

本期內容 IN THIS ISSUE

- ❖ 二零二一年有關食肆及食物業的食物中毒個案回顧
- ❖ 氣候變化與食物安全
- ❖ 減低幼兒因食物哽喉而窒息的風險
- ❖ 「否定聲稱」知多點
- ❖ 風險傳達工作一覽
- ❖ Review of Food Poisoning Outbreaks Related to Food Premises and Food Business in 2021
- ❖ Climate Change and Food Safety
- ❖ Minimise Choking Hazards from Foods for Young Children
- ❖ Learn More About “Negative Claims”
- ❖ Summary of Risk Communication Work

編輯委員會 EDITORIAL BOARD

總編輯
楊子橋醫生
顧問醫生(社會醫學)(風險評估及傳達)

行政編輯
吳志翔醫生
首席醫生(風險評估及傳達)

委員
張勇仁醫生 首席醫生(風險管理)
戴慶豐獸醫 高級獸醫師(獸醫公共衛生)
張偉文先生 高級總監(食物安全中心)
朱瑞燕女士 高級總監(食物安全中心)
譚秀球醫生 主管(風險評估組)
陳以信博士 高級化驗師(食物研究化驗所)

Editor-in-chief
Dr. Samuel YEUNG
Consultant (Community Medicine)
(Risk Assessment and Communication)

Executive Editor
Dr. Henry NG
Principal Medical Officer
(Risk Assessment and Communication)

Members
Dr. Terence CHEUNG
Principal Medical Officer (Risk Management)
Dr. Eric TAI
Senior Veterinary Officer (Veterinary Public Health)
Mr. W M CHEUNG
Senior Superintendent (Centre for Food Safety)
Ms. S Y CHU
Senior Superintendent (Centre for Food Safety)
Dr. Carole TAM
Head (Risk Assessment Section)
Dr. Gabriel CHAN
Senior Chemist (Food Research Laboratory)

二零二一年有關食肆及食物業的 食物中毒個案回顧

Review of Food Poisoning Outbreaks Related to Food Premises and Food Business in 2021

食物安全中心風險管理組
梁曉欣醫生報告

Reported by Dr. LEUNG Hiu Yan, Medical & Health Officer,
Risk Management Section, Centre for Food Safety

本文旨在回顧食物環境衛生署食物安全中心(食安中心)在二零二一年所接報與本地食肆及食物業有關的食物中毒個案。

This article reviews the food poisoning outbreaks related to local food premises and food business (FPOs) reported to the Centre for Food Safety (CFS) of the Food and Environmental Hygiene Department in 2021.

與本地食肆及食物業有關的食物中毒個案

食安中心在二零二一年接獲199宗轉介的食物中毒個案,合共608人受影響(見圖1)。

Food Poisoning Outbreaks Related to Local Food Premises and Food Business

In 2021, the CFS received 199 referrals of FPOs, affecting 608 persons in total. The trend has been static in recent few years (see Figure 1).

病原體及成因

在二零二一年的所有食物中毒個案中,由細菌引起的仍然佔大多數(67%),當中副溶血性弧菌(佔細菌所引起的個案總數54%)超越沙門氏菌(23%),排在細菌所引起的個案首位,其餘引起食物中毒個案的細菌是金黃葡萄球菌(11%)、蠟樣芽孢桿菌(7.6%)及產氣莢膜梭狀芽孢桿菌(3.8%)。至於病毒所引起的食物中毒個案佔總數27%,全部都涉及諾如病毒。其餘的食物中毒個案則由天然毒素(6%,例如菇類毒素、雪卡毒素等)引起。二零二一年食物中毒個案最常見的三大成因分別是「被生的食物污染」、「食用生的食物」,以及「食物未經徹底煮熟」。

Causative Agents and Contributing Factors

Bacterial foodborne agents remained the leading cause (67%) of all FPOs in 2021. *Vibrio parahaemolyticus* (54% of all bacterial cases) overtook *Salmonella* (23%) and became the leading bacterial cause. Other bacterial causes are *Staphylococcus aureus* (11%), *Bacillus cereus* (7.6%) and *Clostridium perfringens* (3.8%). Viral causes accounted for 27% of all the FPOs, all being Norovirus. Biochemical causes (6%) (e.g. mushroom toxins, ciguatera toxins, etc.) accounted for the remaining FPOs. “Contamination by raw food”, “raw food consumed” and “inadequate cooking” were the three most frequently identified contributing factors.

Highlights on Major Epi-linked Food Poisoning Outbreaks in 2021

The CFS identified an increase in FPOs related to raw oysters in 2021. 101 outbreaks (with 326 affected persons) were recorded in 2021, in comparison to the five-year average of 24 outbreaks per year in the period 2016-2020 (see Figure 2). Live oysters were the incriminated food of the raw oysters FPOs in 2021 and storage temperature and wet storage were the main issues identified.

The largest cluster comprised of 32 epi-linked FPOs involving a restaurant and affecting 99 persons

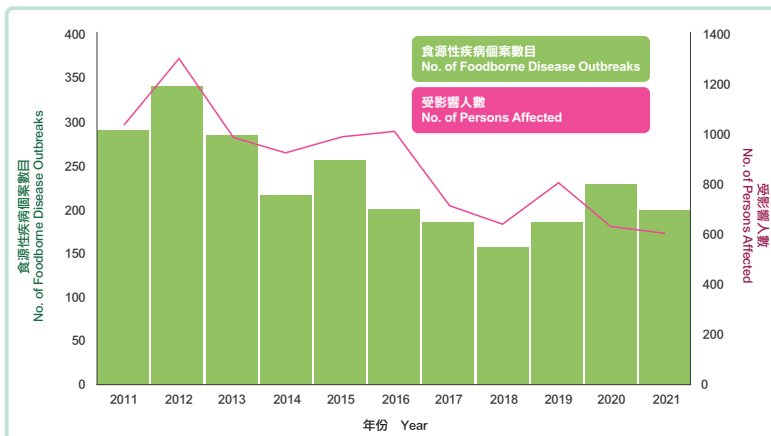


圖1:二零一一年至二零二一年有關食肆及食物業的食物中毒個案數目及受影響人數

Figure 1: Number of food poisoning outbreaks related to food premises and food business (FPOs) and the corresponding number of persons affected from 2011 to 2021

二零二一年發生的大規模流行病學關連食物中毒個案摘要

食安中心發現，與生蠔有關的食物中毒個案在二零二一年增加，年內共錄得101宗個案(326人受影響)，而二零一六年至二零二零年期間的五年平均數目則為每年24宗(見圖2)。在二零二一年生蠔有關的食物中毒個案中，涉事食物都是活生的蠔，主要涉及的問題是貯存溫度及以水存養。

二零二一年最大規模的集體食物中毒事故在十月於一間食肆發生，涉及32宗流行病學關連食物中毒個案，共99人受影響。這些個案證實由副溶血性弧菌所引起，其中一種涉事食品是生蠔。

貯存溫度的重要性

據上述集體食物中毒事故的實地調查發現，食肆用於貯存即食海產的雪櫃出現問題。食肆員工表示他們注意到，這些雪櫃在涉事生蠔供患者食用當前兩三天已出現故障，溫度高於攝氏4度，而且雪櫃內存放過多食物，影響了冷凍能力。

以水存養的問題

在二零二一年涉及生蠔的食物中毒個案中，發現有多宗個案與以水存養生蠔的做法有關，包括把不同來源地的生蠔混合浸入同一水缸中。有一名患者的糞便樣本驗出對諾如病毒呈陽性反應。食安中心在注意到這種做法後，已指令涉事的進口商/供應商停止有關做法，並棄掉該些重新浸入水中的生蠔。

以水存養是指把活生的蠔浸入水中或透過大量灑水來暫存。食品法典委員會在其《魚類及魚類製品操作規範》中訂明，活生的雙殼貝類軟體動物在包裝和離開分銷中心後，不得重新浸入水中或以水噴灑。生蠔出口國的食物主管當局普遍反對生蠔出口後以水存養，歐洲聯盟則禁止在包裝後把生蠔重新浸入水中存養。

蠔與食物安全風險

蠔是濾食性動物，體內積聚在周圍海水中的致病微生物，例如細菌(例子：副溶血性弧菌)及病毒(例子：諾如病毒和甲型肝炎病毒)。這些病原體可在攝氏4度以上的溫度下迅速生長。要抑制這些有害微生物生長，適當的貯存至關重要。此外，進食未經徹底煮熟的蠔會有食物中毒風險，特別是高危人士，例如長者、幼兒、孕婦或免疫力弱病人。

結語

有關食肆及食物業的食物中毒個案數目及受影響人數在二零一二年至二零一八年大致上呈下降趨勢，但有關數字在過去三年變化不大。在二零二一年，由於疏忽生蠔的食物安全措施而導致多宗食物中毒個案發生，大大增加了有關數字。由此可見，即使只有少數食物商疏忽衛生措施，也可影響大批消費者。

為了減低風險，無論是堂食或購買生蠔，都應光顧可靠的持牌處所。市民切勿生吃只供熟食(即須烹煮)的蠔隻。業界應注重衛生措施，並停止以水存養生蠔的做法。

in October 2021 of the incriminated food items. The outbreaks were confirmed to be caused by *Vibrio parahaemolyticus*.

The Importance of Storage Temperature

Field investigation of the above-mentioned FPO cluster revealed that the refrigerators for ready-to-eat seafood at the restaurant were defective. According to the restaurant staff, the refrigerators had been malfunctioning for two to three days before the date of consumption of affected persons and the temperature was noted to be higher than 4°C by them. The refrigerators were overfilled with food, affecting their cooling ability.

Pitfalls of Wet Storage

The practice of wet storage of raw oysters, including mixing and immersing different origins of raw oysters in the same tank, was identified in a number of FPOs involving raw oysters in 2021. The stool sample of an affected person was tested positive for Norovirus. After noting the practice, the CFS instructed the concerned importer/supplier to cease such practice and discard the re-immersed raw oysters.

Wet storage refers to the practice of storing live shellfish temporarily by submerging them under water or heavy spraying. In its Code of Practice for Fish and Fishery Products, the Codex Alimentarius specifies that live bivalve molluscs must not be re-immersed in or sprayed with water after they have been packaged and left the distribution centre. In general, food authorities of oyster-exporting countries are against wet storage of oysters following export. In the European Union, re-immersion of oysters following packaging is prohibited.

Oyster and Food Safety Risk

Oysters are filter feeders which concentrate disease-causing microorganisms, such as bacteria (e.g. *Vibrio parahaemolyticus*) and viruses (e.g. norovirus and hepatitis A virus) from the surrounding seawater. These pathogens can grow rapidly at temperatures above 4°C. Proper storage is critical to controlling the growth of these harmful microorganisms. Furthermore, consuming oysters without thorough cooking poses a risk of food poisoning, particularly for susceptible individuals such as the elderly, young children, pregnant women or immunocompromised patients.

Conclusion

The number of FPOs and number of persons affected related to food premises and food business showed a general decreasing trend from 2012 to 2018, but the figures remained somewhat static in the past three years. In 2021, lapses in food safety practices in relation to raw oysters led to a number of outbreaks which added significantly to the toll. This illustrates that lapses in hygiene practices by a small sector of the trade can affect a large number of consumers.

To reduce risk, raw oysters should only be consumed in or obtained from reliable licensed premises. The public should not eat oysters raw that are intended for consumption after cooking. The trade should be reminded of the importance of hygiene practices and do not practise wet storage of raw oysters.

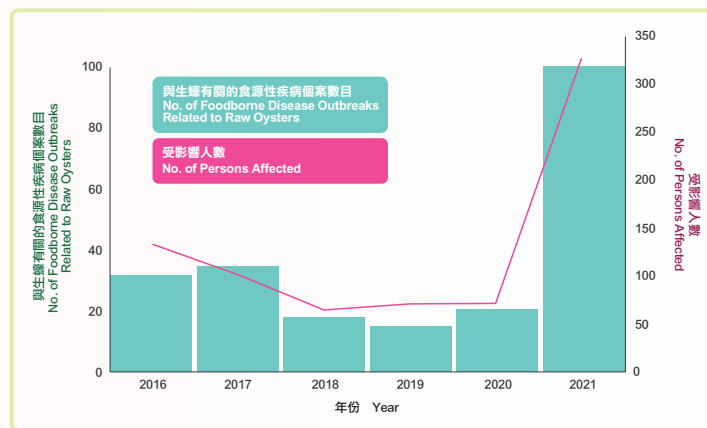


圖2: 二零一六年至二零二一年與生蠔有關的食物中毒個案數目及受影響人數
Figure 2: Number of food poisoning outbreaks related to raw oyster and the corresponding number of persons affected reported from 2016 to 2021

氣候變化與食物安全

Climate Change and Food Safety

食物安全中心風險傳達組
科學主任鄧紹平博士報告

Reported by Dr. Anna SP TANG, Scientific Officer,
Risk Communication Section, Centre for Food Safety

氣候變化為食物安全領域帶來了新挑戰。糧食及農業組織已提出，必須充分關注如何因應極端天氣事件所引起的情況確保食物安全和做好準備，而國際社會對此的關注亦有所提高。本文將探討氣候變化的影響，以及我們可以如何減輕這些事件所帶來的食物安全風險。

與氣候變化有關的食物安全事宜

氣候變化對食物安全問題的發生頻率及嚴重程度有多方面不同的影響。一項環境條件已足以對不同的污染物產生一系列的影響，舉例來說，當氣溫上升，便會增加食源性微生物的生存機會，以及改變化學污染物產生的模式(見圖3)。

食源性病原體及寄生蟲

極端氣溫、降雨及其他環境因素都會影響食源性病原體及寄生蟲的地理分布和持續存活。舉例來說，由沙門氏菌及彎曲菌引起的感染與氣溫上升有密切關係。弧菌則是食用生或未煮熟的海產時引致感染的主要食源性病原體，有時更會致命。海水變暖和海平面上升有利於這種細菌的生長和傳播，導致產蠔地區回收生蠔的情況更為常見。

霉菌毒素

隨著氣溫較冷的區域變得較暖，因而更有利於農業運作，農業害蟲及有害的真菌找到了新的家園。黃曲霉毒素曾被認為只會肆虐於熱帶地區，但現已擴展至其他地理區域及地區。貯存及運輸基建不足，特別是在氣候變化的情況下，增加了黃曲霉毒素及赭曲霉毒素等霉菌毒素生長和傳播的風險。

有害藻華

藻類是水生生態系統的固有部分，但由於氣候變化引致海面溫度上升，造成藻華更頻繁地出現。這些藻華有可能阻擋所有其他海洋植物及生物接觸陽光。當藻華死亡和分解時，會耗盡水域內的氧氣供應，使水域不適合其他生物生存。此外，某些藻類會產生對魚類、貝類、海洋動物及鳥類有毒的毒素。當攝入後，這些藻類毒素可在魚類及貝類體內累積，導致人類進食後出現中毒症狀，例如由雪卡毒素引起的雪卡毒中毒，這是太平洋地區的一個主要食源性問題。

食物鏈中的環境污染物及化學物殘餘

魚類中的甲基汞是重大的公共衛生問題，因為甲基汞對人類的神經、免疫及消化系統具有毒性，還會對兒童在胎兒及早年發育的階段構成威脅。海洋暖化會促進汞的甲基化，其後被魚類及海洋哺乳動物吸收，因而增加人類的攝取量。在陸地上，暴雨會令周圍地區受到各種有害金屬的污染，危及食物及食水的品質。此外，土壤溫度升高，可促使植物吸收更多有害金屬，例如稻米中的砷。降雨模式轉變和氣溫上升，亦可促使農作物害蟲及人畜共通微生物進入新的地域，導致

Climate change poses new challenges in the area of food safety. The need for adequate attention to ensure food safety and preparedness to manage situations arising from extreme weather events has been addressed by the Food and Agriculture Organization and has raised awareness in the international communities. Here, we will go through the implications of climate change and how we can mitigate the food safety risks posed by these events.

Food Safety Issues Related to Climate Change

Climate change has a number of different effects on the frequency and severity of food safety problems. A single environmental condition, such as rising temperatures, can have a range of effects on different contaminants—for example, increasing the survival chances of foodborne micro-organisms as well as modifying the patterns of occurrence of chemical contaminants (Figure 3).

Foodborne Pathogens and Parasites

Extreme temperature, precipitation and other environmental factors all have an impact on the geographic distribution and persistence of foodborne pathogens and parasites. Infections caused by *Salmonella* and *Campylobacter* species, for example, are strongly linked to rising temperatures. *Vibrio* species are significant foodborne pathogens that cause infections, sometimes deadly, when raw or undercooked seafood is consumed. Warming waters and rising sea levels favour the growth and spread of this bacterium, leading to more frequent recalls of raw oysters in oyster-producing areas.

Mycotoxins

With cooler temperate zones becoming warmer and hence more favourable to agriculture, agricultural pests and hazardous fungal species are finding new homes. Aflatoxins, which were once thought to be a concern only in tropical places, are now well established in other geographical zones and regions. Inadequate storage and transportation infrastructure, particularly under climate change conditions, is increasing the risk of the development and spread of mycotoxins such as aflatoxin and ochratoxin.

Harmful Algal Blooms

While algae are an inherent part of the aquatic ecosystem, increased sea surface temperature due to climate change can cause the algal blooms occur more frequently. Such blooms have the potential to shade out all other maritime plants and creatures. When algal blooms die and decompose, they deplete the area's oxygen supply, leaving zones unsuitable to other forms of life. Additionally, certain algae species create toxins toxic to fish, shellfish, marine animals and birds. When ingested, these algal toxins can bioaccumulate in fish and shellfish, causing toxic syndromes in humans. Ciguatera poisoning, for example, is caused by ciguatoxins and is a significant foodborne issue in the Pacific region.

Environmental Contaminants and Chemical Residues in the Food Chain

Methylmercury in fish is a significant public health concern because it is toxic to humans' nervous, immune and digestive systems. It also poses a threat to a child's development both in utero and in early life. Ocean warming promotes mercury methylation and subsequent uptake by fish and marine mammals, thereby increasing human exposure. On land, severe rains can contaminate the surrounding area with a variety of hazardous metals, jeopardizing food and water quality. Additionally, higher soil temperatures can facilitate harmful metal uptake by plants, such as arsenic in rice. Shifting rainfall patterns and rising

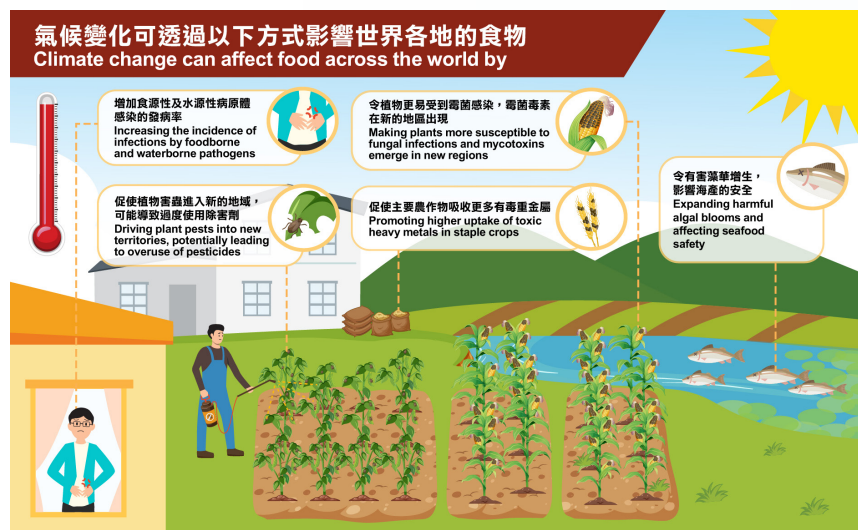


圖3: 氣候變化如何影響食物安全(參考來源:糧食及農業組織)
Figure 3: How climate change can affect food safety (Reference: The Food and Agriculture Organization)

食物中過度使用除害劑及獸藥。

由於食源性疾病種類繁多，加上氣候變化對發生這些疾病的影響，各方持份者必須合力確保食物安全，這需要食物業遵循良好作業指引和建立有效的食物安全制度，以生產安全的食品，也需要食物安全專家管理氣候變化下的食物污染風險。對於在氣候變化的影響下保障食物安全，消費者同樣發揮重要作用。世界衛生組織制訂了「[食物安全五要點](#)」，在氣候變化等環境問題日益嚴峻的情況下，為從農場到餐桌應對食源性疾病提供了以實據為本、清晰而簡單的訊息。為了讓消費者在可持續的食物系統中選擇健康的食物，有賴各方的同心協力，包括政府機構、農產食品業、消費者組織、傳媒、教育工作者及科學界。食物安全中心會繼續監察市面上食物中的污染物含量。

temperatures can also drive crop pests and zoonotic microorganisms into new territories, leading to the overuse of pesticides and veterinary drugs in foods.

Because of the wide variety of foodborne illnesses and the impact that climate change has on their occurrence, various stakeholders have to work together to achieve food safety. It takes the food industry to adopt good-practices guidelines and establish effective food safety systems to make safe food, and food safety experts to manage food contamination risks under climate change. Likewise, consumers have a critical role to play in the context of climate change's consequences for securing food safety. The [Five Keys to Food Safety](#), developed by the World Health Organization, provides evidence-based, clear and simple messages on addressing foodborne diseases from farm to table amid increasingly challenging environmental issues such as climate change. Empowering consumers to make healthy food choices within the context of sustainable food systems is a collaborative effort including government agencies, the agri-food sector, consumer associations, media, educators and the scientific community at large. The Centre for Food Safety will continue to monitor the market for levels of contaminants in food.

減低幼兒因食物哽喉而窒息的風險 Minimise Choking Hazards from Foods for Young Children

幼兒哽喉窒息的事時有報道。基於食物的大小、形狀及質地，有些食物較為容易哽喉而引致窒息，尤其是五歲以下的幼兒。

一般來說，某些食物應避免讓幼兒進食，例如蒟蒻(硬)果凍、年糕、湯圓、香口膠、棉花糖、硬糖或黏韌的糖果、冰塊、原粒果仁，也要避免讓幼兒直接進食應作為塗抹醬食用的花生醬及果仁醬。

為了減低幼兒被某些食物哽喉而窒息的風險，可採取以下措施：硬的蔬菜(紅蘿蔔、青瓜等)切成幼條，大或結實的水果(蜜瓜、蘋果等)切成薄片，如果兒童較為年幼，可把這些蔬果烹煮或搗碎來使之軟化。削掉蔬果的外皮。細小的果實(葡萄、櫻桃、漿果、車厘茄等)切成小塊。在準備水果時，檢查有沒有果籽或果核的碎片。肉腸去皮並切成薄片。麵包切成薄條。

Incidents of choking in children have been reported from time to time. Because of the size, shape and texture, some foods are more likely to cause choking. This is especially true for young children under five years old.

In general, some foods like konjac (hard) jellies, Lunar New Year puddings, glutinous rice balls, chewing gum, marshmallows, hard or sticky candies, ice cubes, whole nuts and direct consumption of peanut butter and nut spreads without spreading should be avoided.

Measures can be taken to reduce the choking risk of certain foods consumed by young children. Cut hard vegetables (carrots, cucumbers, etc.) into narrow sticks and large or firm fruits (melons, apples, etc.) into slices. Soften them by cooking or mashing for younger children. Peel the skins of fruits and vegetables. Cut small fruits (grapes, cherries, berries, cherry tomatoes, etc.) into small quarters. Check for fragments of pips or stones when preparing fruits. For sausages, remove the skin and slice them thinly. Cut breads into thin strips.

「否定聲稱」知多點 Learn More About "Negative Claims"

「否定聲稱」常見於預先包裝食品。一些食品聲稱「不含」某些物質，例如「不含麩質」的穀類產品。這些成分並非食品固有的，或是已從製成品中去除。其他聲稱強調不添加某些成分，例如「不加防腐劑」的豉油，意即在生產過程中沒有添加防腐劑。

這些聲稱的含義可能各有不同。業界應審慎作出「否定聲稱」，不應誤導消費者，並要避免令人對產品的成分組合有錯誤印象。值得注意的是，有些成分天然存在於食品中，例如酵母萃取物中的味精及蔬菜中的硝酸鹽。聲稱在食品中沒有添加天然存在的成分是[不可取](#)的做法。此外，業界應注意[法例](#)對若干聲稱有特定要求。

市民應查閱和了解「否定聲稱」，以作出知情的選擇。

"Negative claims" are commonly found in pre-packaged foods. Some claims are about food products being "free from" certain substances such as "gluten-free" cereals. These ingredients are either not inherent in the food or have been removed from the final food. Other claims stress no addition of certain ingredients like "no preservatives added" in soy sauce, which means that they are not added during production.

These claims may have different meanings. The trade should be vigilant about making "negative claims", which should not be misleading and should avoid giving consumers erroneous impressions about the composition of products. Of note, some ingredients are naturally found in foods like monosodium glutamate in yeast extract and nitrate in vegetables. It is [undesirable](#) to make claims about not adding an ingredient that is naturally present in the food. Besides, the trade should be aware that there are specific requirement in the [legislation](#) for certain claims.

The public is advised to check and understand the "negative claims" for making informed choices.



風險傳達工作一覽 (二零二二年一月)

Summary of Risk Communication Work (January 2022)

事故/ 食物安全個案 Incidents/ Food Safety Cases: 136	公眾查詢 Public Enquiries: 78	業界查詢 Trade Enquiries: 141	食物投訴 Food Complaints: 299	給業界的快速警報 Rapid Alerts to Trade: 5
給消費者的食物警報 Food Alerts to Consumers: 4	懷疑食物中毒個案通報 Suspected Food Poisoning Alerts: 0	教育研討會/ 演講/ 講座/ 輔導 Educational Seminars/ Lectures/ Talks/ Counselling: 19	上載到食物安全中心網頁的新訊息 New Messages Put on the CFS Website: 37	