。

就大閘蟹受二噁英及二噁英樣多氯聯苯污染的情況，荷蘭曾進行的一項研究顯示，荷蘭某些受污染河流的大閘蟹可能含有二噁英及二噁英樣多氯聯苯，其含量不能排除對人類健康帶來風險。此後，荷蘭有關當局禁止在該研究及其監察計劃提及的荷蘭受污染地區撈捕大閘蟹。

食物監察

中心透過其食物監察計劃，在大閘蟹當造季節進行監察。中心會跟進不合格的檢測結果，包括進行風險評估、追蹤有關大閘蟹的來源及分銷情況。根據不合格大閘蟹樣本的風險評估結果，中心或會暫停從涉事水產養殖場進口大閘蟹。中心會指令涉事本地進口商將受影響的產品下架、停售或進行回收。此外，中心會透過即時發出新聞公報及業界警報通知市民及業界並知會出口國家/地方的有關當局，以跟進源頭。

截至二零一七年十月十六日中午，共有84個大閘蟹樣本，包括11個進行二噁英及二噁英樣多氯聯苯含量總和檢測的樣本，測試結果滿意。一個從進口層面抽取來自涉事台灣桃園養殖場的有問題樣本，則被檢出二噁英和二噁英樣多氯聯苯的含量總和為每克食物9.86皮克毒性當量，超出中心的行動水平。

注意要點:

1. 二噁英及二噁英樣多氯聯苯會對人類健康造成長遠的累積風險，包括導致兒童及成人分別出現發育及生育問題，還可令人致癌。
2. 中心制定每克大閘蟹可食用部分的二噁英及二噁英樣多氯聯苯總含量的行動水平為6.5皮克毒性當量。
3. 有關大閘蟹的進口管制策略及時令監察計劃在二零一七年會繼續推行。

給業界的意見

- 向可靠的供應商採購附有由相關衛生當局發出的衛生證明書的大閘蟹。
- 透過供應鏈實施有效的國際認可食物安全管制，並確保會予以遵守。
- 不時留意食物危害問題，並採取適當步驟，只會向消費者提供安全的食物。

給市民的意見

- 從可靠的店舖或食肆購買大閘蟹。
- 要求零售商出示衛生證明書。
- 保持均衡及多元化的飲食，包括各式各樣的蔬果，避免因偏食幾類食品而攝入過量化學品。

an action level of 6.5 picograms (pg) toxic equivalent per gram in edible part of hairy crabs in 2016.

Import Control

Hairy crabs sold in Hong Kong came mainly from the Mainland, from registered aquaculture farms that have undergone quality inspection by the relevant Mainland authorities. Hairy crabs were also imported from other places, such as the Netherlands, Taiwan and Japan especially in recent years. Health certificates, if any, issued by the issuing authorities of the exporting countries/regions accompanying the consignments would be subjected to inspection by the CFS.

Regarding the contamination of hairy crabs by dioxin and DL-PCBS, a Dutch study revealed that hairy crabs from some polluted rivers in the Netherlands may contain dioxins and DL-PCBs at levels that health risks cannot be excluded. Since then, the relevant authority of the Netherlands prohibited the harvesting of hairy crabs from the polluted areas in the Netherlands as reported in the study and their monitoring programme.

Food Surveillance

As part of its Food Surveillance Programme, the CFS conducts surveillance on hairy crabs during hairy crab season. The CFS will follow up on the unsatisfactory results, including conducting risk assessment, tracing the source and distribution. Based on the risk assessment result of the unsatisfactory hairy crab sample, its importation from the concerned aquaculture farm might be suspended. The CFS would instruct the local importer concerned to remove the affected products from shelves, stop sale or initiate a recall of the affected products. The CFS would issue press release and trade alert immediately to inform the public and the trade as well as inform the relevant authority of the exporting country/place for follow-up actions at source.

As of noon of 16 October 2017, 84 hairy crab samples, including 11 samples tested for dioxins and dioxin-like PCBs, have had satisfactory test results. One unsatisfactory sample imported from the aquaculture farm in Taoyuan, Taiwan, collected at the import level, was found to contain dioxins and dioxin-like PCBs at a level of 9.86 pg toxic equivalent per gram of the food sample, exceeding the action level adopted by the CFS.

Key Points to Note:

1. The long-term cumulative risk of dioxins and DL-PCBs to health includes developmental problems in children and reproductive problems in adults as well as cancer-causing in humans.
2. The CFS established an action level of 6.5pg toxic equivalent per gram in edible part of hairy crabs.
3. The import control strategy and seasonal surveillance programme on hairy crabs would be continued in 2017.

Advice to the Trade

- Source hairy crabs from reliable suppliers with health certificates issued by relevant health authorities.
- Impose effective internationally recognised food safety controls through the supply chain and ensure the compliance.
- Keep abreast of hazards in food and take appropriate steps to provide only safe food to consumers.

Advice to the Public

- Buy hairy crabs from reliable shops or restaurants.
- Ask the retailer to show the health certificate.
- Take a balanced and varied diet which includes a wide variety of fruit and vegetables so as to avoid excessive exposure to chemicals from a small range of food items.

從食物安全角度探討抗菌素耐藥性問題

Antimicrobial Resistance (AMR) from Food Safety Perspectives

食物安全中心

風險傳達組研究主任方朗茵博士及
風險評估組吳雪兒獸醫報告

Reported by Dr. Fiona FONG, Research Officer, Risk Communication Section,
and Dr. Cherie NG, Veterinary Officer, Risk Assessment Section,
Centre for Food Safety



食物安全平台
Food Safety Platform

根據世界衛生組織(世衛)表示, 抗菌素耐藥性是指當微生物產生變異, 令原來用於治療感染的藥物無效。由於抗菌素耐藥性會引致病情延長、殘疾及死亡, 醫療程序風險提高, 以及因留院時間較長及需使用更強烈治療而令醫療成本增加, 故是一個全球公共衛生議題。鑑於抗菌素耐藥性相當複雜, 且涉及不同界別, 故應制訂全面框架以應對問題。聯合國大會已着手研究有關議題, 而各國重申會致力按世衛所編製的《全球行動計劃》制訂本身的行動計劃。在香港, 特區政府在今年推出《香港抗菌素耐藥性策略及行動計劃(2017-2022)》。本文將會從食物安全角度介紹一些有關抗菌素耐藥性的基本資料。

抗菌素耐藥性是怎樣出現?

抗菌素耐藥性通常是隨着基因變化而逐漸自然發生。然而, 人類及動物不當及過度使用抗菌素會加劇抗菌素耐藥性的發展過程。不當使用抗菌素的例子包括在欠缺專業監督的情況下, 患有病毒感染的人服用抗生素, 以及食用動物被施用抗生素以促進生長。

儘管耐藥細菌的可能傳播途徑甚多(例如人傳人、動物之間傳播、人畜互傳, 以及經食物、水及環境傳播等), 但本文只會集中探討經食物傳播的途徑。

經食物鏈傳播耐藥細菌的可能途徑示例

食物可能是耐藥細菌的傳播媒介。動物製食品可能在動物屠宰及屠體去臟期間被污染, 而植物製食品則可能被受影響的環境、水及糞肥污染(見圖)。

此外, 食物亦可能在收成後階段的不同環節被污染。食物可能因受感染的食物處理人員而被耐藥細菌污染, 特別是食物處理人員在處理食物時不遵守良好衛生規範; 又或食物透過不當的處理過程或衛生欠佳的準備環境而被耐藥細菌污染。

然而, 有海外當局指仍有需要進行進一步研究, 以確定經食物鏈接觸耐藥細菌的程度。另一方面, 若食物中的耐藥細菌增加及傳播, 相信會影響人類接觸耐藥細菌的機會。

哪種食物較高危?

我們所食用的食物源自動物及植物。世衛認為, 動物製食品是人類接觸具抗菌素耐藥性的食源性致病菌的主要途徑。一般來說, 生或未經徹底煮熟的食物較徹底煮熟的食物, 更大可能含有在初級生產時所污染的細菌, 包括耐藥細菌。

According to the World Health Organization (WHO), antimicrobial resistance (AMR) occurs when microorganisms change in ways that render the medications used to cure the infections they cause ineffective. It is a global public health concern because it can result in prolonged illness, disability and death, higher risks for medical procedures and increased cost of health care with longer stays and more intensive care required. Given its complexity and involvement in multiple sectors, AMR should be addressed by a comprehensive framework. This issue has been taken up by the General Assembly of the United Nations where countries reaffirmed their commitment to develop action plans on AMR based on the Global Action Plan on AMR developed by the WHO. Locally, the Government of HKSAR launched the "Hong Kong Strategy and Action Plan on Antimicrobial Resistance 2017-2022" this year. This article introduces some basics regarding AMR from the food safety perspectives.

How Does AMR Emerge?

AMR occurs naturally over time, usually by means of genetic changes. However, this process can be accelerated by misuse and overuse of antimicrobials in humans and animals. Examples of misuse of antimicrobials include people taking antibiotics when they have viral infection and antibiotics given to food producing animals for growth promotion, without professional oversight.

Although there are many possible routes of acquisition of AMR bacteria (e.g. within and among humans and animals, and through food, water and the environment), we focus only on the food routes in this article.

Examples of Potential Routes of Transmission of AMR Bacteria in Food Chain

Foods can act as a potential vehicle for transmission of AMR bacteria.

Foods of animal origin can become contaminated during slaughter and carcass dressing while foods of plant origin can be contaminated by affected environment, water and manures (see Figure).

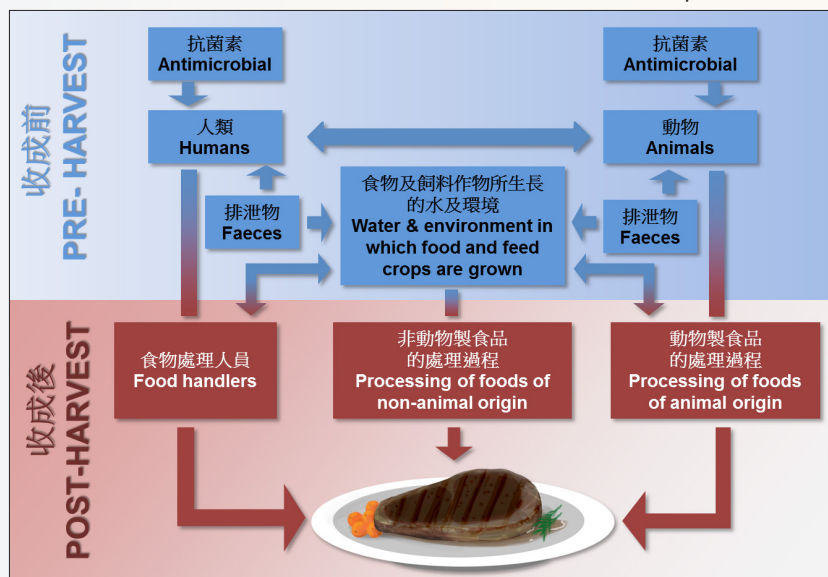
In addition, foods can also become contaminated at different points of post-harvest stage. They can be contaminated with AMR bacteria particularly if the food handlers do not observe good hygienic practices when handling foods; or through improper food processing or unhygienic food preparation environment.

Nevertheless, as indicated by overseas authorities, further research is needed to determine the extent of exposure of AMR bacteria via the food chain. On the other hand, it is believed that

any further increase in the occurrence and spread of AMR bacteria in foods is likely to have an influence on human exposure.

What Kind of Food is of Higher Risks?

The foods we eat come from animals and plants. The WHO considers that foods of animal origin represent the major route of human exposure to foodborne pathogens with AMR. In general, raw or undercooked foods are more likely to carry bacteria, including AMR bacteria, derived from the primary production than thoroughly cooked foods.



經食物鏈傳播耐藥細菌的可能途徑。資料來源: 愛爾蘭食品安全局
Potential Routes of Transmission of AMR Bacteria in Food Chain.
Source of information: Food Safety Authority of Ireland

遏止在食物鏈中出現及傳播耐藥細菌的措施

“健康一體”模式提供一個框架，協助不同界別合作防治及遏止抗菌素耐藥性。為減少在食物鏈中出現耐藥細菌，可在食物鏈上游採取措施應付。人們應按照專業意見，在牲畜飼養及人類醫藥方面明智地使用抗菌劑。

至於食物含有耐藥細菌的問題，防止人類因食物而引起感染，至關重要。世衛表示，不當處理食物會加劇抗菌素耐藥性傳播，教育人們安全處理食物是預防食源性疾病(包括遏止抗菌素耐藥性)的主要措施。為協助成員國推廣安全處理食物的行為，以及利用易於採用及適應的工具以教育所有食物處理人員(包括消費者)，世衛制訂了食物安全五要點。香港採用的食物安全五要點分別是：“選擇安全的原材料”；“保持雙手及用具清潔”；“分開生熟食”；“徹底煮熟食物”及“把食物存放於安全溫度”。所有人均應遵守，以預防食源性疾病，包括耐藥細菌造成的食源性疾病。

Measures to Contain the Occurrence and Spread of AMR Bacteria in Food Chain

The “One Health” approach provides the framework for multi-sectoral collaboration to combat and contain AMR. To reduce the emergence of AMR bacteria in the food chain, measures are taken at the upstream of the chain. Antimicrobial agents should be used judiciously and in accordance with professional advice in animal husbandry and human medicine.

With regard to the already existence of AMR bacteria in foods, it is important to prevent humans from infected with these bacteria. The WHO states that inappropriate food-handling encourages the spread of AMR and education in safe food handling is a key measure for prevention of foodborne diseases, including containing AMR. To assist Member States in promoting safe food handling behaviours and educate all food handlers and consumers, with tools easy to adopt and adapt, the WHO built the Five Keys to Safer Food Programme. The 5-keys adopted in Hong Kong are “choose safe raw materials”, “keep hands and utensils clean”, “separate raw and cooked food”, “cook thoroughly”, and “keep food at safe temperature” that everyone should observe to prevent foodborne diseases, including foodborne infections due to AMR bacteria.



跟進受氟蟲脞污染的雞蛋的工作

因應八月在雞蛋檢出除害劑氟蟲脞的事件，食物安全中心(中心)已在進口層面加強扣檢來自歐洲聯盟(歐盟)國家的禽蛋，並加強監察禽蛋的工作。

鑑於歐盟在九月二十六日就跟進雞蛋檢出氟蟲脞事件舉行部長會議，而歐盟各國亦已實施一個共同監察在禽蛋及禽肉非法使用化學物的計劃，加上有關事件並無出現新情況，中心決定在進口層面扣檢所有來自歐盟國家的禽蛋的安排收窄至五個歐盟國家，即荷蘭、比利時、德國、法國及意大利。

自事件發生後，除了早前公布的八個不合格樣本外，中心另抽取來自歐盟成員國的184個禽蛋及蛋類產品樣本作氟蟲脞測試，結果全部通過檢測。

Follow-up on Fipronil Contaminated Eggs

In response to the incident of pesticide fipronil detected in eggs in August, the Centre for Food Safety (CFS) has stepped up holding and testing of poultry eggs from European Union (EU) countries at import level and enhanced surveillance on eggs.

In view of the fact that the EU Ministerial Conference on the follow-up of the fipronil incident was held on 26 September and a co-ordinated EU-wide monitoring plan on the presence of illegally used substances in eggs and poultry meat had been implemented, as well as there was no new development of the incident, the CFS has decided to narrow the scope of the arrangement for holding poultry eggs from all EU countries for testing at import level to cover five EU countries only, namely, the Netherlands, Belgium, Germany, France and Italy.

Since the incident, other than the eight unsatisfactory samples which were announced earlier, the CFS has collected 184 samples of poultry eggs and egg products from EU member states for fipronil testing and all test results were satisfactory.

有關巴西肉類及偽造衛生證明書事件的跟進事宜

上月，食物安全中心(中心)在跟進某食物進口商早前提出的一宗投訴時，獲巴西當局證實涉及進口冷藏雞腳的衛生證明書屬偽造，涉事產品只供寵物食用。經進一步調查發現，另有九批巴西冷藏寵物食品進口香港，包括豬/牛內臟產品及豬腳。儘管有關進口商透露，該十批產品已全部運往香港以外的地方，但中心已將有關個案轉介香港警方處理，並在二零一七年九月二十一日發出新聞公報。

為保障食物安全，進口商須盡本身的責任，負責核實衛生證明書。除了從可靠的供應商採購肉類/肉類產品外，進口商必須取得由相關的合資格出口國家所發出的衛生證明書，並確保有關肉類適宜供人食用。市民宜先將肉類及內臟妥善清洗及徹底煮熟，然後才食用，以減低食物安全風險。

Brazilian Meats and Falsified Health Certificate Follow-up

Last month, when following-up on an earlier complaint lodged by a food importer, the Centre for Food Safety (CFS) received the Brazilian authorities' confirmation on a falsification of health certificate involving imported frozen chicken feet which was pet food. Further investigations revealed there were nine more similar consignments of imported Brazilian frozen pet food including pig/cattle offal products and pig feet. The concerned importers revealed that all 10 consignments were shipped out of Hong Kong. The CFS referred the case to the Hong Kong Police for investigation and issued a press release on 21 September 2017.

To safeguard food safety, importers are required to exercise their responsibility to implement verifications of health certificates. Besides sourcing meat/meat products from reliable suppliers, importers must obtain health certificates issued by relevant eligible exporting countries and ensure the meat is fit for human consumption. The public are advised to properly wash and thoroughly cook all meats and offal before consumption to minimise food safety risks.

風險傳達 工作一覽 Summary of Risk Communication Work

風險傳達工作一覽 (二零一七年九月) Summary of Risk Communication Work (September 2017)	數目 Number
事故/食物安全個案 Incidents / Food Safety Cases	81
公眾查詢 Public Enquiries	56
業界查詢 Trade Enquiries	188
食物投訴 Food Complaints	418
給業界的快速警報 Rapid Alerts to Trade	8
給消費者的食物警報 Food Alerts to Consumers	2
教育研討會/演講/講座/輔導 Educational Seminars / Lectures / Talks / Counselling	23
上載到食物安全中心網頁的新訊息 New Messages Put on the CFS Website	59