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焦點個案 Incident in Focus

進食油魚與排油腹瀉 Oilfish Consumption and Oily Diarrhoea

食物安全中心

Reported by Ms. Joey KWOK, Scientific Officer,

風險傳達組

Risk Communication Section,

科學主任郭麗儀女士報告

Centre for Food Safety

背景

二零零七年一月二十三日，食物安全中心(中心)宣布，有多名市民報稱進食標籤為“鱈魚”的魚類後出現排油腹瀉。有關魚類懷疑是以鱈魚或相若名稱出售的油魚。中心呼籲市民和業界留意有關情況，並提醒他們進食含大量難以消化蠟酯的油魚和相關品種後可能出現的症狀。直至二零零七年一月三十一日止，中心共接獲約700宗有關此事的投訴和查詢。由於事件引起市場混亂，業界同意暫停進口和出售油魚。

魚類中的蠟酯

油魚(中文學名：棘鱗蛇鯖；拉丁學名：*Ruvettus pretiosus*或中文學名：異鱗蛇鯖；拉丁學名：*Lepidocybium flavobrunneum*)屬於蛇鯖科，是已知含有大量難以消化蠟酯的兩類較常見魚類。根據文獻記載，這些魚類所含的蠟酯約為體重的20%。由於這兩類魚不會分解其膳食中自然存在的蠟酯，於是蠟酯囤積在體內，包括魚皮和魚肉。水域和季節變異均可影響魚類中的蠟酯含量。

油魚分布於地球上不同的熱帶和溫帶水域。美國、澳洲、英國、德國和瑞典等食物當局已發出勸諭，提醒消費者和業界進食油魚和相關品種後可能出現的症狀。只有日本和意大利兩國認為有必要禁止進口和出售油魚。

要識別不同品種的魚類有時並不容易。某一種魚有時會有超過一個俗名。因此，消費者和業界應留意魚類的學名，以免誤認及誤標魚類。中心已成立工作小組，成員包括業界和學術界代表及政府官員，以制定有關識別及標籤油魚的指引。

蠟酯對健康的影響

蠟酯在人體內不會被腸吸收，導致一些消費者出現不同程度的腹瀉，例如迅速排出小量黃色或橙色油分；或嚴重腹瀉，並有噁心、嘔吐和頭痛。然而並非所有吃了這些魚類的人都會受影響。對蠟酯的敏感程度似乎是因人而異的，有些人似乎完全不受這些魚類影響，進食後不會出現任何不適。受影響人士一般會在進食魚類後30分鐘至36小時內出現症狀，並在24至48小時內痊癒。我們就70宗本地投訴個案進行了初步研究，發現約100名受影響人士中幾乎全部都有排油腹

Background

On 23 January 2007, the Centre for Food Safety (CFS) announced that cases of oily diarrhoea had been reported among members of the public after consumption of fish products labelled as "cod fish". The fish products in question were suspected to be oilfish marketed as cod fish or using names similar to cod fish. The CFS alerted members of the public and the trade to the situation and the possible health effects associated with the consumption of oilfish and related fish species which contain high levels of indigestible wax esters. As of 31 January 2007, the CFS received about 700 complaints and enquiries about the incident. Because of the resulting market confusion, the trade agreed to stop importing and selling oilfish for the time being.

Occurrence of Wax Esters in Fish

Oilfish (*Ruvettus pretiosus*) and escolar (*Lepidocybium flavobrunneum*) belong to the family of Gempylidae; they are two of the more common fish species known to contain high levels of indigestible wax esters. According to literature, these fish species contain approximately 20% by weight of wax esters. As these fish species do not metabolise wax esters that occur naturally in their diet, these wax esters are accumulated in the fish body, including the skin and muscle meat. Geographical and seasonal variation may affect the level of wax esters in the fish.

Oilfish and escolar are widely distributed in tropical and temperate waters of the world. Internationally food authorities from countries including the United States, Australia, the United Kingdom, Germany and Sweden have issued advisories to remind consumers and the trade of the possible health effects associated with consumption of oilfish and related species. Only two countries, namely Japan and Italy, find it necessary to ban the import and sale of oilfish and escolar.

Identification of fish species may sometimes be difficult; a single fish species is sometimes known with more than one common or market names. Consumers and traders, therefore, should be aware of the scientific names of fish species to avoid misidentification and mislabelling of their products. The CFS has set up a working group comprising representatives from the trade and academic institutes as well as government officials to prepare guidelines on identification and labelling of oilfish and escolar.

Health Significance of Wax Esters

In humans, wax esters are not absorbed by the gut. These wax esters can have a laxative effect on some consumers, and cause symptoms which range from mild and rapid passage of oily yellow or orange droplets to severe diarrhoea with nausea, vomiting and headache. Not all individuals who eat these fish species are affected. It seems that there is a variation in sensitivity among individuals, and some people seem to tolerate the fish and show no ill effect after consumption. Symptom onset time ranges from 30 minutes to 36 hours after ingestion. Recovery is expected within 24 to 48 hours in affected individuals. Preliminary review of 70 local food complaint cases of some 100 people with symptoms showed

焦點個案
Incident in Focus

瀉，約三分之一有腹痛，報稱的潛伏期中位數為13小時。

蠟酯不會透過烹煮或冷凍過程分解。雖然採用能去除大部分魚油的某些烹調方法(例如烤)及棄掉烹煮液體或可在某程度上將風險降低，但現時沒有能減少魚類中蠟酯的方法，保證蠟酯水平不會令食用人士出現不適。

以往，澳洲、新西蘭和美國等海外國家亦曾發生因進食油魚和相關品種引致排油腹瀉的個案。由於患者病情通常輕微，而且很快痊癒，因此可能會出現少報個案的情況。

給業界的建議

1. 如從事魚類貿易，應核實進口和出售的魚類品種。
2. 油魚及其製品應以正確名稱出售，而預先包裝的製品則應加上正確標籤出售。
3. 膳食供應商及食物製造商應從可靠來源採購魚類，避免循不當途徑購買魚類。此外，他們暫時不應把這些魚類入饌，以免引起市場混亂。

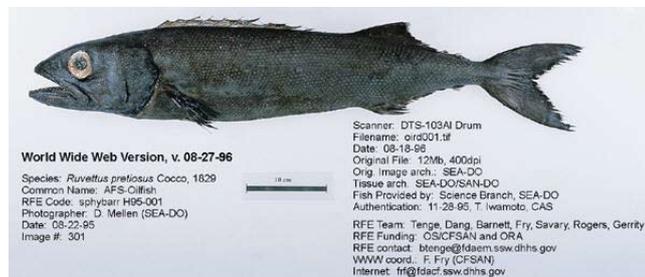
給消費者的建議

1. 消費者應留意進食油魚後可能出現的症狀。如首次進食這些魚類，應先進食小量以看看會否出現不適。
2. 如對出售的魚類品種有疑問，應請賣方澄清。
3. 保持飲食均衡，進食不同種類食物。

更多資料

如欲獲得有關此事的更多資料，請瀏覽下列網頁：

- [中心發出的新聞公報](#)
- [中心發出的食物警報](#)
- [中心編製有關進食魚類導致排油腹瀉的風險簡訊](#)



插圖：含大量蠟酯的油魚（上圖：棘鱗蛇鯖；右圖：異鱗蛇鯖）

Illustration: Oilfish and escolar which contain high levels of wax esters. (Above: Oilfish, *Ruvettus pretiosus*. Right: Escolar, *Lepidocybium flavobrunneum*)

圖片來源 Source of Illustration: "Regulatory Fish Encyclopedia: <http://www.cfsan.fda.gov/~frf/rfe0.html>

Office of Seafood and Office of Regulatory Affairs, U.S. Food and Drug Administration, 1993-2006".

that almost all of them presented with oily diarrhoea and about one third with abdominal pain. Reported median latent period was 13 hours.

Wax esters are not broken down by cooking or freezing. There is no well-proven ways to reduce wax esters in the fish to guarantee a no-effect level, although certain cooking methods that separate a large proportion of the oil from the fish (such as grilling) coupled with discarding the cooking liquid may reduce the risk to some extent.

Cases of oily diarrhoea in association with consumption of oilfish and related fish species have been reported in overseas countries such as Australia, New Zealand and the United States. As the nature of symptoms is often mild and short-lived, it is possible that there is a degree of under-reporting.

Advice to the Trade

1. Traders engaged in fish trading are advised to verify the species of the fish that are being imported and marketed.
2. Oilfish, escolar and their products should be marketed with accurate names and prepackaged ones should be properly labelled for sale.
3. Caterers and food manufacturers should obtain fish supplies from reliable sources and avoid buying fish from improper channels. They are advised not to use oilfish and escolar for catering purpose for the time being to avoid market confusion.

Advice to the Consumers

1. Consumers should be aware of the possible health effects associated with eating oilfish and escolar. Consumers who eat oilfish and escolar for the first time should eat a small portion to determine their susceptibility.
2. Seek clarification from the seller if in doubt about the type of fish on sale.
3. Maintain a balanced diet with a variety of food.

Further Information

Further information about the incident can be obtained from the following webpages:

- [The CFS Press Releases](#)
- [The CFS Food Alert](#)
- [The CFS Risk in Brief on Oily Diarrhoea \(Kerionrhoea\) after Fish Consumption](#)



風險傳達 工作一覽 Summary of Risk Communication Work

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食物中的染色料 Colouring Matter in Food

食物安全中心風險評估組
科學主任邱頌韻女士報告

Reported by Miss Joan YAU, Scientific Officer,
Risk Assessment Section, Centre for Food Safety



豬年已至。金色和紅色寓意吉祥，是新春佳節人們喜愛的顏色，因此，金箔年糕和紅色煎堆均為市民選購的熱門食品。

除了中國人之外，世界各地不同民族都了解到人們是憑眼睛選擇食物，故此尤其重視其顏色。埃及墓穴內的壁畫就繪畫了製作彩色糖果的過程。古人很早已利用藏紅花(從藏紅花中含香味的乾柱頭製成的香料)和其他香料，為食物添加黃色。此外，牛油亦由十四世紀起在配製時加入黃色。



什麼是染色料？

染色料指為食物添加或保存顏色的天然或人造物質。可供食用的蔬果是提供天然色素的主要來源。某些食物色素(例如胡蘿蔔素)可透過天然或人工途徑取得。現時，一共有超過50種染色料可供用於食物內。



食物中的天然顏色可能因食物處於光照、空氣、嚴寒、酷熱和潮濕環境中而流失。此外，各種加工過程亦可能令顏色減退。添加的染色料(例如果汁飲品中的β-胡蘿蔔素)可彌補因此失去的顏色，並能令不同批次的相同食物保持顏色一致。

時至今日，某些顏色已成為某些食品的標記，例如褐色的可樂飲品和紫色的香芋雪糕。此外，染色料還可令糖果和蛋糕等特色食品 and 喜慶食品更加吸引。透過使用染色料，我們可以有各式各樣的食物，滿足文化上的需要和增添樂趣。



染色料可否供人安全食用？

正如其他食物添加劑，染色料須通過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這個國際食物安全機關的安全評估。一般而言，添加少量色素已足以達到所需的效果。因此，只要按照優良製造規範在食物中正確使用染色料，則天然與人造染色料均可供人安全食用。有關食物添加劑的安全問題，[上一期](#)已詳加論述。

本港如何規管染色料？

《食物內染色料規例》(132H章)除了訂明哪些染色料可用於食物中，還規定未經烹煮及未經加工處理的肉類、野味、家禽、魚、水果或蔬菜均不得添加任何染色料。



由二零零七年七月起，本港市面上的預先包裝食物如含有食物添加劑(包括染色料)，必須在食物標籤上列明其作用類別及其本身所用名稱或在食物添加劑國際編碼系統中的識別編號(加上或不加上詞頭“E”或“e”均可)。



Year of the Pig has come! Gold and red are the favourite colours in this festive season because they mean fortune and luck. "Golden" Chinese New Year pudding (with golden leaves added for decoration) and "red" fried dumplings are therefore popular food items that people in Hong Kong would like to buy.

Besides the Chinese, many different cultures around the world recognise that people "eat with their eyes" and have special emphasis on colour of the food. The art of making coloured candies has been described in the wall painting in the Egyptian tombs. Long time ago, people have started to use saffron (spices derived from dried aromatic stigmas of the *Crocus sativus* flower) and other spices to provide a yellow colour to food. Butter has also been coloured yellow since 1300s.

What is Colouring Matter?

Colouring matter refers to substance, either natural or synthetic, which adds or restores colour in food. Edible fruits and vegetables are the major sources of natural colours. Certain food colours (e.g. carotenes) can be obtained both naturally and synthetically. Nowadays, there are more than 50 types of colouring matter available for food use.

Natural colour in food may be lost through exposure to light, air, extremes of temperature and moisture. Different processing conditions may also contribute to colour fading. The added colouring matter (e.g. beta-carotene in juice drinks) may offset the resulting colour loss. It can also help maintaining the colour uniformity among different batches of the same food product.

Certain colours nowadays provide distinctive characteristics to particular food items, e.g. caramel coloured cola drinks and purple taro-flavoured ice-cream. Last but not least, colouring matter makes special treats and fun foods (e.g. candies, cakes, etc) more attractive. With the addition of colouring matter, a wide variety of food can be provided to fulfill our cultural needs and enhance our enjoyment of food.

Is Colouring Matter Safe for Consumption?

Similar to other food additives, colouring matter is subject to safety evaluation by the international food safety authority, the Joint Food and Agriculture Organization / World Health Organization Expert Committee on Food Additives. Usually a small amount of added colour is sufficient to achieve the desired colour. Both natural and synthetic colouring matter can therefore be safely consumed so long as they are properly applied to food in accordance with good manufacturing practice. Details regarding the safety of food additives are available in [previous issue](#).

How is Colouring Matter Regulated in Hong Kong?

The Colouring Matter in Food Regulations (Cap. 132H) stipulate which colouring matter is permitted for food use. In addition, no colouring matter is permitted to be added to meat, game, poultry, fish, fruit or vegetable in a raw and unprocessed state.

Starting from July 2007, the presence of food additives including colouring matter in prepackaged food available in Hong Kong must be listed by their functional classes and specific names or identification numbers under the International Numbering System for Food Additives with or without the prefix "E" or "e" on the food label.

食物安全平台
Food Safety Platform



插圖：色素從浸於水中的黑米滲出

Illustration: Colour exuded from black rice soaking in water

我如何得知食物色素是否天然產生？

要分辨同一種色素是透過天然或人工途徑產生並不容易。

有關在食物中濫用染色料的投訴或傳媒報道時有發生。中心亦不時發現違規情況，例如在黃花魚中濫用日落黃及酒石黃；在年糕中濫用橙黃II及在辣椒粉中濫用蘇丹紅染料。

此外，中心又曾接獲投訴，指清洗或烹煮黑米或紫心番薯時有“非准許”色素滲出。經調查後，我們發現這些食物都含有天然色素，並無證據顯示有人在食物中刻意添加。事實上，在配製食物時，滲出蔬果中天然存在的色素(例如黑米、番薯和紅椰菜中的花色素甙；蕃茄中的蕃茄紅素和紅蘿蔔中的胡蘿蔔素)是正常現象。市民無須過分擔心。

市民應避免吃顏色異常或特別便宜的食物。在烹調食物時，應留意食物顏色是否仍然異常鮮艷。如有疑問，切勿購買或進食有關食物。至於零售商，則不應出售懷疑添加了色素的新鮮食物。

Can I Know Whether a Food Colour is Naturally Occurring?

It is difficult to distinguish the same colour derived from natural or synthetic source.

There have been complaints or media reports about the abuse of colouring matter in food. The CFS has from time to time identified these irregularities such as the abuse of sunset yellow FCF and tartrazine in yellow croaker, orange II in Chinese pudding as well as Sudan colours in chilli powder.

The CFS has also received complaints about "non-permitted" colours exuded from black rice or purple sweet potatoes during washing or cooking. After investigation, these foodstuffs were found to contain naturally occurring colours and there was no evidence that colours had been intentionally added. In fact, it is a normal phenomenon that colours naturally present in fruits and vegetables (e.g. anthocyanins in black rice, sweet potatoes and red cabbages; lycopenes in tomatoes; and carotenes in carrots) will exude during food preparation. There is no need for undue concern.

The public are advised to avoid food with abnormally intense colour or sold at an excessively low price. They should check if the food colour remains abnormally brilliant when cooking and do not buy or consume any food when in doubt. Retailers should not sell fresh food suspected to have colour added.

食物事故點滴
Food Incident Highlight

滴滴涕殘留與食物安全

滴滴涕是一種曾廣為使用的廣譜除害劑，現已為不少國家禁用，屬於持久性有機污染物。雖然香港、內地和許多其他國家已在農務中停用滴滴涕多年，但其殘留仍存留於環境中，因此難免一些植物和動物內仍有這種物質。近年，本地食物樣本中驗出的滴滴涕含量均屬低水平，沒有證據顯示有不法使用滴滴涕的情況。

食物安全中心在二零零六年進行了一項名為“中學生從食物攝取滴滴涕的情況”的**研究**，結果顯示中學生(包括攝入量偏高的中學生)每天從食物攝入滴滴涕的分量，遠低於聯合國糧食及農業組織/世界衛生組織農藥殘留聯合會議訂定的安全參考值(即按每公斤體重計算為10微克)。內地總膳食研究結果顯示，由九十年代起，人們從食物中攝入滴滴涕的分量持續下降。相對於滴滴涕繼續用於農務，這現象與滴滴涕長時間存留於環境中更為吻合。

DDT Residues and Food Safety

DDT, once a widely-used broad-spectrum pesticide, has been banned in most countries and is regarded as a persistent organic pollutant. Although the use of DDT in agriculture has been stopped for years in Hong Kong, on the Mainland and in many other countries, the residue still persists in the environment and therefore its presence in some plants and animals is still unavoidable. In recent years, local food samples detected with DDT were found at low levels and did not provide evidence of illegal use.

The Centre for Food Safety conducted a **study** on dietary exposure to DDT of local secondary school students in 2006. The results suggest that the exposure levels, including high consumers, are well within the safety reference value of 10 microgram / kg body weight / day set by the Joint Food and Agriculture Organization / World Health Organization Meeting on Pesticide Residues. The results of total diet studies on the Mainland indicate that DDT exposure from food has been on the decline since 1990s, which was more consistent with environmental persistence of DDT than with continuous agricultural use.

李斯特菌與高危人士

李斯特菌病是由李斯特菌引致的食源性疾病。雖然此病在本港較少見，但過去數年外國卻發生多宗李斯特菌病事故。身體健康的人在進食含這種細菌的食物後鮮會發病。不過，李斯特菌對高危人士(例如孕婦、初生嬰兒、長者和免疫能力較低的人)卻會造成嚴重影響。病情嚴重的患者可出現敗血病，腦膜炎，腦炎，流產，死胎或早產。

高危人士應避免進食預先製成的沙律、未經巴士德消毒法處理的奶類及奶製品、軟芝士、煙薰或生的海產、冷吃肉類和肝醬等食物，因為李斯特菌較常在這些食物中發現。李斯特菌的特別之處，是能夠在貯存於雪櫃內的受污染食物中繁殖。為盡量減低受感染的機會，我們應奉行良好的處理食物方法和正確的個人衛生習慣。如需更多有關李斯特菌的資料，請瀏覽中心**網頁**。

Listeria and Individuals at Risk

Listeriosis is a foodborne disease caused by the bacteria *Listeria monocytogenes*. Though cases are reported infrequently in Hong Kong, a number of listeriosis outbreaks have occurred overseas in recent years. Healthy individuals rarely develop symptoms after exposure. However, the effect on high risk individuals like pregnant women, newborns, the elderly and people with compromised immunity can be severe. The infection can result in septicaemia, meningitis, encephalitis, miscarriage, stillbirth or premature birth in severe cases.

High-risk individuals should avoid foods like prepared salads, unpasteurised milk and their products, soft cheese, smoked and raw seafood, cold meats, pâté, etc., as the bacteria are more frequently found in these foods. *Listeria* are rather unique in the sense that they can multiply in refrigerated foods that are contaminated. Good food handling techniques and proper personal hygiene should be practised to minimise the chance for infection. For further information on *Listeria monocytogenes*, please visit the following **webpage** at the CFS website.

