

食物安全焦點

Food Safety Focus

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焦點個案 Incident in Focus

有關本港食肆及食物業的食物中毒事件 Food Poisoning Outbreaks Related to Food Premises and Food Business in Hong Kong

食物安全中心
食物事故應變及管理小組
盧大威醫生報告

Reported by Dr. Dawin LO, Medical & Health Officer,
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引言

食物中毒是本港法定須呈報的疾病之一。為保障市民健康，食物環境衛生署(食環署)聯同衛生署適時有效地處理有關食肆的懷疑食物中毒事件。本文回顧自二零零六年食物安全中心成立以來有關本港食肆及食物業的食物中毒事件，並介紹食環署有關預防食物中毒的食物安全工作。

有關本港食肆及食物業的食物中毒事件

由二零零六至零九年，食物安全中心接獲由衛生署轉介2 186宗有關食肆及食物業的食物中毒事件報告，受影響人數共8 283人(見表一及圖一)。

表一 2006-2009年由食物安全中心記錄的有關食肆/食物業的食物中毒事件數目及受影響人數

Table 1 Number of food premises / food business related food poisoning outbreaks and number of persons affected from 2006 to 2009 as recorded by CFS

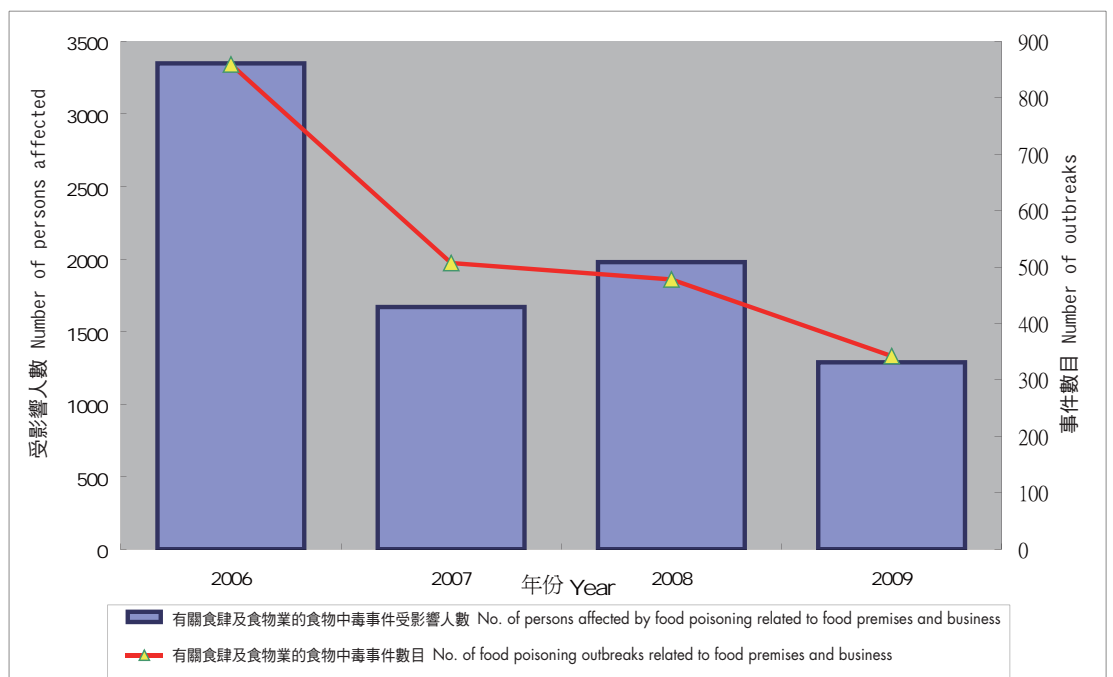
年份 Year	2006	2007	2008	2009
事件數目 Number of outbreaks	859	507	477	343
受影響人數 Number of persons affected	3 348	1 669	1 978	1 288

Introduction

Food poisoning is one of the statutory notifiable diseases in Hong Kong. To protect public health, the Food and Environmental Hygiene Department (FEHD), in collaboration with the Department of Health (DH), offers timely and effective management to suspected food poisoning outbreaks related to food premises. This article reviews food poisoning outbreaks related to food premises and food business in Hong Kong following the setting up of the Centre for Food Safety (CFS) in 2006 and introduces the food safety work to prevent food poisoning by the FEHD.

Food Poisoning Outbreaks Related to Local Food Premises and Food Business

From 2006 to 2009, the CFS received referral from the DH of 2 186 food premises and food business related food poisoning outbreaks reported and totally 8 283 persons were affected. (Table 1 & Figure 1)



圖一：2006-2009年有關食肆/食物業的食物中毒事件數目及受影響人數

Figure 1: Number of food premises / food business related food poisoning outbreaks and number of persons affected from 2006 to 2009

焦點個案
Incident in Focus

有關食肆及食物業的食物中毒事件病原體及成因

在已證實和懷疑個案的病原體方面，細菌是最常見病原體，約佔整體事件的80%；其他病原體包括病毒(9%)、生物毒素(6%)及化學物(5%)(見圖二)。至於副溶血性弧菌、沙門氏菌及金黃葡萄球菌三種細菌，則是絕大部分(約98%)已證實的細菌性食物中毒事件的原因。

絕大部分食物中毒事件是由於不當處理食物所致，而最常見五個成因分別為：(1)受生的食物/用具污染；(2)烹煮/翻熱時間不足；(3)不當貯存溫度；(4)進食生的受污染食物；以及(5)食物從業員個人衛生欠佳(見圖三)。

預防食物中毒

食環署及其下的食物安全中心(中心)在食物中毒預防工作方面一直擔任重要的角色。

a) 控制食物中毒事件

在接獲通知後，食環署會進行調查，並迅速採取控制措施，以防再有事件。這些措施包括衛生教育工作，以及口頭警告、票控以至發生大型或嚴重食物中毒事件時封閉有關食肆等執法行動。

b) 向食肆及食物業推廣食物安全

中心一向為處理壽司和刺身等高危食物的食物業從業員舉辦工作坊和講座，以推廣在食物製造過程中採用“食物安全重點控制”系統。此外，中心又針對常見的食物中毒成因推行“食物安全五要點”運動。

c) 其他食物安全工作

有關推廣食物安全的其他風險管理措施包括食肆發牌制度，定期巡視食肆和推行食物監察計劃。一旦發現違規情況，食環署人員會迅速採取風險管理行動。

結語

由二零零六至零九年，本港的食物中毒事件減少。香港特區政府一向採取果斷的管理及管制措施預防和控制食物中毒事件。不當處理食物是食物中毒事件的主要成因。業界及市民應實踐“食物安全五要點”，以消除引致食物中毒的常見成因。

Causative Agents, Contributory Factors of Food Poisoning Outbreaks Related to Food Premises and Food Business

For the causative agents from both confirmed and suspected cases, bacteria were by far the most common causative agents which accounted for about 80% of the outbreaks. Other causative agents were viruses (9%), biotoxins (6%) and chemicals (5%) (Figure 2). Three bacterial organisms, *Vibrio parahaemolyticus*, *Salmonella* spp. and *Staphylococcus aureus*, were the causes of most (around 98%) of the confirmed bacterial food poisoning outbreaks.

Most food poisoning outbreaks occurred as a result of improper food handling. The top five common contributing factors were: (1) Contamination by raw food / utensil, (2) Inadequate cooking / reheating, (3) Improper holding temperature, (4) Consumption of contaminated raw food, and (5) Poor personal hygiene of food handler (Figure 3).

Prevention of Food Poisoning

The FEHD and its CFS have been playing major roles in prevention of food poisoning.

a) Control of Food Poisoning Outbreaks

Upon notification, the FEHD conducts investigation and implements prompt control measures to prevent further outbreaks. These include health education and enforcement actions ranging from verbal warnings, summons actions to closure of the incriminated food premises in case of large scale or serious food poisoning outbreak.

b) Promotion of Food Safety in Food Premises and Food Business

The CFS has been promoting the adoption of Hazard Analysis and Critical Control Point (HACCP) system in food processing through workshops and seminars targeting food handlers who handle high-risk food items, such as sushi and sashimi. The CFS has also

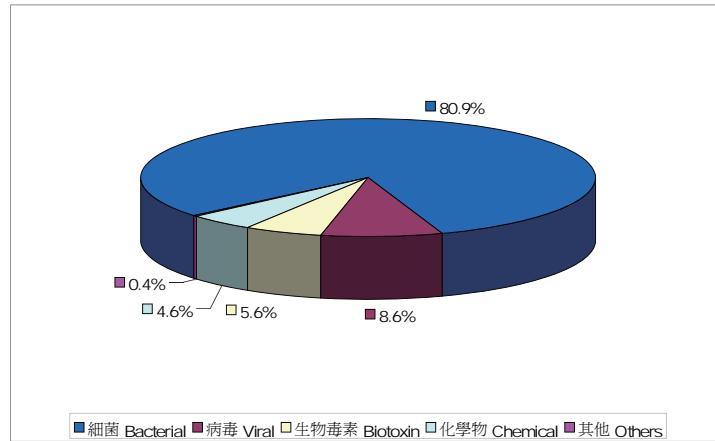
launched the “Five Keys to Food Safety” Campaign to address the common contributing factors of food poisoning.

c) Other Food Safety Work

Other risk management measures to promote food safety include licensing of food premises, regular inspection and implementation of food surveillance programme. Prompt risk management actions are carried out whenever irregularities are detected.

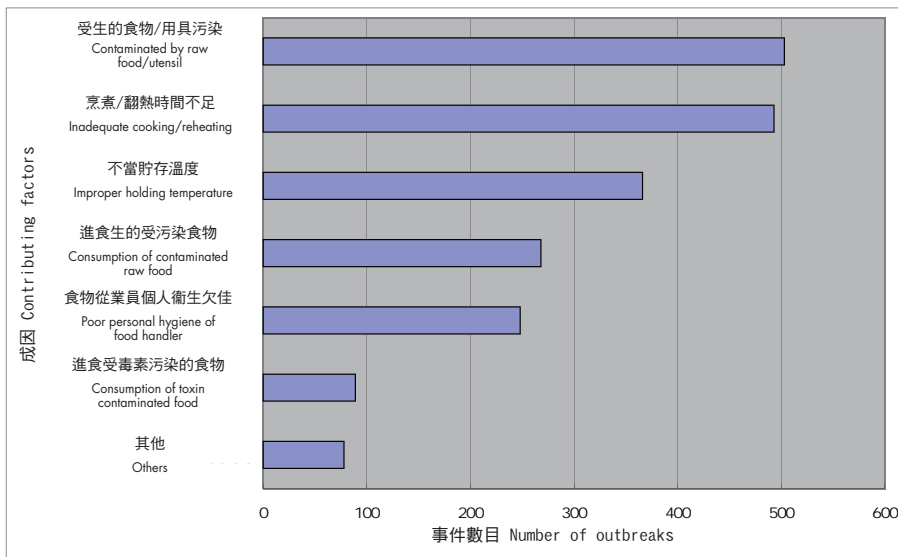
Conclusions

There was a decrease in food poisoning outbreaks from 2006 to 2009. The HKSAR Government has been taking prompt management and control measures to prevent and control food poisoning outbreaks. Improper food handling is the leading contributory factor for food poisoning outbreaks. The trade and public are advised to follow five keys for food safety to address the common contributory factors of food poisoning.



註 Notes:
* 有關數字包括已證實和懷疑個案
The figures included both confirmed and suspected cases.

圖二：2006-2009年有關食肆及食物業的食物中毒事件病原體*的統計數字
Figure 2: Statistics of causative agents* in food poisoning outbreaks related to food premises and food business from 2006 to 2009



註 Notes:
一次事件可有多於一個成因
More than one contributory factor could be identified in a single outbreak

圖三：2006-2009年有關食肆及食物業的食物中毒事件成因的統計數字
Figure 3: Statistics of contributory factors associated with the food poisoning outbreaks related to food premises and food business from 2006 to 2009

紐甜 — 高效安全的甜味劑

Neotame – A Powerful and Safe Sweetener

食物安全中心
風險評估組

科學主任馬嘉明女士及陳蓉蓉女士報告

Reported by Ms. Janny MA and Ms. Melva Chen, Scientific Officers,
Risk Assessment Section,
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我們在上一期為大家介紹了一些代糖。如果大家認為不夠甜的話，現在我們就為大家帶來喜訊！一種比砂糖甜大約7 000至13 000倍的高效甜味劑“紐甜”可能快將登陸香港！相較起現時市面上比砂糖大約甜30至2 000倍的其他甜味劑，紐甜可謂至今最甜的同類產品。

我們如何嚐出甜味？

甜味是五種基本味道之一，屬於令人愉快的體驗。我們味蕾上的甜味受體令我們嚐到甜味，而帶有甜味的物質應具有與甜味受體發生相互作用的特定結構。在大自然中，碳水化合物、某些氨基酸(蛋白質的基本組成單位)、糖苷(某些植物中的天然成分)均帶有甜味。一如帶甜味的天然物質，人工甜味劑亦具有可產生甜味的特定結構。

紐甜的發明

早期的人工甜味劑(例如糖精和天冬酰胺)是人們在許久以前意外發明的。至於較新型的甜味劑，則通常是我們根據化學知識反復試驗才發明出來。隨着天冬酰胺在市場上取得成功，食物業紛紛要求研製具有以下三種額外特性的新式甜味劑：耐熱度較高、使用限制較少和甜度較高(使用較小分量就能以較低成本獲得相同的甜度)。有見及此，科學家便根據天冬酰胺的簡單結構，人工合成出數以千種化合物，其中包括具有多種優良特性的紐甜。

紐甜小檔案

- 名稱(食物添加劑國際編碼系統編號)：紐甜(961)
- 技術用途：甜味劑及增味劑
- 甜味強度：比砂糖甜大約7 000至13 000倍
- 能量值：0千卡
- 應用：涼果、汽水、烘焙食品及各式甜點

In the past issue, we introduced to you some sugar substitutes. If you think they are not sweet enough, there is great news for you! Neotame, a powerful sweetener, about 7 000 – 13 000 times sweeter than table sugar, may set foot in Hong Kong soon! Compare with other sweeteners available in the market that are about 30 - 2 000 times sweeter than table sugar, neotame is the most potent ever.

What Makes a Substance Taste Sweet?

Sweet is one of the five basic tastes and is regarded as a pleasurable experience. The sweetness receptors in our taste buds enable us to perceive sweet taste. A substance that tastes sweet should have certain specific structures that interact with the sweetness receptors. In nature, carbohydrates, certain amino acids (the building block of protein), glycosides (natural constituents in some plants) taste sweet. Like naturally sweet substances, artificial sweeteners have specific structures that make them taste sweet.

Discovery of Neotame

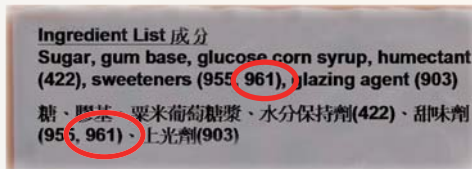
The old artificial sweeteners such as saccharin and aspartame were discovered accidentally many years ago. On the other hand, the relatively newer sweeteners were often discovered only after countless trials based on our knowledge on chemistry. Following the success of aspartame in the market, there were calls for developing a novel sweetener possessing additional qualities, i.e. higher heat stability, less restrictions on use, higher sweetness potency (less amount to achieve the same sweetness at a lower cost). As such, thousands of compounds were being synthesised based on the simple structure of aspartame. Among these compounds, neotame came up with the desirable qualities.

Portfolio of Neotame

- Name (INS number): Neotame (961)
- Technological functions: Sweetener and flavour enhancer
- Sweetness intensity: ~7 000 – 13 000 times sweeter than table sugar
- Energy value: 0 kcal
- Applications: Preserved fruits, carbonated drinks, baked goods and confectioneries.

紐甜的安全問題

甜味劑可能是意外發明的，但健康當局在關乎公眾健康的問題上絕不會冒險一試。紐甜已由國際和各國當局全面評估並確定為安全，不會引致癌症或造成任何健康影響。即使紐甜完全代替膳食中的糖，亦不會超出紐甜的“每日可攝入量”。每日可攝入量是指人在一生中每日可安全進食某物質的分量。雖然紐甜的結構與天冬酰胺相近，但紐甜可能釋出的苯丙氨酸分量卻十分有限。因此，苯丙酮酸尿症病人也可享用紐甜。



成分表中列出含紐甜的食物標籤
Food label showing a list of ingredients with neotame

Safety of Neotame

Sweeteners could be discovered by chance but health authorities will never take a chance when it is about public health. Neotame has been thoroughly assessed and determined safe by international and national authorities. It is neither cancer-causing nor associated with any adverse health effects. Even a total replacement of sugar in the diet with neotame would not result in its “acceptable daily intake” (ADI) being exceeded. ADI is the amount of a substance that is considered to be safe to eat each day during your lifetime. Despite structural similarity of neotame to aspartame, the potential release of phenylalanine from neotame is limited. Therefore, phenylketonuria (PKU) patients can enjoy neotame as well.

紐甜及常見甜味劑的安全問題

Safety of neotame and some common sweeteners

甜味劑名稱 (食物添加劑國際編碼系統編號) Name of sweetener (INS* No.)	每日可攝入量 (每日按每公斤體重 可攝入多少微克) ADI mg/kg body weight/day	大約甜度 (砂糖的相對甜度 =1) Approximate sweetness (relative to table sugar =1)	1名60公斤重的人需飲用多少罐 無糖汽水*才達到每日可攝入量 No. of cans of diet soda* to reach ADI for a 60 kg person
紐甜 Neotame (961)	0 - 2	7 000-13 000	24
天冬酰胺 Aspartame (951)	0 - 40	180	12
醋磺內酯鉀 Acesulfame Potassium (950)	0 - 15	200	5
三氯半乳糖 Sucralose (955)	0 - 15	600	15

* 食物添加劑國際編碼系統
International Numbering System for Food additives

- 假設一罐普通汽水含有35克砂糖，而代替砂糖的甜味劑所需分量與其甜味強度相稱。
Assuming a regular soda contains 35 g table sugar and the amount of sweeteners to replace the table sugar is in proportion to their sweetness intensity.
- 有關飲用量旨在探討甜味劑的安全問題，並不代表每天飲用如此大量汽水符合均衡飲食的原則。
These volumes are related to the safety of the sweeteners and do not imply that such large daily volumes of carbonated drinks are appropriate in a balanced diet.

愈甜愈好？

由於紐甜的甜度較現有的經准許甜味劑為高，大家可能會問，使用人

The sweeter the better?

As neotame is more potent than currently permitted sweeteners, you may wonder why don't all food products with artificial sweeteners use neotame instead. Well,

工甜味劑的所有食品何不全都改用紐甜呢？其實，甜味強度只是甜味劑的味道特性之一。相較起砂糖，紐甜在入口後散發甜味的速度較慢，並有令部分人不喜歡的輕微、持久後甜感。直至今日為止，沒有一種甜味劑能產生與砂糖完全一樣的味道。不過，在某些食物或飲料中混合使用不同的人工或天然甜味劑，可能會產生與糖非常接近的味道。

紐甜的規管

食品法典委員會已批准紐甜在多種食物中用作甜味劑。直至今日為止，紐甜已成為60多個國家/地區(包括中國內地、澳洲、新西蘭、美國、加拿大以及最近才批准的歐洲聯盟)的經准許甜味劑。

本港情況

政府一向致力確保本港食物法例與國際的科學發展一致，故將於短期內把紐甜及另一種甜味劑(即甜菊醇糖苷)加入本港法例內，成為經准許甜味劑。因此，我們很快就可享用這種高效安全的甜味劑。

我們將會在下一期品嚐另一種代糖 — 甜菊醇糖苷。

sweetness intensity is only one of the taste attributes of sweeteners. Compare to sugar, neotame has a delayed sweetness and a slight lingering sweet aftertaste which is not preferred by some people. Until now, no single sweetener can copy the taste profile of sugar exactly. However, a blend of different artificial or natural sweeteners may taste very close to sugar when it is used in certain foods or beverages.

Regulation of Neotame

Codex has permitted the use of neotame as sweetener in various foods. To date, neotame is a permitted sweetener in more than 60 countries/areas such as Mainland China, Australia, New Zealand, the U.S., Canada as well as the European Union where neotame has recently been approved.

Local Situation

As part of the Government's ongoing efforts to keep the local food legislation abreast of the international and scientific developments, neotame as well as another sweetener – steviol glycosides will soon be added to our local regulation as permitted sweeteners. It is therefore not long before we can enjoy this powerful and safe sweetener.

In the coming issue, we are going to savour another sugar substitute - steviol glycosides.

食物事故點滴 Food Incident Highlight

免疫力較弱病人與食物安全

傳媒在上月報道，一名癌症病人在骨髓移植前檢查的糞便培養中驗出真菌。免疫力較弱的病人較易因進食受微生物污染的食物或藥物而患病。值得一提的是，一些對健康的人無害的微生物可能會引致

免疫力較低人士出現嚴重感染，因此，這些病人在配製食物和進食時必須留神，例如小心選購食物，檢查預先包裝食物上所列的食用日期和貯存方法，切勿購買陳列在不安全或不潔環境下的食物，以及徹底煮熟食物才進食。最後，他們應就具體的膳食建議或預防措施徵詢醫生或營養師的意見。

Immunocompromised Patients and Food Safety

Last month, it was reported that a patient with cancer was found to have positive stool culture for fungi in a pre-bone marrow transplant work-up. Immunocompromised patients are more susceptible to illness from ingesting food or medications contaminated with microorganisms. It is worth noting that some of the microorganisms that are harmless to healthy individuals may cause serious infections in **people with lower immunity**. Therefore, these patients must exercise cautions when preparing and consuming food, such as choose food carefully, check the expiry date and storage conditions listed on prepackaged food, never buy food that is displayed in unsafe or unclean conditions, and cook food thoroughly before consumption. Lastly, it is advised that they consult doctors or dietitians on specific dietary advice and precaution.

甲型肝炎與半乾番茄

自去年十一月澳洲爆發由進食半乾番茄引致的甲型肝炎感染後，法國及荷蘭在過去數月亦出現經食物傳播的甲型肝炎個案。許多個案均涉及由土耳其進口的冷藏半乾番茄，患者通常是因進食以半乾番茄作配料的三文治或沙律而染病。

甲型肝炎是由甲型肝炎病毒引起，經口糞途徑傳播，症狀可包括發燒、不適、厭食、噁心、腹痛、深色小便及黃疸，而嚴重者會出現肝臟衰竭。

食物安全中心一直與各國有關當局聯絡，以掌握事故的最新發展。本港至今並未發現有關的番茄。市民和業界應在個人和食物配製方面奉行良好衛生守則，從而預防交叉污染，並向可靠來源採購食物配料。徹底煮熟食物（如適用）仍然是殺死甲型肝炎病毒的最後關鍵一步。



半乾番茄 Semi-dried Tomatoes

Hepatitis A and Semi-dried Tomatoes

Following the hepatitis A outbreak associated with the consumption of semi-dried tomatoes in **Australia** last November, further food-borne cases of hepatitis A were reported in France and the Netherlands in the past months. In many of these cases the semi-dried tomatoes, often consumed in sandwiches or salads, were imported in a frozen state from Turkey.

Hepatitis A is caused by hepatitis A virus (HAV) and spread via the faecal-oral route. Symptoms may include fever, malaise, anorexia, nausea, abdominal pain, dark urine, jaundice, and in severe cases liver failure.

The Centre for Food Safety has been communicating with international authorities on the latest development and no affected products have been found in Hong Kong. The public and the trade are advised to maintain proper hygiene personally and during food preparation to prevent cross contamination, and to obtain food ingredients from reliable sources. Thorough cooking, wherever applicable, remains the final critical step to destroy HAV.

風險傳達 工作一覽 Summary of Risk Communication Work

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