

**For Discussion
On 9 June 2009**

LegCo Panel on Food Safety and Environmental Hygiene

Food Testing Work of the Centre for Food Safety

PURPOSE

This paper briefs Members on the recent developments in the food testing work of the Centre for Food Safety (CFS), with special focus on the Food Surveillance Programme and the Risk Assessment Studies.

BACKGROUND

2. The CFS adopts a risk analysis framework promulgated by the international food and health authorities in ensuring food safety in Hong Kong. The CFS has in place different measures to safeguard food safety, among which food testing is an essential tool, in identifying potential food risk and monitoring food safety level. Food testing is undertaken through the CFS's Food Surveillance Programme and Risk Assessment Studies.

Food Surveillance Programme

3. The Food Surveillance Programme is a major tool of the CFS to ascertain the safety of food available in the local market. Samples of a large variety of food are taken at import, wholesale and retail levels for microbiological and chemical testing, to ensure that the foods offered for sale are fit for human consumption and comply with legal requirements. Microbiological testing, supported by the Public Health Laboratory Centre (PHLC) of the Department of Health, covers bacteria and viruses; while chemical testing, supported by the Government Laboratory (GL), includes food additives, contaminants and natural toxins.

4. To keep in line with the international trend of putting more focus on project-based surveillance, the CFS has since 2007 adopted a three-tier surveillance strategy, consisting of routine food surveillance, targeted food surveillance and seasonal food surveillance. The CFS adopts a risk-based approach in determining the types of food samples to be

collected, the frequency and number of samples for testing, and the types of laboratory analyses to be conducted. The factors that are relevant in the analysis include food risks, local and overseas food safety incidents, public concerns, etc. The CFS monitors on a daily basis over 30 international websites related to food safety matters. The sampling programme is under regular review, taking into account the latest overseas and local risk analyses and relevant developments.

5. The CFS tests about 65 000 food samples every year. In general, the safety of food available in Hong Kong is maintained at a high standard, with the average satisfactory rate of food testing standing at 99%.

Risk Assessment Studies

6. Risk assessment forms the scientific basis of risk communication and management in the risk-based food safety control model. Every year, the CFS conducts Risk Assessment Studies, which are comprehensive reviews and analyses of food-related hazards of public health significance (e.g. chemical hazards, microbiological hazards). To incorporate consumers' perspectives in our studies and to catch the attention of food consumers, the CFS collaborates with the Consumer Council in some of the studies.

SUMMARY OF RECENT WORK

7. Under the Food Surveillance Programme of 2008, over 66 000 food samples were tested, with a satisfactory rate of over 99%. The 2008 Programme included routine food surveillance for microbiological and chemical analyses announced in six Food Safety Reports and 18 special projects, comprising: nine targeted surveillance projects, five seasonal surveillance projects and four surveys on popular food items. Details of the various projects are set out in **Annex 1**. To promote transparency and timely communications, the CFS issued over 90 press releases (including 70 related to testing of melamine) to keep the public informed of the surveillance results.

8. As for Risk Assessment Studies, results of six studies have so far been released in 2009, including the studies on Sodium Content of Savoury Snacks in Hong Kong (joint project with Consumer Council), Nutrient Contents of Common Non-prepackaged beverages in Hong Kong, Polybrominated Diphenyl Ethers (PBDE) in Food of Animal

Origin, Food Safety of Instant Cup Noodle Containers, Aluminium in Food, and Safety of Irradiated Food.

9. The CFS plans to release results of the studies on Ethyl Carbamate in Local Fermented Food and Trans Fats in Local Food in the later half of 2009. Risk Assessment Reports, containing the findings and recommendations of all the studies, are uploaded onto the CFS website. In order to present the latest knowledge in a friendlier manner, the findings are also disseminated to the stakeholders through various channels and in different forms, such as press release, education pamphlets and guidelines for the trade.

DEVELOPMENTS AND ENHANCEMENTS

10. The CFS constantly evaluates the effectiveness of its food testing work and has introduced a number of enhancements to the Food Surveillance Programme and the Risk Assessment Studies.

Communication of Testing Results

11. The CFS places much emphasis on its communications with stakeholders and strives to release food testing results in a timely and effective manner. Not only that food surveillance results with immediate public health concern are released once available, the release interval of the Food Safety Report, which contains results from routine surveillance, is shortened from every two months to every one month from 2009 onwards. Between the Food Safety Reports is generally the releasing of results of the targeted surveillance projects. As for seasonal food surveillance projects, results are released well in advance of the relevant festival/ season in order to provide meaningful information for consumers in making their food choices. Findings of Risk Assessment Studies are released on a regular basis.

12. The means of communication is equally important, and a variety of channels are used for quick and timely communication with stakeholders, including press release, press conference, media briefing and the CFS website. During the critical stage of the melamine incident, press releases with surveillance results and details of the products tested (including photos) were issued and uploaded to the CFS website daily. Dedicated webpage with friendly search engines for the testing results was also set up to keep the public informed of the latest developments. It is worth noting that the CFS website was one of the winners of Hong Kong ICT Awards (Best Public Service Application) awarded in February

2009.

Adjustments in Test Items

13. The CFS reviews the sampling programme of the Food Surveillance Programme regularly by taking into account the latest assessment on food safety trends. Some recent adjustments introduced include the incorporation of the testing of melamine into the routine surveillance programme, and the testing of some newly permitted preservatives and antioxidants. To ensure the safety of food items that are popular in the local community, the CFS has in 2008 conducted thematic surveys on some popular foods, including various types of breakfast food. For 2009, new projects such as testing of cart noodles and local-style desserts are launched. As for Risk Assessment Studies, annual research plans are drawn up and submitted to the Expert Committee on Food Safety for endorsement. The latest plan for Risk Assessment Studies in 2009/10 is at **Annex 2**.

Special Surveillance Programmes

14. Apart from the regular surveillance projects, the CFS has gained important experience and built up the capacity to conduct special surveillance programmes even when under time constraints. In the run-up to the 2008 Olympic and Paralympic Equestrian Events, the CFS tested over 700 food samples from the relevant food suppliers and caterers alone, and all test results were satisfactory. With the concerted efforts of all stakeholders, there was zero food incident for the Events. In relation to the melamine incident, the CFS began conducting extensive melamine testing since the unfolding of the incident in mid September 2008. Under a special 3-phased programme, over 5 500 food samples were tested for melamine and the failure rate was less than 1%.

Long-term Capacity Building

15. The CFS has been looking at ways to improve its operational efficiency, in particular through better use of information technology. In May 2009, the CFS engaged a contractor to set up a new IT system to support the Food Surveillance Programme. The IT system, which is expected to be completed in early 2010, will help at –

(a) the planning stage: refine risk-based surveillance model and generate sampling plans;

(b) the sampling and testing stage: automate task assignments among officers, facilitate collection and delivery of samples, and improve data exchanges with the GL and PHLC; and

(c) the data utilization stage: improve analysis of data and test results.

16. Risk from food depends not only on the nature and level of hazard present in food, but also the amount of consumption of that particular food. Updated and representative local data on food consumption is therefore essential for more accurately assessing the risk to our population. The CFS is conducting the first territory-wide population-based Food Consumption Survey to collect information on the food consumption patterns of the general public in Hong Kong. The data will significantly enhance the relevance of the findings from the Risk Assessment Studies. The work on the Food Consumption Survey is at a final stage and we expect to put the data to full use in the Risk Assessment Studies to be conducted in 2009/10.

ADVICE SOUGHT

17. We will continue to review and enhance the effectiveness of the Food Surveillance Programme and the Risk Assessment Studies. Members are invited to note and comment on the latest developments in the food testing work of the CFS.

Food and Health Bureau

**Food and Environmental Hygiene Department
Centre for Food Safety**

June 2009

Projects under the 2008 Food Surveillance Programme

(A) Routine Food Surveillance

A variety of food were sampled using a risk-based approach for chemical and microbiological analyses. Chemical testing includes contaminants, food additives and natural toxins, while microbiological testing covers both bacteria and viruses.

(B) Targeted Food Surveillance

- (i) Microbiological Quality of Lunch Boxes
- (ii) Nitrate and Nitrite in Meat, Meat Products and Cheese
- (iii) Microbiological Quality of Prepackaged Food That Requires Reheating before Consumption
- (iv) Sudan Dyes in Eggs and Egg Products
- (v) Microbiological Quality of Ice-cream
- (vi) Sulphur Dioxide in Meat
- (vii) Bacillus cereus in Fermented Bean Curds
- (viii) Formaldehyde in Noodlefish
- (ix) Preservatives in Preserved Fruits and Vegetables

(C) Seasonal Food Surveillance

- (i) Chinese New Year Food
- (ii) Rice Dumplings
- (iii) Mooncakes
- (iv) Hairy Crabs
- (v) Buffet Food and Poon Choi

(D) Survey on Popular Food Items

- (i) Chinese Breakfast
- (ii) Street Snacks
- (iii) Western and Fast Food Style Breakfast
- (iv) Children Snacks

Risk Assessment Projects to be Conducted in 2009/10

(A) Nanotechnology and Food Safety

Nanotechnology has been increasingly applied in the food industry, but its impact on human health is not fully understood and there is at present no international guideline for the use of nanotechnology in food. A literature review will be conducted to identify the potential hazards and to evaluate the potential implications of such development in relation to food safety.

(B) Sugars Content in Prepackaged Non-alcoholic Beverages in Hong Kong (joint project with Consumer Council)

There is increasing public interest in diet and health locally and more and more food products, especially beverages, are labelled with sugar-related claims, e.g. “low sugar / sugar free”. A study will be conducted to explore the level of sugars, energy and other core nutrients in prepackaged non-alcoholic beverages in the market and to evaluate the compliance of the sugar-related claims.

(C) Nitrate and Nitrite in Vegetables Available in Hong Kong

In response to media reported cases of methaemoglobinaemia (Blue Baby Syndrome) due to nitrate and nitrite in Chinese spinach and the international concern on the risk from nitrate and nitrite in vegetables, a risk assessment study will be conducted to determine the nitrate and nitrite levels of vegetables available in Hong Kong and to explore storage, preparation and cooking methods for reducing the nitrate and nitrite levels.

(D) Microbiological Quality of Chinese Cold Dishes (joint project with Consumer Council)

Some Chinese cold dishes are likely to be associated with higher microbiological risk as they are stored at room temperature for a period of time after they are cooked but are not reheated prior to serving. In order to send proper messages and/or produce guidelines to relevant parties, a study on the microbiological quality of a range of common Chinese cold

dishes will be conducted to determine the microbiological quality of locally available Chinese cold dishes; and the microbiological risk of the current practice in preparation of Chinese cold dishes.

(E) Iodine Contents in Food

Iodine is an essential nutrient and Iodine Deficiency Disorders (IDD) has been identified as a major public health problem worldwide. As information on the source of iodine in local foods and its consumption status in Hong Kong is scarce, a study will be conducted to determine the iodine contents in locally available foods that are the main dietary sources of iodine, e.g. fish, crustaceans, seaweeds, egg, milk. The results will be useful for monitoring Hong Kong people's iodine intake and assessing their risk of under- or over-consumption of iodine.

(F) Hepatitis E Virus in Food

According to surveillance data of the Centre for Health Protection (CHP), there has been a rising trend of hepatitis E recorded locally; and while no common sources of infection have been identified, some of the patients have consumed raw or semi-cooked food such as shellfish or pig offal. In order to provide data on the local food sources of Hepatitis E Virus (HEV), a study will be conducted on the prevalence of HEV in locally slaughtered pigs as well as on the genetical relationship between HEV identified from food and in human cases.