2007 Food Safety Report No. 3

Centre for Food Safety

Food and Environmental Hygiene Department

August 2007

食物環境衞生署
Food and Environmental Hygiene Department

食物安全中心
Centre for Food Safety

Introduction

- Under the food surveillance programme of the Centre for Food Safety (CFS), food samples are collected at import, wholesale and retail levels of the market for microbiological and chemical analysis.

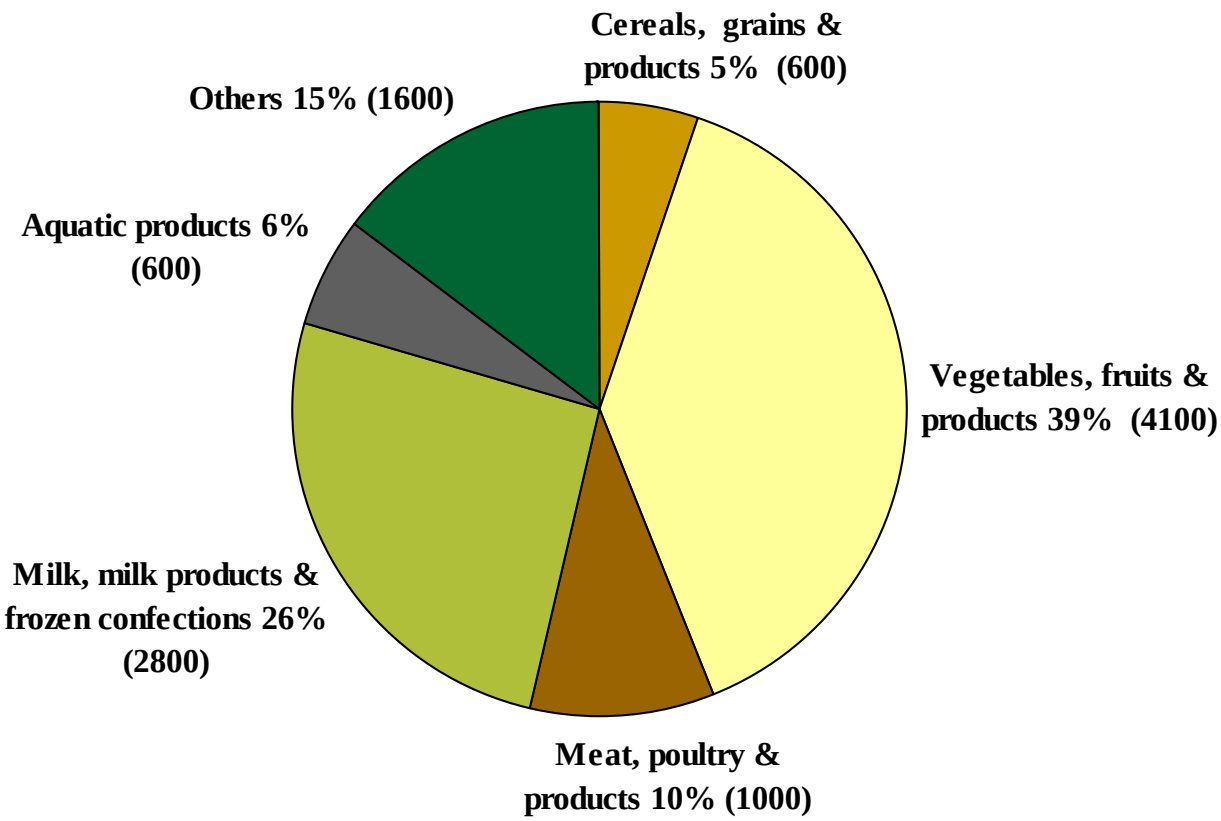
- Starting from 2007, CFS has adopted a more targeted and client oriented three-tier approach to food surveillance, consisting of:
  - Routine food surveillance
  - Targeted food surveillance
  - Seasonal food surveillance

- In May and June 2007, CFS had conducted the following seasonal or targeted food surveillance projects in addition to the routine surveillance:
  - Rice dumplings
  - Microbiological quality of ice-cream products
  - Microbiological quality of lunch boxes

- This presentation gives an account of the food surveillance sample analyses that were completed in May and June 2007.

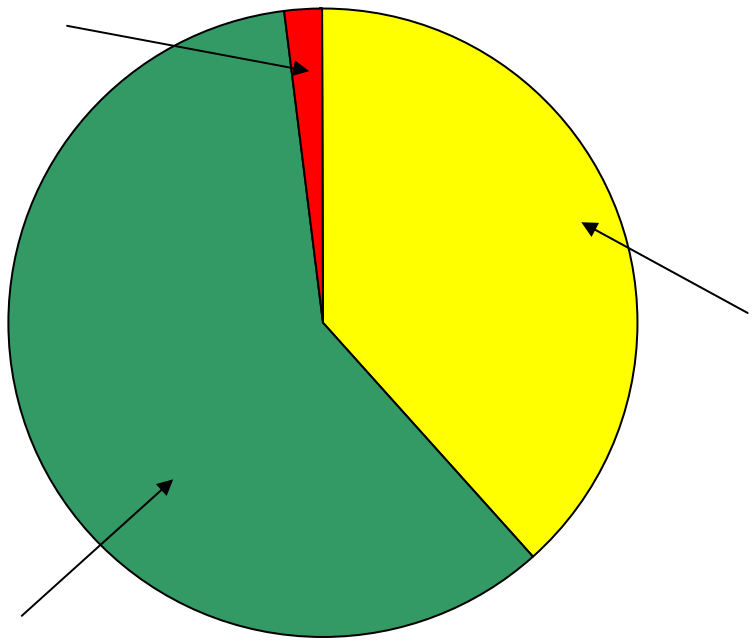
Types of food tested

- About 10600 food samples of various food groups were tested.



N.B.: Figures in brackets are rounded

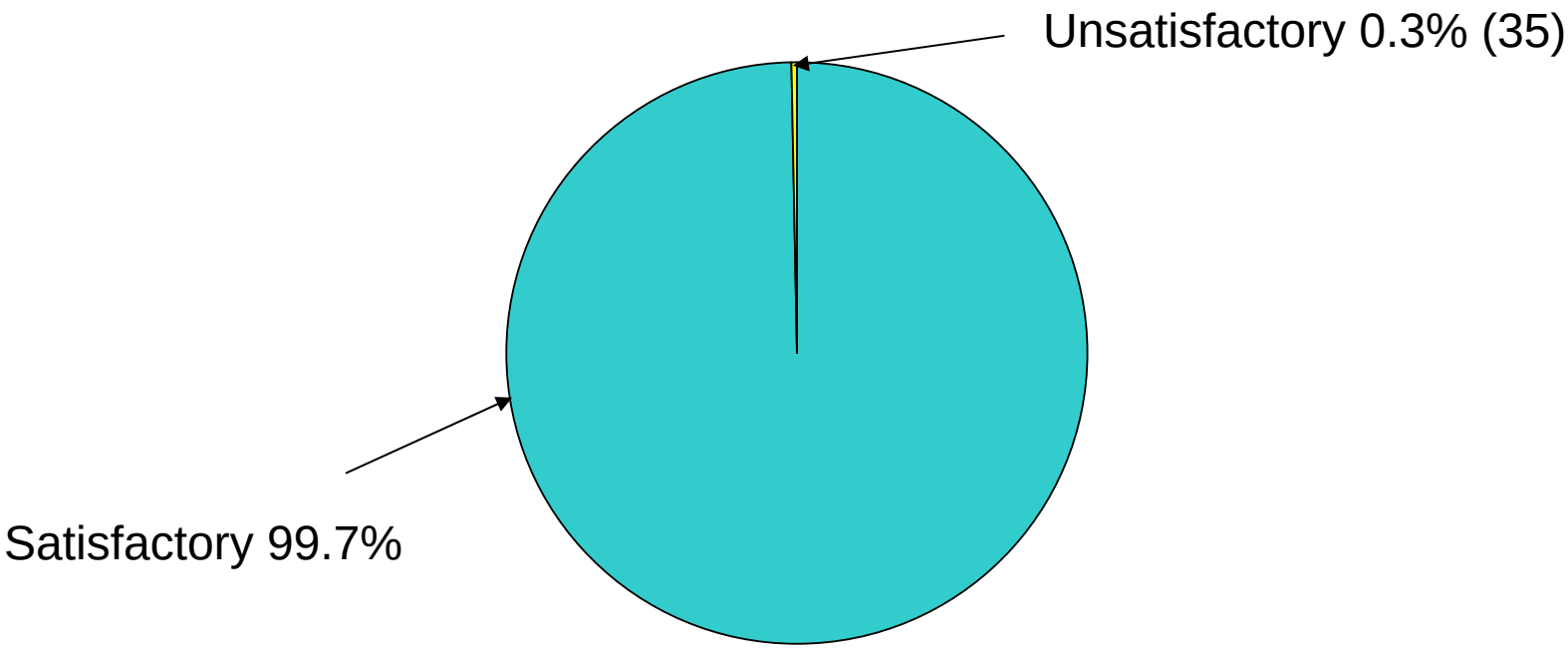
Types of testing



N.B.: Figures in brackets are rounded

Overall results

- Overall satisfactory rate was 99.7%.
- Totally 35 unsatisfactory samples.



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Unsatisfactory samples

- 35 unsatisfactory food samples included 17 previously announced results. The remaining 18 unsatisfactory samples are as follow:

Food Group	***No. of Samples Tested***	***No. of Unsatisfactory Samples***
Vegetables, fruits & products	4100	6
Cereal, grains and products	600	1
Meat, poultry & products	1000	2
Milk, milk products & frozen confections	2800	1
Aquatic products	600	3
Others	1600	5

1. Vegetables, fruits & products

- About 4100 samples with overall satisfactory rate 99.9%
- Analysis included:
  - Microbiological tests
  - Chemical tests
    - > 100 types of 4 major groups of pesticides
      - organo-chlorine (e.g., DDT, HCH)
      - organo-phosphorous (e.g., methamidophos & isocarbophos)
      - N-methlycarbamates (e.g., carbofuran)
      - pyrethroids
    - Metallic contamination (included cadmium, arsenic and lead)
    - Preservatives (included sulphur dioxide, sorbic acid and benzoic acid)
    - Colouring matters
    - Sweeteners

1. Vegetables, fruits & products (Cont'd)

Pesticide residues

- 2 unsatisfactory samples:

Sample	Unsatisfactory testing item	Result
2 Indian lettuce	Methamidophos	2-7 ppm (1)

(1) The levels are low and should not pose significant health effect on consumers.

Metallic contamination

- 2 unsatisfactory samples:

Sample	Unsatisfactory testing item	Result
Tientsin cabbage	Cadmium	0.16 ppm (2)
Chinese wolfberry	Cadmium	0.17 ppm (2)

(2) The levels are low and should not pose significant health effect on consumers .

1. Vegetables, fruits & products (Cont'd)

Preservatives

- 2 unsatisfactory samples.

Sample	Unsatisfactory testing item	Result
Preserved garlic bulb	Sulphur dioxide	1800 ppm (1)
Preserved rakkyo	Benzoic acid	690 ppm (1)

(1) Commonly used preservatives that are of low toxicity and should not pose significant health effect on consumers.

Colouring matters

- All samples tested for colouring matters were satisfactory.

2. Meat, poultry & products

- About 1000 samples and overall satisfactory rate was 99.8%.

- Analysis included
  - Microbiological tests
  - Chemical tests (veterinary drug residues, preservatives, colouring matters and other food additives)

2. Meat, poultry & products (Cont'd)

Veterinary drugs

- 1 unsatisfactory sample:

Sample	Unsatisfactory testing item	Result
Pork	Clenbuterol	0.015 ppm [1]

[1] Prohibited substance but the level is low and is unlikely to pose significant health effect on consumers.

Colouring matters

- 1 unsatisfactory sample:

Sample	Unsatisfactory testing item	Result
BBQ pork	Orange II (colouring matter)	Detected [2]

[2] Not permitted but of low toxicity and should not pose significant health effect on consumers.

Preservatives

- All samples tested for preservatives were satisfactory.

3. Aquatic products

- About 600 samples and overall satisfactory rate was 97.7%.

- Analysis included
  - Microbiological tests
  - Chemical tests (e.g. toxins, colouring matters, metallic contamination and preservatives).

3. Aquatic products (Cont'd)

Toxins

- Testing for toxins included:
  - Ciguatoxin
  - Scombrotoxin (histamine)
  - Shellfish toxins

- Ciguatoxin
  - 1 unsatisfactory sample:

Sample	Unsatisfactory testing item	Result
Honeycomb grouper	Ciguatoxin	250 Units (1)

(1) Ciguatoxin may cause gastrointestinal upset and numbness.

3. Aquatic products (Cont'd)

- Scombrotoxin (histamine)
  - Besides the 3 unsatisfactory samples of salted fish announced previously, there was 1 other unsatisfactory follow up sample.

Sample	Unsatisfactory testing item	Result
Salted fish	Histamine	1000 ppm (1)

(1) Scombrotoxin (histamine) may cause burning sensation around the mouth, facial flushing, sweating, nausea and headache which will normally disappear in 12 hours.

3. Aquatic products (Cont'd)

- Shellfish toxins
  - Besides the 8 unsatisfactory samples of scallops (sin pui) announced previously, there was 1 other unsatisfactory follow up sample.

Sample	Unsatisfactory testing item	Result
Scallop (sin pui)	Paralytic shellfish poisoning toxin	476 µg/100g [(2)]

[(2)] PSP toxin may cause neurological symptoms such as numbness of extremities and mouth.

Metallic contamination

- All samples tested for metallic contamination were satisfactory.

4. Milk, milk products & frozen confections

- About 2800 samples were tested including ice-cream, cheese, yogurt, milk and milk products, etc.
- Analysis included
  - Microbiological tests (e.g., *Salmonella* and *Listeria monocytogenes*)
  - Chemical tests (e.g. preservatives, colouring matters, sweeteners)
- All samples were tested negative for pathogens.
- Besides the 4 previously announced soft ice-cream samples, there was 1 other unsatisfactory sample:

Sample	Unsatisfactory testing item	Result
Bottled fresh milk	Coliform organisms	Present in 0.1 ml (1)

(1) Coliform organism count is a hygienic indicator.

5. Cereal, grains and products

- About 600 samples including bread, crackers, rice and noodles, etc.

- Analysis included microbiological and chemical tests such as:
  - sweeteners
  - colouring matters
  - pesticides residues
  - preservatives

- 1 unsatisfactory sample:

Sample	Unsatisfactory testing item	Result
Frozen bread	Propionic acid (preservative)	7200 ppm (1)

(1) A commonly used preservative of low toxicity. The level is low and should not pose significant health effect on consumers.

6. Other food commodities

- About 1600 samples and overall satisfactory rate was 99.6%.
- Types of food included:
  - Mixed dishes
    - Pathogens, colouring matters and preservatives
  - Dim Sum
    - Pathogens, preservatives, colouring matters and sweeteners
  - Beverages
    - Pathogens, colouring matter, sweeteners and preservatives
  - Sushi and sashimi
    - Microbiological examination

6. Other food commodities (Cont'd)

- Sugar and sweets
  - Pathogens, sweeteners, colouring matters and preservatives
- Condiments and sauces
  - Pathogens, colouring matters and preservatives
- Snacks
  - Sweeteners, colouring matters and preservatives
- Egg and egg products
  - Pathogens and colouring matters
- Others

6. Other food commodities (Cont'd)

- Besides 2 unsatisfactory samples of rice dumplings announced previously, there were another 5 unsatisfactory samples.

Sample	Unsatisfactory testing item	Result
Brown sugar	Sulphur dioxide (preservative)	190 ppm (1)
Fried rice	*Bacillus cereus* (pathogen)	180 millions /g (2)
Mushroom sauce	Benzoic acid (preservative)	500 ppm (1)
Chinese wolfberry fruit	Sulphur dioxide (preservative)	8900 ppm (1)
Cooked chicken claws	Salmonella (pathogen)	Detected (2)

(1) Commonly used preservatives that are of low toxicity and should not pose significant health effect on consumers.
(2) *Bacillus cereus* and *Salmonella* may cause gastrointestinal upset such as abdominal pain and diarrhoea.

Seasonal Food Surveillance on Rice Dumplings

- Objective
  - To provide food safety information on rice dumplings to consumers and the trade in a timely manner
- 79 samples were collected from food premises and food factories for chemical analysis and microbiological analysis.
- Overall satisfactory rate was 97%.
- Results
  - Two samples were found to contain trace amount (0.046 and 0.12 ppm respectively) of the non-permitted colouring matter, Sudan IV. Based on the levels of Sudan dyes detected, usual consumption is unlikely to pose significant health effect.

Targeted Food Surveillance on Microbiological Quality of Ice-cream

- Objective
  - The CFS conducted a targeted food surveillance project to assess the microbiological quality of ice-cream.

- About 1100 samples of ice-cream were collected from food factories, mobile vans, supermarkets, restaurants and retail outlets for microbiological tests.

Results

- All samples of ice-cream were tested negative for pathogens.
- The hygienic indicators (TBC and coliform organisms) for four samples of soft ice-cream collected from retail outlets were found to exceed the legal standard.
  - Coliform organisms: 1100/g –1900/g
  - TBC: 54000/g –83000/g
- Usual consumption is unlikely to pose significant health effect.

Targeted Food Surveillance on Microbiological Quality of Lunch Boxes

- Objective
  - CFS conducted a targeted food surveillance to assess the microbiological quality of lunch boxes.

- 150 samples of lunch boxes were collected from food factories and restaurants for microbiological testing.

- Results
  - All samples were found to be satisfactory.

Follow up actions

- Trace source of food items in question.
- Request vendors to stop sale and dispose of incriminated food items.
- Take follow-up samples.
- Issue warning letters to concerned vendors.
- Take prosecution actions if there is sufficient evidence.

Summary

- In almost all cases, the exceedances or breaches were not serious and would not pose immediate health risks.

- As for the scallop (sin pui) sample with high level of PSP toxin and the honeycomb grouper sample with ciguatoxin, they may cause gastrointestinal upset and neurological symptoms such as numbness of mouth and extremities.

- For the cooked chicken claws and fried rice with *Salmonella* and *Bacillus cereus* respectively, they may cause gastrointestinal upset such as abdominal pain and diarrhoea.

- The other unsatisfactory samples were mainly related to the use of excessive/non-permitted food additives, veterinary drug residues or pesticide residues .

Advice for trade

- Source coral reef fish, shellfish and pork from reliable suppliers. Maintain a good recording system to allow source tracing if needed.
- According to legislation, it is an offence to sell meat containing clenbuterol.
- Use only permitted food additives, follow good manufacturing practice and comply with legal requirements.
- When preparing food, especially for those involving intensive preparations :
  - maintain good personal hygiene
  - wash raw materials thoroughly
  - cook food thoroughly
  - separate raw food from ready-to-eat food to prevent cross contamination
  - keep food at safe temperatures (4^{o}C or below; 60 ^{o}C or above)

Advice for consumers

- Buy coral reef fish from reliable and licensed seafood shops.
- Consume less coral reef fish and eat small amount per meal. Avoid eating the head, viscera, skin, and roe.
- Remove the viscera and gonads of shellfish before cooking, consume small amount of shellfish at any one meal, and avoid consuming the cooking liquid.
- Maintain a balanced diet to minimize risk.
- Wash vegetables and fruits thoroughly.