

Quality Assurance of Cooking Oil

保證食油質素 Q嘜為您把關

Media reports in December 2012 concerning the suspected supply of substandard oil to a number of local restaurants caused public concern. **Hop Hing Oils & Fats (Hong Kong) Ltd Chief Operating Officer & Executive Director Tammy Lam** and **FHKI Q-Mark Division Senior Manager Andrew Chang** explain how to assure the quality of cooking oil through stringent production and credible testing services.

傳媒於去年12月揭發懷疑質素有問題的食油供應本地多家食肆，引起公眾關注。合興食油（香港）有限公司首席營運總監兼執行董事林鳳明與工總香港優質標誌科高級經理鄭永健講述如何以嚴格的生產程序及檢測，確保食油質素。

After the highly publicised incident, the Centre for Food Safety (CFS) immediately took 39 cooking oil samples from the cooking oil establishment, its supplier and restaurants concerned for testing for Benzo[a]pyrene (BaP). It was found that four samples contained BaP with respective levels of 5.8, 6.2, 16 and 17 micrograms per kilogram (mcg/kg), all exceeding the EU limit of 2 mcg/kg and two exceeding the Mainland limit of 10 mcg/kg. The CFS considers that this was most likely caused by undesirable quality control during the production process. Moreover, the State General Administration of Quality Supervision, Inspection and Quarantine found that the manufacturer concerned, upon the Hong Kong importer's request, had changed the processing procedures and the proportion of ingredients of the peanut oil without permission.

People are concerned that the batch of cooking oil containing carcinogenic BaP may have been adulterated with gutter oil¹. The Government remarks that "FEHD (the Food and Environmental Hygiene Department) has so far found no evidence that so-called 'gutter oil' was involved in the incident."² Furthermore, a paper provided by the Government

to the Legislative Council on 3 January states that, "The Mainland monitoring authority is still working on methods for identifying 'gutter oil' and the related testing standards. There does not exist, at present, an established scientific method for identifying 'gutter oil'."

Hop Hing Oils & Fats (Hong Kong) Ltd Chief Operating Officer & Executive Director Tammy Lam points out, "Hop Hing has been engaged in the oil business for more than 80 years. Consumers can

identify substandard cooking oil in three ways. Firstly, observe the transparency and colour of the oil. For example, pure vegetable oil is crystal clear. Secondly, smell the oil. Drop one or two droplet(s) of oil on the palm of the hands. Rub the hands together and smell them to identify the oil. As each kind of oil has a distinctive smell, any unpleasant smell may indicate quality problems. Thirdly, taste the oil. If the oil is sour, it may not be edible. Above all, people should



Hop Hing owns the sole cooking oil refining factory in Hong Kong where the production is carried out. 合興擁有香港唯一的煉油廠，生產工序均在港進行。

¹ This generally refers to discarded oil collected from gutters.

² The remark made by Secretary for the Environment Wong Kam-sing during a Legislative Council meeting on 23 January.

purchase cooking oil products from reputable manufacturers that have much better quality control systems.”

Stringent Production Process

Heating of cooking oil during processing may lead to an increase in BaP level. But the refining process may control the BaP level. The ultimate level is subject to refining conditions and quality control.

Ms Lam introduces Hop Hing’s production methods for cooking oil. The company owns the sole cooking oil refining factory in Hong Kong where the production is carried out. The company firstly procures raw materials globally (eg crude vegetable oils). Its quality control department then conducts testing to ensure the materials conform to the standards for refining. The refining process will remove waxes, water, contaminants, colours, acid and odour. The vacuum environment for refining can better control the quality. The refined oil is edible but it will be further processed according to their formulations. The final procedure is packaging the oil for sale in supermarkets and restaurants or export.

She points out that the quality control department closely monitors the food supply chain. In the process of transporting, refining and packaging, the company takes samples for testing and requests testing reports or certificates from suppliers. Hop Hing is in compliance with the food regulations enshrined in Chapter 132 Public Health and Municipal Services Ordinance and international standards such as that set by Codex Alimentarius Commission (Codex). A prime example is that Hop Hing’s “Lion and Globe” edible oil achieves a high degree of compliance with the EU limit of BaP.

She says, “Hop Hing has obtained the Factory Canteen Licence from the Food and Environmental Hygiene Department and has been certified with various licences. We are highly competitive in the industry.” Hop Hing is certified with The Hong Kong Q-Mark Product Scheme, ISO 9001: 2008 Quality Management

The Q-Mark is a widely renowned certification scheme.

Systems, ISO 14001: 2004 Environmental Management Systems, ISO 22000:2005 Food Safety Management Systems and Hazard Analysis and Critical Control Point (HACCP) System.

Q-Mark Enhances Product Quality

The Hong Kong Q-Mark Product Scheme is administered by the Hong Kong Q-Mark Council under the auspices of the FHKI. The Q-Mark is a widely renowned certification scheme in the Mainland, Hong Kong and Macau as it adopts internationally recognised, objective and stringent standards so as to further enhance licensees’ quality management.

FHKI Q-Mark Division Senior Manager Andrew Chang explains that the Council performs regular factory surveillance and product testing for licensees. The auditors of the Council visit the factories on a monthly basis to assess the hygiene situation of the premises, check the testing reports of raw materials, semi-finished products and final products and calibrate the measuring devices, etc. The list for evaluation includes but is not limited to the quality of raw-materials, personal hygiene of staff, hygiene situation of equipment and warehouse.

Mr Chang says, “The Council collects samples for testing for hazardous substances. For cooking oil, the Council adopts Codex standards such as CODEX



Tammy Lam
林鳳明

STAN 19 (Standard for Edible Fats and Oils not Covered by Individual Standards) and CODEX STAN 210 (Standard for Named Vegetable Oils) as the benchmark.

CODEX STAN 19 details the quality and proportion requirements for different edible oils, including the limit of colours, antioxidants, antioxidant synergies, anti-foaming agents and heavy metals. CODEX STAN 210 lists the slip melting points and proportion of fatty acid of different vegetable oils.

In light of the situation in Hong Kong, the Council includes plasticisers as regular testing items. Plasticisers added to hard materials can increase flexibility and softness and are widely applicable to numerous industrial and consumer products, including food contact materials. In addition, phthalate plasticisers are present as environmental contaminants in air, water and soil. Mr Chang says, "There is a possibility that food is contaminated with plasticisers due to emigration from food contact materials during processing and packaging and the polluted environment. Therefore, we ascertain the amount of plasticisers in cooking oil samples."

After factory inspection and product

testing, the Council reports on any non-conformance and asks for remedies. Auditors will evaluate the follow-up measures of the licensees during the next regular visit. If the performance is unsatisfactory, the Council may terminate the licence. Mr Chang explains, "The exit mechanism in place ensures that the licensees continuously observe Q-Mark standards in maintaining quality products and system."

Updated Food Surveillance

Mr Chang adds, "The Council keeps a close watch over the food safety issues in Hong Kong and the Mainland, eg the recent incident of suspected substandard cooking oil entering the food chain. Hence, the Council has conducted BaP testing for licensed cooking oil products to boost consumer confidence."

In addition, the CFS has proposed to adopt an action level of 10 mcg/kg for BaP in cooking oil as there is no legal limit of BaP in Hong Kong legislation. The CFS may take action if it is found that BaP in cooking oil is higher than the action level.

Ms Lam says, "Any person who carries on the business of bottling or canning edible oil is exempted from holding a food business licence in Hong Kong legislation. To better control the hygiene performance of food establishments and ensure the quality of cooking oil, the Government should undertake a review of the licensing exemption to plug the loophole. Doing so may enhance the confidence of consumers in the industry." 🚗

事件發生後，食物安全中心（中心）在有關食油加工場、供應商及食肆抽取39個樣本，發現其中四個樣本的致癌物苯並[a]芘（Benzo[a]pyrene）含量分別是每公斤5.8、6.2、16及17微克，超出每公斤2微克的歐盟標準，其中兩個樣本更超出每公斤10微克的國家標準。究其原因，中心表示極有可能是由於生產時品質控制未如理想；而國家質量監督檢驗檢疫總局則發現，該內地生產商是應本港進口商的要求，擅自改變花生油加工工序和原料比例。

對於公眾懷疑該批食油攙雜「地溝油」¹，政府表示，「到目前為止，並沒有任何證據顯示事件牽涉所謂的『地溝油』」²。政府1月3日向立法會呈交的資料文件中指出，「內地監管部門亦正研究鑒別『地溝油』的檢測方法，至今並沒有一種特定的科學方法鑒別『地溝油』。」

合興食油（香港）有限公司首席營運總監兼執行董事林鳳明指出：「合興從事食油業務80多年，消費者可以從三方面鑑別劣質油。其一，食油的透明度和色澤，例如純淨植物油的透明度較高。其二，食油的氣味。可在手掌上滴一、兩滴油，雙手合攏摩擦，用鼻子辨別氣味。由於每種食油有其獨特氣味，若有異味，則表示質量有問題。其三，食油的味道。若口感帶酸等，均不建議食用。其實，市民購買食油時應光顧具信譽的生產商，他們在生產和檢測方面都較有保證。」

嚴格監控生產

食油在加工時可能會因加熱而產生苯並[a]芘。不過，食油在精煉過程中，可以嚴格控制苯並[a]芘水平，最終的水平則取決於精煉條件及質量控制。

林鳳明介紹合興生產食油的過程。合興擁有香港唯一的煉油廠，生產工序均在港進行。首先，公司從世界各地購入原材料（例如未經提煉的毛油），經

1 「地溝油」一般是指從去水渠收集得的廢油。

2 引述自環境局局長黃錦星1月23日在立法會議事會上的講話內容。





Hop Hing is certified with The Hong Kong Q-Mark Product Scheme.
合興已取得香港Q嘜優質產品計劃認證。

品質管理體系認證、ISO 14001:2004 環境管理體系認證、ISO 22000:2005 食品安全管理體系認證，以及HACCP食物安全重點控制系統認證。

Q嘜確保品質

香港Q嘜產品計劃由工總轄下的香港優質標誌局（優標局）專責營辦，以國際認可、客觀嚴謹的標準對持證公司進行審核，協助進一步提升品質管理，確保產品質素。Q嘜已成為內地、香港及澳門廣泛認同的優質標誌。



工總香港優質標誌科高級經理

鄭永健解釋，優標局向通過評核的公司發出Q嘜准用證後，會定期查檢持證公司的廠房及測試產品。優標局的調查員每月親身到廠房，查察廠房衛生情況、查閱來料、半製成品及成品的檢測結果，以及校準量器等。調查員需確保原材料的質素、員工個人衛生、廠房的設備及倉庫衛生等是否符合Q嘜準則。

鄭永健說：「優標局會抽取產品樣本作化學測試，確保產品符合標準。食油方面，我們會參照食品法典如CODEX STAN 19『單獨標準中未包括的食用油脂標準』和CODEX STAN 210『指定的植物油法典標準』等作為測試基準。」

CODEX STAN 19列明食油的品質及成分要求，包括色素、抗氧化劑、抗氧化增效劑、防沫劑、重金屬的含量上限。CODEX STAN 210則列明不同植物油的滑熔點、脂肪酸含量等。

優標局亦因應香港的情況，將塑化劑的化學測試納入Q嘜檢測機制。塑化

優標局向通過評核的公司發出Q嘜准用證後，會定期查檢持證公司的廠房及測試產品。

劑使堅硬的物料具彈性和柔軟，廣泛應用於多種工業及消費品，包括食物接觸物料。而且，鄰苯二甲酸酯類的塑化劑是常見於空氣、水和泥土的環境污染物。鄭永健說：「食物在處理和包裝過程中接觸含塑化劑的食物接觸物料造成物質轉移，以及受環境污染，都可能導致食物含有塑化劑。因此，我們會檢測食油樣本中的塑化劑含量。」

優標局在查檢持證公司的廠房及測試產品完成後，如查檢或檢測不符合既定要求，會向持證公司發出報告，列明尚未符合標準的事項，並要求作出糾正。調查員會在下一次的定期查察中，瞭解持證公司的跟進工作，若多次勸喻無效，可能會終止認證。鄭永健解釋：「這個退出機制，確保持證公司都能夠持續按照Q嘜準則維持產品標準及品質體系。」

食物安全監察需與時並進

鄭永健補充：「優標局緊貼內地及香港的食物安全議題，就今次有懷疑質素有問題食油流入香港的食物鏈，優標局對獲得認證的食油產品進行苯並[a]芘測試，為消費者加添信心。」

現時香港沒有就食物中的苯並[a]芘含量制定法定限值，但食物安全中心建議為食油中的苯並[a]芘含量制定每公斤10微克的暫定行動水平，即若果發現高於此水平，中心會採取行動。

林鳳明表示：「根據現時法例，經營食油裝瓶或裝罐業務的人士可獲豁免申領牌照。為加強食油加工處所的衛生管理及確保食油品質，政府應檢討豁免安排，堵塞漏洞，以增添消費者對食油業的信心。」

品檢部檢測及確定符合標準後，才進行提煉。毛油需經過六個主要提煉程序，行內稱為「六脫」，即脫膠、脫水、脫雜質、脫色、脫酸及脫臭，成為可食用的精煉油。提煉過程在真空的環境下進行，以控制質量。然後，合興依照不同配方，將精煉油調配成各款食油，裝瓶後成為成品，分銷到超級市場、食肆及海外市場。

她指出，公司的品檢部嚴密監控食物供應鏈，從原材料運抵公司廠房、煉油及裝瓶等過程，均抽取樣本進行檢查，並要求原材料供應商提供檢測報告或食品健康證明書。合興遵守香港法例第132章《公眾衛生及市政條例》的食物規例，以及食品法典委員會（Codex Alimentarius Commission）的國際標準等。例如，合興嚴格監控獅球嘜食油中的苯並[a]芘的含量符合歐盟標準。

她說：「合興有食物環境衛生署發出的食物製造廠牌照，並且獲得多項認證，在同行中甚具競爭力。」合興已取得香港Q嘜優質產品計劃認證、ISO 9001:2008