

食物安全焦點

Food Safety Focus



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Centre for Food Safety

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焦點個案

Incident in Focus

二零一三年食物事故回顧

Review of Food Incidents in 2013

食物安全中心
風險管理組
吳珏翹醫生報告

Reported by Dr. Albert KK NG, Medical & Health Officer,
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食物安全是世界各地眾多消費者共同關心的議題。食物安全中心(中心)每天均密切留意本港及海外傳媒, 以及食物安全當局報道的食物事故。為掌握更多食物事故訊息, 中心加入了國際食物安全資訊網絡, 例如世界衛生組織和聯合國糧食及農業組織轄下的國際食品安全當局網絡, 以及歐盟的食品和飼料快速預警系統。憑着中心構建的食物事故監察系統, 中心得以在發生有可能影響食物安全的事故時及時作出應變。

保障食物安全

每次出現關乎

本港市民健康的食物事故, 中心都會迅速跟進。中心會就每宗食物事故進行風險評估, 利用科學方法分析有關食物或食物配料的危害, 並評估市民面對的潛在風險。風險評估結果有助我們制定適當的風險管理決策及發放準確的風險傳達資訊, 包括聯絡有關海外當局; 向業界和市民發出警報; 派員到市面巡查以了解有關產品有否在本港出售; 抽取樣本進行測試; 發出新聞公報; 以及發起回收行動, 甚至頒布禁止令等。

二零一三年的食物事故

二零一三年, 中心一共監察到約1000宗食物事故, 數目與二零一二年相若。其中非本地個案佔大多數(98.1%)。另外約有300多宗因未有標示致敏原而發起的食物回收行動, 其中三種相關產品於本港有售。總括而言, 中心在二零一三年, 因應上述食物事故發出了287則業界警報、169則食物事故報表、14則新聞公報和10則食物警報。

Food safety is a major concern for consumers in many parts of the world. The Centre for Food Safety (CFS) monitors food incidents reported by local and overseas mass media and authorities every day. The CFS also participates in international food safety information networks, such as the International Food Safety Authorities Network (INFOSAN) established by the World Health Organization and the Food and Agriculture Organization, as well as the "Rapid Alert System for Food and Feed (RASFF)" of the European Union to further broaden our network of intelligence. The food incident surveillance system is an established channel that enables the CFS to respond readily to events with potential food safety implications.



食物事故監察系統的資訊網絡
Intelligence Network of the Food Incident Surveillance System

Safeguarding Food Safety

The CFS takes prompt follow up actions on food incidents which are of local relevance and public health significance. All such food incidents have to go through risk assessment so that hazards associated with food or food ingredients are scientifically evaluated and potential risk to the population is assessed. The risk assessment result would facilitate formulation of appropriate risk management actions and risk communication messages to protect public health, which include liaising with relevant authorities overseas, issuing alerts to the trade and public, conducting sales check and taking food samples for testing, making public announcement and initiating recall or even issuing prohibition order.

Food Incidents in 2013

In 2013, the CFS identified about 1 000 food incidents, a figure similar to that in 2012. The majority (98.1%) of the cases were incidents of non-local origin. The CFS identified some additional 300 food recalls due to undeclared allergens, of which three related products were found available locally. In response to these incidents, the CFS issued 287 trade alerts, 169 food incident posts, 14 press releases and 10 food alerts in 2013.

焦點個案
Incident in Focus

重大食物事故

以下是二零一三年引起傳媒和公眾關注的一些重大食物事故：

1. 奶粉懷疑受肉毒桿菌污染

新西蘭初級產業部在二零一三年八月初宣布，某款全球有售的奶粉的配料懷疑受肉毒桿菌污染。中心在事件中一直與新西蘭駐香港總領事館及新西蘭食物規管當局保持密切聯繫。其後有本港進口商自願回收與問題產品同一生產線的另一款奶粉以作預防。中心在市面各零售點抽取了新西蘭製造的乳製品樣本作肉毒桿菌檢測，檢測結果全部合格。考慮到事件可能造成的影響，中心特地設立電話熱線，回應市民的查詢和憂慮。八月底，新西蘭初級產業部確認有關的細菌實為一種不會產生毒素的梭狀芽胞桿菌屬菌株，相關食品沒有食物安全的危害。有關的奶粉現已恢復正常銷售。

2. 台灣食品檢出順丁烯二酸

傳媒報道台灣當局於二零一三年五月在當地的食物原材料食用改性澱粉和含此材料的食品(魚漿製品、粉麵、芋圓和粉圓等)中檢出用以提升凝結度的順丁烯二酸。中心即時與有關當局聯絡，得悉這次食物事故是由於有人濫用順丁烯二酸酐製造食用改性澱粉，澱粉其後被用作製造食品所致。根據中心進行的風險評估，以報道所述的順丁烯二酸含量，一般市民若偶爾進食有關產品，應不會對健康造成不良影響。中心亦沒有發現有受影響食物的相關批次於本港市面出售，但為審慎起見，中心亦從不同的零售點抽取了可能含食用改性澱粉的台灣進口食品樣本進行檢測，檢測結果全部合格。

3. 英國牛肉意大利千層麵含馬肉

中心在二零一三年二月接獲食品和飼料快速預警系統的通報，指英國一公司在自家品牌的牛肉意大利千層麵中檢測到馬肉基因，而有關的馬肉在生產時未曾進行所需的檢測，尤其是獸藥保泰松的檢測。中心隨即通知業界，並向英國有關機構及歐盟委員會了解情況。有關商戶當時停售了問題產品，而進口商亦自願進行回收。事件反映公眾對食品摻假和食品安全的關注。

總結

中心設立的監察及應變系統一直行之有效，使中心能及時掌握食物事故消息，並從風險評估、風險管理和風險傳達三方面擬定對策。

Important Food Incidents

The followings are examples of food incidents with media and public concern in 2013:

1. Suspected contamination of milk formula by *Clostridium botulinum*

In early August 2013, the New Zealand Ministry for Primary Industries (MPI) reported that ingredients suspected of contamination by *Clostridium botulinum* were used in the production of a milk formula sold globally. The CFS liaised closely with the New Zealand Consulate General and food authority on this food incident. A local importer then initiated a precautionary product recall on another milk formula which went through the same production line. The CFS took samples of New Zealand milk products from different local retail outlets for pathogen testing and all were tested negative. In view of the potential impact, a telephone hotline was set up to address public enquiries and concerns. By the end of August, MPI confirmed that the food incident was a false alarm as the bacteria identified was actually a non-toxin-forming strain of *Clostridium* which posed no food safety concern. The milk formula concerned has resumed normal sale afterwards.

2. Maleic acid in food products from Taiwan

Media reported that a food ingredient, modified starch, and some starch-based food products (e.g. fish paste products, noodles, taro- and tapioca-balls) had been detected by the Taiwan authority in May 2013 as containing maleic acid to increase viscosity. The CFS immediately contacted the authority concerned and was informed that it was linked to the abusive use of maleic anhydride during the production of modified starches, some of which were in turn used to manufacture food products. According to the risk assessment conducted by the CFS based on the reported levels, occasional consumption of maleic acid tainted starch-containing foods is not likely to pose any significant health risk. Moreover, no affected batches of the food products were found to be available in the local market. Nevertheless, the CFS took samples of food products which might contain modified starches imported from Taiwan from different retail outlets for testing and all test results were satisfactory.

3. British beef lasagne contained horse meat

The CFS received notification from the RASFF in February 2013 that a British company detected horse DNA in its own-brand of beef lasagne. The main concern was that the horse meat had not undergone tests appropriate to its nature, in particular the screening of a veterinary drug called phenylbutazone at the time of its production. The CFS immediately alerted the trade and liaised with relevant authorities in the UK and the European Commission. Sale of the affected product was stopped and a recall was also initiated by the importer concerned. This incident has reflected that public concerns on food authenticity incidents sometimes intermingled with food safety concerns.

Conclusion

The CFS has a food incident surveillance and response system in place to detect and manage food incidents in a timely manner through risk assessment, risk management and risk communication strategies.

風險傳達
工作一覽
Summary of
Risk Communication Work

風險傳達工作一覽 (二零一四年二月) Summary of Risk Communication Work (February 2014)	數目 Number
事故/食物安全個案 Incidents / Food Safety Cases	82
公眾查詢 Public Enquiries	74
業界查詢 Trade Enquiries	104
食物投訴 Food Complaints	332
給業界的快速警報 Rapid Alerts to Trade	1
給消費者的食物警報 Food Alerts to Consumers	1
教育研討會/演講/講座/輔導 Educational Seminars / Lectures / Talks / Counselling	34
上載到食物安全中心網頁的新訊息 New Messages Put on the CFS Website	52

燒烤食物與食物安全

Barbecued Food and Food Safety

食物安全中心
風險評估組
科學主任鍾可欣女士報告
Reported by Ms. Ho-yan CHUNG, Scientific Officer,
Risk Assessment Section,
Centre for Food Safety

上期我們探討了一些用水或油導熱的家居烹調方法，這期將圍繞燒烤食物，為大家提供一些減低有關風險的食物安全貼士。

燒烤食物

燒烤食物通常指使用乾熱方法烹煮的食物。這是一種無液體的烹煮方法，製成品帶有獨特的香味。烤焙(熱源在食物上方)、燒烤(熱源在食物下方)和烘焗(熱源來自食物的四方八面)都屬於這類烹煮方法。燒烤食物是多國菜式的招牌美食，例如中菜中俗稱“燒味”的廣東式燒烤肉類，各富特色的西式、日本、韓國、越南、土耳其和泰國串燒等。

燒烤食物的危害

燒烤食物最大的健康隱憂來自多環芳香族碳氫化合物(PAHs)及雜環胺(HCAs)這兩類在煮食過程中產生的污染物。PAHs和HCAs是兩大類有機化學物，其中一些種類已被證實或懷疑具致癌性。煮食溫度愈高，所產生的PAHs和HCAs便愈多。當食物表面接觸到超過攝氏200度的火焰時，食物中的油脂受熱分解便會產生PAHs。另一方面，食物的蛋白質成分，特別是肌酸/肌酸酐在高溫烹調時會形成HCAs。而煮食溫度低於攝氏160度所產生的HCAs則微乎其微，甚至檢測不出。

由於燒烤的溫度通常較水煮和蒸等常用的家居烹調方法為高，故燒烤食物可能含較多PAHs和HCAs。舉例來說，燒肉一般以中火至高溫火(攝氏330度以上)燒烤/烘焗，叉燒使用中火(攝氏220度以上)，燒鴨則多以中慢火(攝氏160度至200度)燒烤/烘焗。此外，其他家居烹調方法一般把食物與熱源隔開，而燒烤時的設置/設備則相反，當食物脂肪溶化後滴在熱源上(例如炭爐)，升起來的煙會把更多的PAHs帶到肉面上。一般而言，烤焙(熱源在食物上方)而成的燒烤食物所含的PAHs較少，原因是脂肪不會滴在熱源上。此外，炭和柴火這類燒烤燃料本身未充分燃燒，也可能會形成PAHs。因此，與用氣體爐燒烤或電爐烘焗比較，用炭爐燒烤會產生較多的PAHs。



用炭爐燒烤的食物或含較多PAHs
Barbecued food prepared by charcoal grilling may contain higher levels of PAHs

In the last issue, we discussed some home cooking methods in which water or oil is used as the medium of heat transfer. In this issue, we focus on barbecued food and provide tips to reduce its associated food safety risk.

Barbecued Food

Barbecued food usually refers to food cooked by dry heat methods (cooking without liquid) with a characteristic aroma. Examples of dry heat methods are broiling (involve heating food from heat source above), grilling (involve heating food from heat source below) and roasting (heating food from all sides). Lots of cuisines serve barbecued food, for example Chinese cuisine serves the Cantonese-style barbecued meat called “Siu Mei” and the Western, Japanese, Korean, Vietnamese, Turkish and Thai cuisines serve their own style of grilled food such as skewer food.

Hazards in Barbecued Food

Polycyclic aromatic hydrocarbons (PAHs) and heterocyclic amines (HCAs) are the most concerned process contaminants in barbecued food. PAHs and HCAs are two large groups of organic chemicals in which some of them are carcinogenic or probably carcinogenic to humans. Formation of PAHs and HCAs increases as temperatures rise. When food is in direct contact with a flame at temperatures above 200°C, pyrolysis of fats in food generates PAHs. HCAs are formed when components of food proteins, notably creatine/creatinine are exposed to high temperatures. Foods cooked at below 160°C generally have very low or undetectable levels of HCAs.

Barbecued food may contain higher levels of PAHs and HCAs because the cooking temperatures of barbecuing are usually higher than that of common home cooking methods such as boiling and steaming. For example, roasted pork is normally grilled/roasted with medium to high heat (over 330°C), BBQ pork with medium heat (over 220°C) and roasted duck with low to medium heat (160 – 200°C). In addition, unlike other home cooking methods which usually separate food from direct contact with the heat source, barbecue setting/equipment may allow melted fat to drip onto the heat source such as hot charcoal. This will deposit more PAHs on the food surface as the smoke rises. In general, barbecued food prepared by broiling (heat source above the food) may contain less PAHs because it prevents melted fat from dripping onto the heat source. Furthermore, incomplete combustion of fuels like charcoal or wood would generate PAHs. Therefore, barbecued food prepared by charcoal grilling may contain higher levels of PAHs than gas/electric grilling.

食物安全中心在研究中對部分乾熱和濕熱烹煮方法的煮食溫度與PAHs含量的比較

Comparison of cooking temperatures and PAHs levels between certain dry-heat and moist-heat cooking methods reported in study conducted by the Centre for Food Safety

煮食方法 Methods	例子 Examples	煮食溫度 Cooking temperatures	PAHs含量(微克/公斤) PAHs levels (µg/kg)
乾熱烹煮 Dry-heat cooking	炭爐燒烤 Charcoal grilling	最高達攝氏370度* Up to ~370°C*	燒味~ 50-150 ~ 50-150 in “Siu Mei”
	氣體爐/電爐燒烤 Gas/electric grilling	最高達攝氏315度* Up to~315°C*	燒味~ 5-10 ~ 5-10 in “Siu Mei”
濕熱烹煮 Moist-heat cooking	水煮/蒸 Boiling/ Steaming	約攝氏100度 ~100°C	水煮豬肉和鴨肉~ 1-2 ~ 1-2 in boiled pork and duck

*燒烤溫度因應食物種類而異

*Cooking temperature varies when grilling different food types.

減低風險的貼士

聯合國糧食及農業組織／世界衛生組織聯合食物添加劑專家委員會(專家委員會)認為人類從膳食攝入PAHs的估計分量對健康影響不大。但我們仍應盡可能減低PAHs的攝入量。消費者應保持均衡及多元化飲食，切勿進食過多燒烤食物。燒烤時亦不宜時間過長或溫度過高，應盡量改用水煮或蒸等烹調方式。另外，專家委員會建議燒烤時應避免食物接觸到火焰，而且熱源最好處於上方。嗜吃燒烤食物的消費者可選擇產生較少PAHs和HCAs的食物。據報肌肉組織(蛋白質)較多的食物，例如肉類、家禽和魚類在煮好後檢出較多HCAs，而其他含蛋白質的食物(例如蛋和豆腐)只含極少分量的HCAs。此外，消費者可選擇燒烤外皮不能吃的食物(例如蕃薯、帶皮的粟米、雙貝類及未剝殼的甲殼類海產)，因為外皮可防止PAHs滲入食用部位。

除了PAHs和HCAs外，燒烤食物的另一個食物安全隱憂是微生物污染。雖然用較低溫度燒烤肉類及縮短烹煮時間，可以減少PAHs和HCAs的產生，但肉類仍須徹底煮熟，以殺滅致病原。市民和業界在燒烤食物時應遵循食物安全五要點。

Tips to Reduce Risks

The Joint FAO/WHO Expert Committee on Food Additives (JECFA) concluded that the level of estimated dietary exposure to PAHs were of low concern for human health but exposure to PAHs should be as low as practicable. Consumers are advised to have a balanced and varied diet, avoid overindulging in barbecued food, not to cook food for too long or at too high temperature and may consider other cooking methods such as boiling and steaming. In addition, JECFA has recommended avoiding contact of foods with flames, and barbecuing food beneath the heat source. Consumers who would like to enjoy barbecued food may choose food types which will generate less PAHs and HCAs. It is reported that more HCAs are present in cooked foods with high muscle (protein) content, such as meat, poultry and fish while very little HCAs are found in other sources of protein (e.g. eggs and tofu). Furthermore, consumer may choose/prepare certain barbecued food with the inedible peel/shell (e.g. sweet potato and corn with peel; bivalve and crustacean with shell) when go barbecuing to prevent deposition of PAHs onto the edible portion.

Apart from the risk of PAHs and HCAs, another food safety concern of barbecued food is microbiological contamination. Although lower cooking temperature and shorter cooking time generate less PAHs and HCAs, food should be cooked thoroughly to destroy foodborne pathogens. Public and the trade are advised to follow **5 Keys to Food Safety** when preparing barbecued food.

食物事故點滴 Food Incident Highlight

麵包中的偶氮二酰胺

上月，有傳媒報道一間售賣潛艇三文治的全球連鎖店在消費者施壓下，宣布停止在美國和加拿大出售的麵包中使用偶氮二酰胺。使用偶氮二酰胺製作麵包的安全問題一時成為新聞焦點。

偶氮二酰胺是一種化學物，通常在製作發泡膠時用作發泡劑，另外也可用作食物添加劑，加強麵團的彈性。世界衛生組織認為偶氮二酰胺主要的隱憂是有引致職業性哮喘的風險，但進食含有偶氮二酰胺的麵包沒有發現會對健康構成這些影響。食品法典委員會及一些國家(如美國、加拿大、中國內地及南韓等)均就麵粉中的偶氮二酰胺含量制定了標準。

食物商在使用食物添加劑以達到理想的技術效果時，應奉行優良製造規範，並為食品加上適當的標籤。



偶氮二酰胺屬食物添加劑，在製作麵包時用以加強麵團的彈性
Azodicarbonamide is a food additive used to strengthen and enhance the elasticity of the dough for making bread

Azodicarbonamide in Bread

Last month, the media reported that a global submarine sandwich chain announced their plan to stop using azodicarbonamide in all breads sold in the US and Canada in response to consumers' petition. The issue has attracted media attention to the safety of azodicarbonamide in bread.

Azodicarbonamide is a chemical generally used as a blowing agent in the production of foamed plastics. It can also be used as a food additive to strengthen and enhance the elasticity of the dough. The World Health Organization considers that the main concern of azodicarbonamide relates to the risk of developing occupational asthma in the work environment. Nevertheless, such health effect has not been observed from the consumption of bread with azodicarbonamide. The Codex Alimentarius Commission and a number of countries (e.g. the US, Canada, Mainland China and Korea) have set standards for the use of azodicarbonamide in flours.

Traders are advised to use food additives in accordance with Good Manufacturing Practice to achieve the desired technological effect and label their food products properly.

二氧化硫與食物敏感

食物安全中心(中心)最近在食物監察行動中發現幾個醃製水果和蔬菜樣本中的二氧化硫水平超出法例標準。中心立即採取跟進行動，包括追查食物來源，要求有關商戶停售有問題食品，以及發出警告信等。

二氧化硫是一種防腐劑，普遍用於乾果、醃菜、香腸、蔬果汁、蘋果酒、醋和酒類等不同種類的食物和飲料中。雖然殘留在食物中的二氧化硫毒性很低，但對二氧化硫敏感的人有可能引起氣喘、頭痛或噁心等過敏反應。

對二氧化硫有過敏反應的人士在選購食物時應看清楚配料表上是否有二氧化硫、亞硫酸鹽及亞硫酸鹽衍生物等字樣，或有關的國際編碼系統編號(220, 221, 222, 223, 224, 225, 226, 227及228)，切勿選購含有這些化合物的食物。業界在配製食物時須遵照《食物內防腐劑規例》中的規定及奉行優良製造規範，並在食物上加上適當的標籤。

Sulphur Dioxide and Food Allergy

Recently, food surveillance conducted by the Centre for Food Safety (CFS) has revealed that several preserved fruits and vegetables samples contained sulphur dioxide at levels exceeding the legal limit. The CFS immediately conducted source tracing, suspended sale of the products and issued warning letters.

Sulphur dioxide is a preservative commonly used in a variety of foods and beverages including dried fruits, pickled vegetables, sausages, fruit and vegetable juices, cider, vinegar, wine, etc. Sulphur residues in food are considered to have low toxicity. However, it may induce allergic reactions such as asthmatic attacks, headache and nausea in susceptible individuals.

Individual sensitive to sulphur dioxide should read food labels carefully every time when shopping for food and look for the names of sulphur dioxide, sulphites and sulphite derivatives or their International Numbering System numbers (220, 221, 222, 223, 224, 225, 226, 227 and 228) on the ingredient list, and avoid all food products containing these compounds. Members of the food trade should comply with the Preservatives in Food Regulation, follow Good Manufacturing Practice and label their products properly.