



由食物環境衛生署食物安全中心於每月第三個星期三出版
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食物安全中心

風險管理組

科學主任邱頌韻女士報告

Reported by Ms. Joan YAU, Scientific Officer,
Risk Management Section,
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台灣當局在四月中公布當地市面上多款茶葉／花茶樣本的除害劑殘餘量不符合當地有關規管標準，事件引起公眾關注。本文將對茶類產品中的除害劑殘餘、規管措施及食物安全中心（中心）採取的跟進行動作一概述。

茶類產品中的除害劑殘餘

正確施用除害劑能減輕有害生物對農作物所造成的損害，並提高農作物的產量。即使完全依照優良務農規範施用了除害劑或受環境污染的農作物（包括茶類產品），亦有可能殘留少量除害劑。

規管茶類產品的除害劑殘餘

食物安全規管當局通常會就食物中的除害劑殘餘制定標準，稱為“最高殘餘限量”。這些標準是參考優良務農規範中有關除害劑的核准施用條件而制定，是法定准許除害劑在食物中殘留的最高含量。由於各國的情況不同（例如有害生物的種類和環境狀況），各國就個別除害劑的核准優良務農規範未必相同，因此各自或會制定出不同的最高殘餘限量。食品法典委員會制定的食物標準被視為國際參考準則，該會亦一直致力建立一套國際統一的最大殘餘限量標準，以保障消費者的健康及促進國際貿易。

雖然制定最高殘餘限量主要是為了保障消費者的健康，但人們不應把這些標準直接看成“食物安全上限”。只要從食物中攝入的除害劑總分量低於健康參考值（在《食物內除害劑殘餘規例》（第132CM章）（《規例》）中稱為安全參考值），即使吃下的個別食物其除害劑殘餘水平超出最高殘餘限量，亦未必表示健康會受損，只是反映了農民沒有遵從優良務農規範的規定。事實上，在大部分情況下，即使除害劑殘餘超過最高殘餘限量，公眾的健康都沒有受到影響。

在香港，食物中的除害劑殘餘受二零一四年八月一日起實施的《規例》規管。考慮到香港十分倚賴進口食物，《規例》主要採納由食品法典委員會釐定的可用標

Announcements by Taiwan authorities in mid-April that levels of pesticide residues in a number of tea leaf/floral tea samples available in Taiwan not complying with their regulatory standards have sparked concerns among the public. This article provides an overview of pesticide residues in tea products, regulatory measures and follow-up actions taken by the Centre for Food Safety (CFS).

Pesticide Residues in Tea Products

Proper use of pesticides can reduce crop damage by pests and increase the crop yield. Small amounts of pesticide residues may inevitably remain in crops, including tea products, despite following their application under Good Agricultural Practice (GAP) or as a result of environmental contamination.

Regulation of Pesticide Residues in Tea Products

Food safety authorities usually set standards, known as the “Maximum Residue Limits (MRLs)”, for pesticide residues in food. These standards are the maximum legally permitted levels that are established with reference to the authorised use condition of pesticides according to GAP. As the conditions in different countries (e.g. pest types and environmental conditions) are different, the approved GAP for individual pesticide may not necessarily be the same and therefore different MRLs may be established. The Codex Alimentarius Commission (Codex), the international reference point for developing food standards, has strived to establish internationally harmonised MRLs so as to protect the consumers' health and promote international trade.

Although the primary objective of setting MRLs is to protect consumers' health, these standards should not be treated directly as the “food safety limits”. A residual level exceeding the MRL is more a reflection of non-compliance with GAP rather than an implication that consumers' health is at risk, provided that the total dietary intake of that particular pesticide falls below the health-based guidance values (also called “safety reference values” under the Pesticide Residues in Food Regulation (Cap. 132CM) (the Regulation)). In fact, in most instances, public health is not at risk even though MRLs have been exceeded.

In Hong Kong, pesticide residues in food are subject to control under the Regulation which has come into operation on 1 August 2014. Recognising the fact that Hong Kong relies heavily on imported food, the standards laid down in the Regulation was formulated primarily on the available Codex standards, supplemented by available

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焦點個案
Incident in Focus

準，並以內地和向香港出口食物的其他主要國家當時可用的相關標準作補充，同時亦考慮了公眾諮詢期間所收集到的意見。中心進行了風險評估，進一步審視這些標準，確保這些標準足以保障香港市民的健康。

《規例》的原則是，除獲豁免除害劑外，如食物含有除害劑殘餘但《規例》中並沒有訂明相關的標準，只有在風險評估結果顯示食用有關食物不會危害或損害健康的情況下，才可進口或售賣有關食物。中心亦會根據檢出的除害劑殘餘分量，評估有關除害劑是否施用不當。

由於應用於農作物的除害劑推陳出新，適用範圍又不斷改變，不難理解《規例》沒有可能鉅細無遺，中心會根據國際上的最新發展和持份者的建議，更新《規例》的標準。

中心採取的行動

中心除聯絡台灣有關當局了解事件外，並已即時加強檢測本港茶類產品中的除害劑殘餘及主動聯絡相關商戶，以了解有關產品有否進口本港。

因應台灣茶類產品事件，中心由今年四月二十一日至六月十六日共抽取了228個樣本作除害劑殘餘檢測，除了一個茉莉花茶樣本含百萬分之零點四一的三唑磷外，其餘樣本全部合格。按該樣本驗出的除害劑含量，在正常食用情況下，不會對健康造成不良影響。

由於事件在台灣仍未結束，本港的調查仍在進行中。消費者和業界人士可留意中心網頁公布的最新資料。

注意要點

- 即使是正確施用，農作物亦有可能殘留少量除害劑。
- 食物內的除害劑殘餘標準有必要因應國際上的發展和新興的除害劑施用適時更新。
- 偶爾吃下除害劑殘餘超標的食物未必表示健康會受損。

給業界的建議

1. 若懷疑擁有涉事產品，應停止出售並立即與中心聯絡。
2. 確保茶類產品符合《規例》要求。

給市民的建議

1. 如已購買涉事產品，應停止食用。
2. 茗茶時棄掉第一泡茶理論上是可除去部分灰塵、微生物和化學物(包括除害劑)等不良物質，但同時亦會失去一些消費者可能珍視的有益成分或精華。

standards of the Mainland and other major food exporting countries to Hong Kong at that time, while taking into consideration comments received during previous consultation exercises. These standards had been scrutinised by conducting risk assessment to ensure that they are adequate to protect public health in Hong Kong.

The general principle of the Regulation is that except for exempted pesticides, import or sale of food containing pesticide residues with no specified standards in the Regulation is only allowed if consumption of the food concerned is not dangerous or prejudicial to health with reference to the risk assessment results. The CFS will also assess whether the level detected has suggested improper use of the pesticide concerned.

As new pesticides and new applications on crops keep emerging, standards listed in the Regulation are understandably not exhaustive and will be subject to review based on the international development and proposals received from stakeholders.

Actions Taken

Apart from liaising with Taiwan authorities over the issue, the CFS has immediately enhanced surveillance on pesticide residues in tea products and contacted the relevant traders to investigate if the affected products have been imported into Hong Kong.

In connection with the above incident, the CFS has collected 228 samples for the testing of pesticide residues from 21 April 2015 to 16 June 2015. Except for a **jasmine floral tea sample** detected with triazophos at a level of 0.41 mg/kg, the other samples were found satisfactory. Based on the level detected in the sample, adverse health effects are not expected upon usual consumption.

Since the Taiwan incident is evolving, investigation by the CFS is ongoing. Consumers and traders can refer to the CFS' [website](#) for the latest information.



茗茶時棄掉第一泡茶或能除去部分不良物質，但亦會失去消費者可能珍視的有益成分或精華。

Discard the first infusion may remove some of the undesirable substances, but also remove concentrates or essences of which some consumers may treasure.

Key Points to Note

- Small amounts of pesticide residues may remain in crops even after their proper application.
- To keep abreast of international developments and emerging pesticide applications, there is a need to update the standards for pesticide residues in food as and when appropriate.
- Occasional intake of food with pesticide residue exceeding the standard does not automatically imply public health is at risk.

Advice to the Trade

1. Stop selling any product that is suspected to be affected and inform the CFS immediately.
2. Ensure the tea products complied with the Regulation.

Advice to the Public

1. Do not consume the affected products if purchased.
2. While discarding the first infusion may in theory remove some of the undesirable substances like dirt, microbes and some chemicals including pesticides, it would also remove concentrates or essences of which some consumers may treasure.

甜味劑在減少糖攝取量方面的角色 (下篇) Role of Sweeteners in Reduction of Sugar Intake (Part II)

食物安全中心
風險評估組
科學主任郭麗儀女士報告

Reported by Ms. Joey KWOK, Scientific Officer,
Risk Assessment Section,
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上期我們探討了低能量甜味劑在取代部分膳食中添加的糖中所擔當的角色及其對體重控制的影響。這期我們會探討身體對甜味的反應，以及低能量甜味劑可能對兒童的影響。

身體對甜味的反應

大家有沒有留意到，新生嬰兒嘗到甜的東西會顯得心滿意足，還會露出燦爛的笑容？科學家指出，我們的味覺已進化到能夠辨識而且偏好高能量和有甜味的食物。

糖(例如蔗糖、果糖和葡萄糖)和低能量甜味劑(如阿斯巴甜、三氯半乳糖和紐甜)與味覺受體細胞結合後會產生甜味，並刺激腦部神經，給我們帶來愉悅的感受。

對甜味的偏好

不同國家和文化背景的兒童均顯示出比成人更偏好甜度高的食物。研究結果顯示，愈早接觸添加了糖分的食物，愈容易愛好甜食，而且偏好甜度高的食物。

低能量甜味劑有可能對兒童的影響

由於兒童對食物的口味喜好仍處於形成階段，有研究人員擔心這時候進食含低能量甜味劑的食物，會對他們日後的口味喜好有影響。

此外，也有人關注兒童食用含低能量甜味劑的食物和飲料，會影響膳食的營養質素和口腔健康。

兒童不喝奶類等較有營養的飲料，而去喝甜味的飲料，無論甜味是來自糖還是低能量甜味劑，都有可能減少了兒童從膳食中吸收的營養。另外，無論是添加了糖還是低能量甜味劑的碳酸飲料都含酸性物質，經常飲用，牙齒容易遭侵蝕。

關於低能量甜味劑與長遠體重控制之間的關係始終未有一致的定論，一些觀測研究甚至指食用低能量甜味劑與體重增加有正向關聯。不過，這種情況也可能是由於超重人士或肥胖症患者更常食用低能量甜味劑所致。

低能量甜味劑是否適合的糖替代品？

對於應否建議以低能量甜味劑取代糖，各權威機構至今仍然莫衷一是。

英國國家醫療標準機構(National Institute for Health and Care Excellence)在二零一五年出版的《成人與兒童保持健康體重及避免過重》指引中鼓勵國民選擇飲用清水或不含游離糖的飲料。其他適合的飲料包括含低能量甜味劑的咖啡、茶和飲料，例如碳酸飲料或果汁飲料的無糖版本。英格蘭衛生部門(Public Health England)在二零一四年發表的《減糖：迎接挑戰》文件中建議食

In the last issue, we have discussed about the role of low-calorie sweeteners in replacing some of the added sugar in our diet and its implications for weight control. In this issue, let us look into how our bodies respond to sweet taste, and the concerns on the use of low-calorie sweeteners among children.

Response to Sweetness

Have you ever noticed when newborn infants taste something sweet, their faces relax and they give a broad smile? According to scientists, our sensory system has evolved to detect and prefer foods that are energy-rich and taste sweet.

Sugar (e.g. sucrose, fructose, glucose) and low-calorie sweeteners (e.g. aspartame, sucralose, neotame) interact with our taste receptor cells. This in turn elicits sweet taste and activates the pleasure-generating brain circuitry.

Preference for Sweetness

Across many countries and cultures, children have shown to like higher intensities of sweet taste than do adults. Research findings also suggest that early exposure to sugar-sweetened items led to an increased preference for sweetened items as well as an increased preference for higher levels of sugar in food.

Concerns on the Use of Low-calorie Sweeteners among Children

As children are at an earlier stage in developing taste preferences, some researchers are concerned that the use of low-calorie sweeteners among children may have some influence on such developing process.

Other concerns on the use of low-calorie sweeteners among children include whether or not their diet quality and oral health will be adversely affected by the consumption of food and beverages containing these sweeteners.

Intake of sweet drinks, whether they are sweetened with sugar or low-calorie sweeteners, may reduce the quality of children's diet by replacing the more nutritious drinks in the diet, such as milk. The acidity of carbonated drinks, whether they are sweetened with sugar or low-calorie sweeteners, and the frequent consumption of them, may contribute to tooth erosion.

There are inconsistent findings regarding the use of low-calorie sweeteners and long-term weight control, some observational studies even reported a positive association between consumption of low-calorie sweeteners and weight gain. Nevertheless, such association might be due to the fact that low-calorie sweeteners are more likely

to be consumed by overweight and obese individuals.

Are Low-calorie Sweeteners "Suitable" Candidates for Sugar Replacement?

It appears that consensus regarding recommendation on replacing sugar with low-calorie sweeteners is yet to be reached among different authoritative bodies.

In the United Kingdom, the National Institute for Health and Care Excellence advises in the guideline *Maintaining a Healthy Weight and Preventing Excess Weight Gain among Adults and Children (2015)* that everyone should be encouraged to choose water or other drinks that do not contain free sugars. Other suitable drinks may include coffee, tea or drinks containing low-calorie sweeteners, such as "diet" versions of carbonated drinks or squashes. Furthermore, in the document entitled *Sugar Reduction: Responding to the Challenge (2014)* published by Public Health England, it has



糖與代糖的對決
Sugar versus Sweetener

物業界可考慮改良食物配方，以甜味劑取代糖；並逐漸減少糖和甜味劑的分量，以便讓消費者的味覺慢慢適應較低的甜度。

另一方面，二零一五年的美國膳食指引諮詢委員會(2015 Dietary Guidelines Advisory Committee)在其科學報告中指出，飲食中的糖分必須減少，但不是通過改用低能量甜味劑，而是選擇飲用其他較健康的飲料，例如不喝加糖飲料，改為喝水。

給業界的建議

1. 改良產品配方，減少添加糖／甜味劑。
2. 可考慮在部分產品（如加糖飲料）中使用低能量甜味劑取代糖。

給市民的建議

1. 用膳時減少在食物中添加糖／甜味劑。
2. 想食用甜味的食物或飲料時，可考慮選擇無糖或含低能量甜味劑的產品。

been put forward to the food industry for consideration that, where reformulation is possible it could include the replacement of sugars with sweeteners and the gradual lowering of levels of both sugar and sweeteners. The latter would have the advantage of allowing tastes to adapt to a lower level of sweetness.

On the contrary, in the United States, the 2015 Dietary Guidelines Advisory Committee has stated in its Scientific Report that added sugar should be reduced in the diet and not replaced with low-calorie sweeteners, but rather with healthy options, such as water in place of sugar-sweetened drinks.

Advice to the Trade

1. Reformulate products with less sugar/sweetener.
2. Replacing sugar with low-calorie sweeteners could be considered an option to lower sugar content in certain products (e.g. sugar-sweetened drinks).

Advice for the public

1. Reduce the amount of sugar/sweetener added to food and drinks at the table.
2. On occasion that sweet-tasting food or beverage is to be consumed, sugar-free products or products containing low-calorie sweeteners could be considered an option.

食物事故點滴 Food Incident Highlight

生蟹中的細菌和寄生蟲

上月有六名市民據報在進食醃製生蟹後食物中毒。食物安全中心(中心)提醒市民，進食生或半生不熟的蟹會增加患上食源性疾病的風險。

生長在不同環境的蟹可能帶有不同的病原體。舉例來說，淡水蟹可能有衛氏並殖吸蟲(又稱為肺吸蟲)寄生；生長在熱帶、亞熱帶和溫帶淡水和鹹淡水域的蟹有可能感染天然存在於這些水域的霍亂弧菌；而生長在河口和近岸水域的蟹體內則可能有副溶血性弧菌。

進食了受肺吸蟲感染的生蟹或未煮熟的蟹，肺吸蟲有機會從腸道進入肺部，引致肺吸蟲病。患者初期會出現腹瀉和腹痛，幾日後可能會發燒、胸痛、昏眩，有時會咳血。有時肺吸蟲會侵入腦部，可出現腦膜炎症狀。感染肺吸蟲後，症狀一般會在數周出現，病情可持續多年。南韓的全國調查數據顯示，肺吸蟲病在上世紀六十年代一度非常普遍，到九十年代有所下降，但在本世紀初又再次上升。

進食或飲用受霍亂弧菌污染的食物或食水可令人感染霍亂，患者的排泄物更是主要的污染途徑之一。霍亂是一種急性腸胃病，潛伏期由數小時至五天不等，症狀包括嚴重的腹瀉和嘔吐，患者可能會脫水。

感染副溶血性弧菌的常見症狀包括腹瀉、嘔吐、輕微發燒及腹痛，通常於進食受污染的食物後一至兩天內出現，患者通常可於數天內康復。嚴重症狀並不常見，但較常出現於幼童、長者和免疫力較低的人身上。

一般來說，以酒、醋、豉油、蒜頭及／或辣椒等醃製生蟹都不能消滅這些細菌和寄生蟲。只有把蟹徹底煮熟，才可避免染上這些病原體引致的疾病。

中心呼籲市民避免進食生或半生不熟的蟹，例如上海菜、江蘇菜和浙江菜的醉蟹和韓國菜的醬油蟹。中心亦呼籲業界須確保其產品適宜供人食用。

Bacteria and Parasites in Raw Crabs

Last month, six persons were reported to have food poisoning following consumption of marinated raw crabs. The Centre for Food Safety (CFS) reminds the public that consuming raw or undercooked crabs increases the risk of developing foodborne illnesses.

Different pathogens may be present in crabs living in various environments. For instance, *Paragonimus westermani*, a parasite also known as lung fluke, may be present in freshwater crabs. *Vibrio cholerae* (VC), a bacterium indigenous to fresh and brackish water environments in tropical, subtropical and temperate areas worldwide, may infect crabs living in those environments. *Vibrio parahaemolyticus* (VP), another kind of bacterium, may be present in crabs living in estuaries and coastal waters.

When a person consumes raw or undercooked crabs infected with lung fluke, the parasite may migrate from the intestines to the lung causing paragonimiasis. The initial signs and symptoms may be diarrhoea and abdominal pain. This may be followed several days later by fever, chest pain, fatigue, and sometimes coughing up blood. Sometimes the fluke can travel to the brain where it can cause symptoms of meningitis. Onset of symptoms of lung fluke infection usually occurs many weeks after exposure and the disease may last for many years. In South Korea, nationwide survey data showed that paragonimiasis had been prevalent in 1960s, lowered in the 1990s, but raised again in 2000s.

Cholera is transmitted through ingestion of food or water contaminated with VC, especially via faeces of infected persons. Cholera is an acute intestinal infection. Its incubation period ranges from a few hours to five days. Symptoms include severe diarrhoea and vomiting, which may lead to dehydration.

The common symptoms of VP infection include diarrhoea, vomiting, mild fever and abdominal pain usually within one to two days upon consumption of contaminated food. The illness usually lasts a few days. Severe disease is rare and occurs more commonly in children, the elderly and persons with weakened immune systems.

In general, marinating raw crabs using wine, vinegar, soy sauce, garlic, and/or chilli cannot eliminate bacteria and parasites. Cooking the crabs thoroughly is the only way to prevent diseases caused by these pathogens.

The CFS advises the public to avoid eating raw or undercooked crabs. Examples of dishes containing raw or undercooked crabs are "drunken" crabs (raw crabs marinated in liquor) in Shanghai, Jiangsu and Zhejiang cuisines, and Ganjang-gejang (raw crabs marinated in soy sauce) in Korean cuisine. The CFS also advises the trade to ensure their products are fit for human consumption.

風險傳達 工作一覽 Summary of Risk Communication Work

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