

**For Information
on 3 January 2013**

LegCo Panel on Food Safety and Environmental Hygiene

Measures to Follow up on Suspected Substandard Cooking Oil

Purpose

This paper briefs Members on the measures taken by the Food and Environmental Hygiene Department (FEHD) and its Centre for Food Safety (CFS) to follow up on suspected substandard cooking oil.

Background

2. In mid-December 2012, there was a report in the newspaper alleging that a suspected unlicensed food processing establishment had been supplying cooking oil of substandard quality to 13 restaurants. According to the report, the content of Benzo[a]pyrene (BaP), a human carcinogen, in the cooking oil concerned exceeded the limit set by the European Union (EU).

BaP

3. BaP is one type of polycyclic aromatic hydrocarbons (PAHs). Being ubiquitous in the environment, PAHs may be found in trace amounts in various types of food, including cereals and vegetables. For instance, the level of PAHs in uncooked food may range from 0.01 to 0.1 microgram per kilogram (mcg/kg). According to the Joint Food and Agriculture Organization/World Health Organization Expert Committee on Food Additives (JECFA), cereals, vegetables, fats and oils are major contributors of dietary exposure to PAHs. Levels of BaP may vary depending on the processing conditions and are often higher in barbecued or smoked meat or fish. When cooking oil is heated during processing, BaP may also be generated. However, the level of BaP in cooking oil could be substantially reduced after refining processes. The ultimate level of BaP would depend on the conditions under which refining takes place and quality control.

4. BaP is toxic to genes and may cause cancer in humans. Based on the “as low as reasonably practicable” (ALARP) principle, intake of BaP should be kept to a minimum. While the Codex Alimentarius Commission

and many developed countries (e.g. the United States, Australia, New Zealand, Japan and Singapore, etc.) have not at present set any limits on BaP in food, the EU and Mainland China have established limits on BaP at 2 and 10 mcg/kg respectively for fats/vegetable oil.

Existing legislation

5. The existing Hong Kong legislation does not stipulate a statutory limit on BaP in food. However, Section 52 of the Public Health and Municipal Services Ordinance (Cap. 132) provides that if any person sells to the prejudice of a purchaser any food (including cooking oil) which is not of the nature, or not of the substance, or not of the quality, of the food demanded by the purchaser, he shall be guilty of an offence. Section 54 of the Ordinance also stipulates that all food (including cooking oil) for sale must be fit for human consumption. Moreover, several pieces of subsidiary legislation prescribed under the Ordinance (including the Food Adulteration (Metallic Contamination) Regulations (Cap. 132V), the Harmful Substances in Food Regulations (Cap. 132AF), the Colouring Matter in Food Regulations (Cap. 132H) and the Preservatives in Food Regulation (Cap. 132BD), etc.) regulate the use of chemical substances and additives in food.

Food Surveillance Programme

6. Under the Food Surveillance Programme, CFS takes food samples at import, wholesale and retail levels for microbiological, chemical and radiation testing to ensure that all food for sale in Hong Kong is fit for human consumption and complies with the legal requirements. About 65 000 food samples are tested every year. CFS adopts a three-pronged strategy consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance.

7. When determining the types, frequency and number of food samples to be taken for testing, as well as the types of laboratory analyses to be conducted under the Food Surveillance Programme, CFS adopts a risk-based approach. For good measure, CFS consults the Expert Committee on Food Safety on the proposed content of the Programme and obtains the Committee's endorsement before the actual surveillance work is set into motion. CFS has all along been monitoring the quality of cooking oil in Hong Kong, in the interest of ensuring that the products comply with the legal requirements and are fit for human consumption. From January 2011 to October 2012, more than 310 cooking oil samples were tested for different chemicals, which include erucic acid, colouring matter, mycotoxins, anti-oxidants and metallic contaminants, etc. under the Food Surveillance

Programme. The contents of these substances in cooking oil are regulated by law. All the samples taken were found to be satisfactory and in compliance with the legal requirements.

8. Since 2011, there had been media coverage from time to time on the supply of “gutter oil”¹ for use in restaurants in the Mainland. That has drawn public attention to the safety of cooking oil. CFS has been keeping a close watch over such reports on “gutter oil” and communicating with the relevant Mainland authority on measures being taken to ensure food safety including the standards and surveillance methods used. As far as we understand it, 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”. Nevertheless, CFS, after consulting the Expert Committee on Food Safety, carried out a targeted surveillance project on used cooking oil, which carries a relatively higher food safety risk, under the Food Surveillance Programme in 2012. A total of 68 samples of used cooking oil were collected from various local restaurants and tested for BaP and other chemicals. The results of all samples taken were satisfactory. CFS announced the results of the project in November 2012. We will continue to maintain close liaison with the Mainland monitoring authority and related international organisations on the testing of cooking oil.

Follow-up measures

Immediate action

9. On the day the newspaper broke the news (13 December 2012), FEHD took immediate follow-up action by inspecting the suspected unlicensed food processing establishment in Kwai Chung, the alleged supplier of the cooking oil in Tuen Mun and 13 restaurants. CFS collected a total of 39 cooking oil samples and tested them for BaP.

10. According to the initial test findings, two oil samples from the same brand collected from the supplier in Tuen Mun were found to contain BaP levels at 16 and 17 mcg/kg respectively, exceeding the limits set by both the Mainland (10 mcg/kg) and EU (2 mcg/kg). BaP was also detected in two other samples collected from the food processing establishment in Kwai

¹ There is no definition of “gutter oil”. Generally, it refers to discarded oil recovered from gutters and ditches.

Chung at levels of 5.8 and 6.2 mcg/kg respectively. They were lower than the Mainland limit but exceeded the EU limit. As regards the remaining 35 samples, BaP was either not detected or below the EU limit.

11. In the light of the test results, CFS has conducted a risk assessment to determine whether there is any potential health risk. With reference to the standards adopted by the Mainland and the EU, and taking into account factors including the results of risk assessment using the margin of exposure (MOE)² approach, the level of cooking oil consumed by Hong Kong people per capita, and the content of BaP in cooking oil samples, CFS considers that the health risk concern for consuming the above mentioned vegetable oil with a BaP level at 17 mcg/kg should not be high. On 18 December 2012, CFS issued a press release to announce the above-mentioned results of the initial tests and the outcome of its risk assessment.

12. As a prudent measure, CFS has requested the supplier concerned to stop selling and recall the product. To further allay public concerns, CFS has conducted further tests on the four samples described in paragraph 10 above to ascertain whether they contain other harmful substances, including metallic contaminants and aflatoxin. The samples were found to be satisfactory without exceeding the current legal limits in Hong Kong.

13. As the incident further develops, CFS has, up to 27 December 2012, taken another 51 samples of cooking oil from various distributors, supermarkets and restaurants, etc., and tested them for BaP. The test results for 23 samples were announced on 27 December 2012. According to the results, one sample taken from an importer (from the same batch of cooking oil where the two samples exceeding the Mainland limit as mentioned in paragraph 10 were taken) was found to contain BaP at a level of 14 mcg/kg, exceeding the Mainland limit of 10 mcg/kg. Meanwhile, 3.1 mcg/kg of BaP was detected in another sample collected from one of the distributors, exceeding the EU limit of 2 mcg/kg but not the Mainland limit. For the rest of the samples, the results were satisfactory, i.e. BaP was either not detected or below the EU limit.

14. Besides, the hygiene condition of the premises of the food processing establishment in Kwai Chung was found to be unsatisfactory during FEHD's inspection. Accordingly, FEHD has served a notice to the

² MOE is used to assess the degree of health concern. The smaller the MOE, the higher the health concern, and vice versa. See paragraph 21 below for details.

persons concerned under the relevant legislation, requiring improvement of the hygiene condition of the premises within 14 days. Should the persons concerned fail to comply with the requirements of the notice, they may be prosecuted, and are liable on conviction to a maximum fine of \$5,000 with an additional daily fine of \$50. Moreover, FEHD will continue to investigate the suspected conduct of unlicensed food processing business on that premises.

Dissemination of information to the trade

15. On 18 December 2012, CFS had a meeting with representatives of the trade to brief them on the testing results. The trade was reminded again to source food from reliable suppliers, by checking whether the suppliers possessed the relevant food business licences and whether they had been registered as food importers or distributors under the Food Safety Ordinance (Cap. 612), as well as checking the source and quality of the food ingredients. The trade was also advised to maintain proper records in accordance with the Food Safety Ordinance (Cap. 612) to facilitate source tracing if and when necessary. Meanwhile, we will continue to step up our publicity and education efforts through established communication platforms and other publicity channels.

Tracing the source and distribution of substandard cooking oil

16. The Food Safety Ordinance (Cap. 612) came into full operation on 1 February 2012. It introduces a food tracing mechanism which includes a registration scheme for food importers and food distributors as well as a requirement for food traders to maintain proper transaction records (retailers are required to keep food acquisition records only) to enhance food traceability and ensure food safety.

17. In accordance with the Food Safety Ordinance, CFS has requested the food traders concerned to produce the relevant transaction records, so as to facilitate tracing of the source and the distribution of the suspected substandard cooking oil, thereby ensuring the effectiveness of recall action. We have, according to the transaction records collected in our investigation, traced the source of the substandard cooking oil and the distributors and retailers who were supplied the cooking oil. Follow-up action has been taken, including the taking of samples for laboratory testing and recalling the substandard cooking oil, etc. In the course of our investigation, CFS has issued warning letters to nine food importers or distributors, requesting them to register as food importers or distributors within 14 days. A warning letter has also been issued to a registered food

distributor who failed to produce food transaction records, requesting him to produce the same, failing which prosecution will be initiated. As at 27 December 2012, CFS has received applications for registration as food importers or distributors from six companies. FEHD will continue to follow up on the case. Prosecutions will be initiated if there is sufficient evidence of anyone being in breach of the law, which includes the Public Health and Municipal Services Ordinance (Cap. 132), the Food Business Regulation (Cap. 132X) and the Food and Drugs (Composition and Labelling) Regulations (Cap. 132W).

18. According to the records kept by the importer, the cooking oil found to have a BaP level exceeding the Mainland limit is the product of a Mainland manufacturer. CFS has contacted the State General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) for follow-up action on the incident. After investigation, AQSIQ 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. As a result, the content of BaP in the related batch of cooking oil exceeded the Mainland limit. The relevant Mainland authority has ordered the manufacturer to suspend supply of the products to Hong Kong, stop production and take improvement measures, as well as to recall the products in question.

Stepping up inspection on premises carrying on the business of bottling or canning cooking oil

19. Under the Food Business Regulation (Cap. 132X), any food business which involves the preparation of food for sale for human consumption off the premises must obtain a food factory licence issued by FEHD. As such, food traders must obtain the relevant licence if they are to carry on the business of mixing or refining cooking oil.

20. However, the Food Business Regulation (Exemption from Section 31(1)) Notice (Cap. 132Z) stipulates that any person who merely carries on the business of bottling or canning edible oil is exempted from the obligation to hold a food business licence. In the 1970s, having taken into account the simple procedures carried out in the business of bottling or canning edible oil (which only involves putting edible oil from large containers into smaller bottles or cans) and the low risk of contamination, the former Urban Council decided that any person who carried on such business could be exempted from obtaining a food business licence. FEHD has deployed staff to inspect a number of cooking oil distributors. Their business mainly involves trading in cooking oil while several of them are

also involved in the process of bottling or canning cooking oil. The environmental hygiene conditions of the premises concerned were generally satisfactory. We will put in place a routine inspection mechanism for premises which are engaged in bottling or canning cooking oil to monitor their hygiene situation. Subject to the inspection results, we will seriously consider the need to withdraw the licensing exemption for bottling or canning cooking oil.

Review of the Food Surveillance Programme

21. CFS will review the testing of cooking oil under the Food Surveillance Programme, in terms of frequency and the number of samples taken for testing, as well as the types of laboratory analyses to be conducted. CFS will include BaP in its routine testing. Moreover, with reference to the standards of different countries / jurisdictions and taking into account the results of risk assessment using the MOE approach mentioned in paragraph 11 above, CFS suggests adopting a provisional action level of 10 mcg/kg for BaP in cooking oil. JECFA considered that an MOE value of lower than 10 000 indicated public health concern. If a BaP level at 20 mcg/kg is detected in cooking oil, the MOE calculated under risk assessment will be lower than 10 000, indicating a public health concern. As such, CFS would take enforcement action in accordance with Section 54 of the Public Health and Municipal Services Ordinance (Cap. 132), and initiate a mandatory recall of the cooking oil concerned. If a BaP level higher than 10 mcg/kg but lower than 20 mcg/kg is detected in cooking oil, the calculated MOE under risk assessment will be higher than 10 000, indicating that the public health concern is low. Nevertheless, under such a scenario, CFS may still take enforcement action in accordance with Section 52 of the Public Health and Municipal Services Ordinance (Cap. 132). CFS will consult the Expert Committee on Food Safety on the above proposal in January 2013.

22. Apart from the follow-up action mentioned in paragraph 13 above, CFS will also embark on an additional targeted food surveillance project on cooking oil. Samples will be taken from different stages in the food supply chain, covering importers, manufacturers, distributors, wholesalers, retailers and restaurants, and tested for BaP, metallic contamination and aflatoxin, thereby ensuring that the products available in the local market are fit for human consumption and in compliance with the legal requirements in Hong Kong. The project is expected to be completed within one to two months. The results will be announced once available.

Advice Sought

23. Members are invited to note the follow-up measures being taken by FEHD on suspected substandard cooking oil.

**Food and Health Bureau
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