

2007 Food Safety Report No. 5

Centre for Food Safety

Food and Environmental Hygiene Department

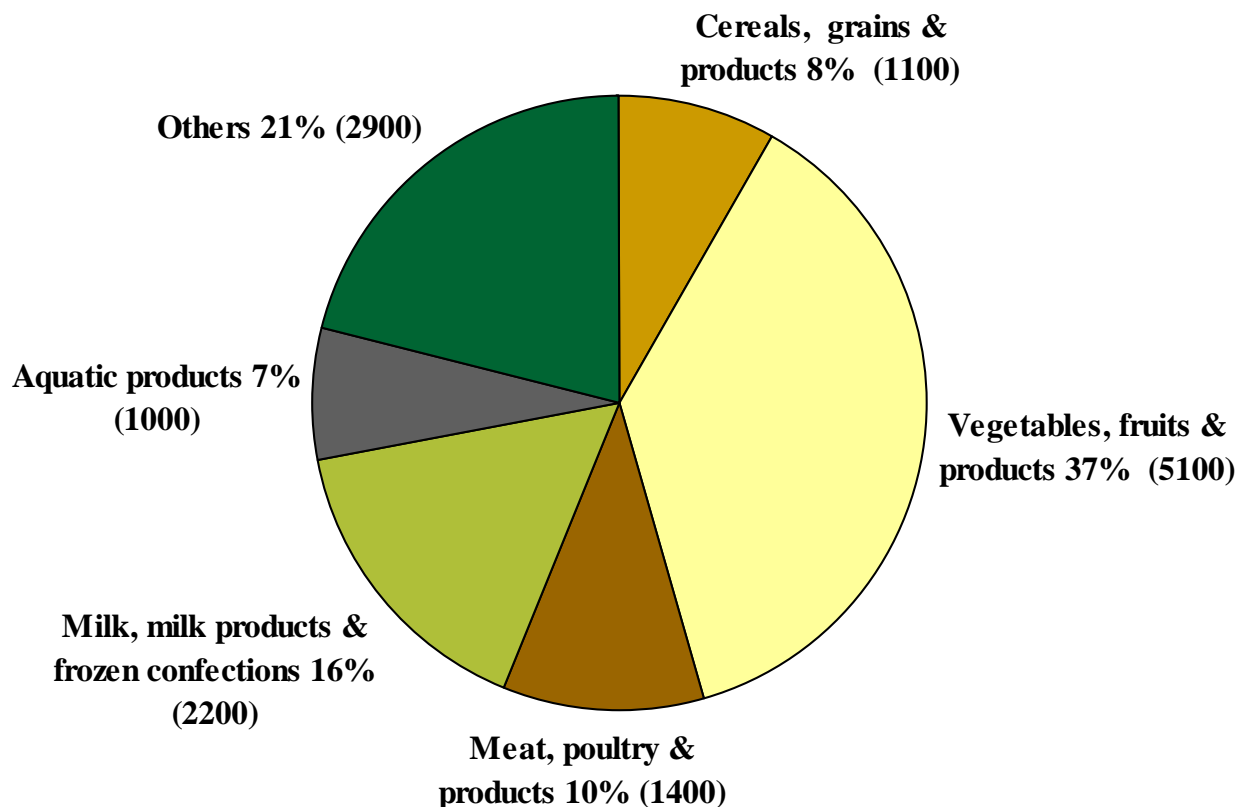
November 2007

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
- Besides the routine surveillance, CFS announced a seasonal food surveillance project about “Hairy crabs” in October.
- This presentation gives an account of the food surveillance sample analyses that were completed in September and October 2007.

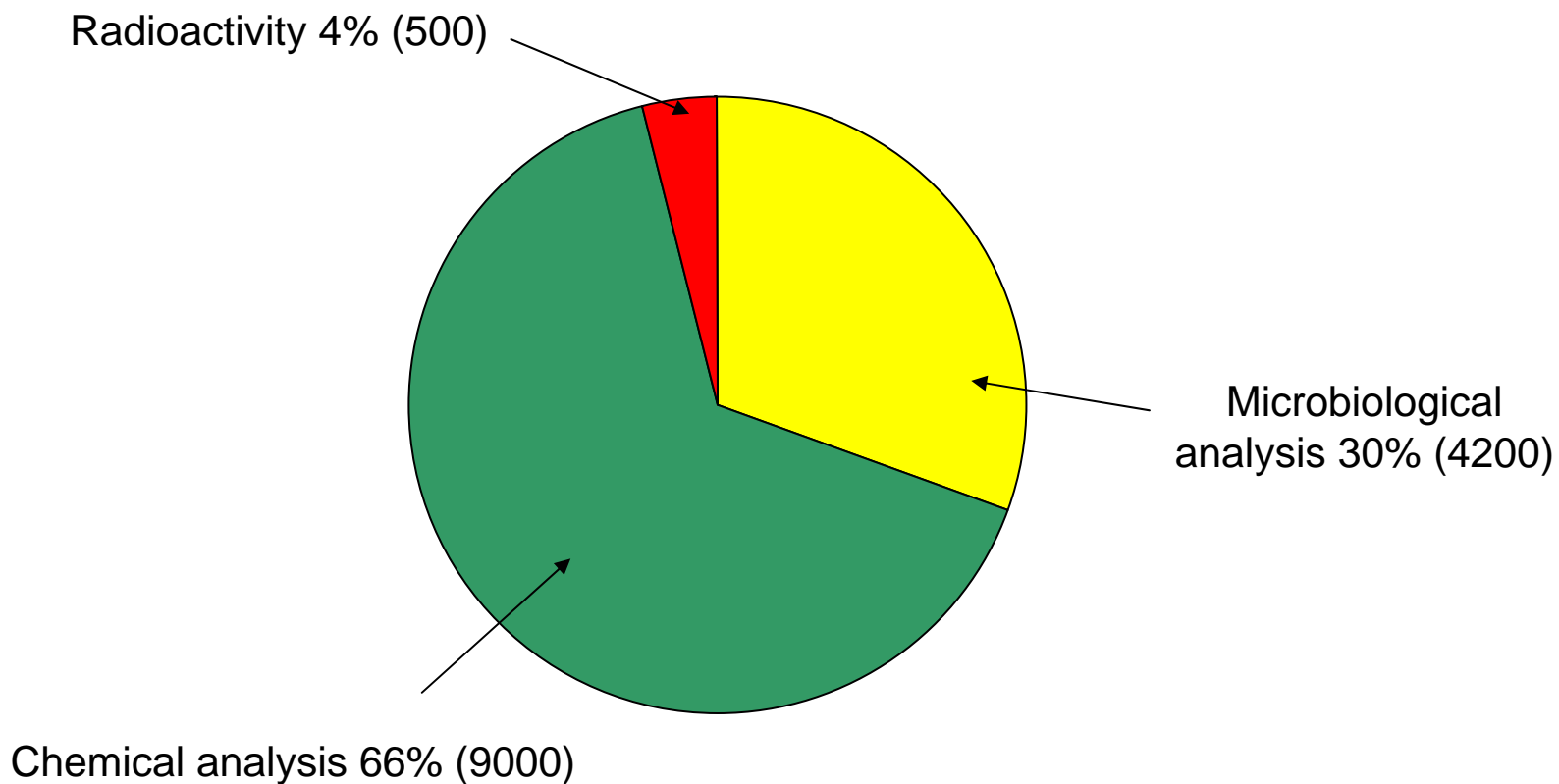
Types of food tested

- About 13700 food samples of various food groups were tested.



N.B.: Figures in brackets are rounded

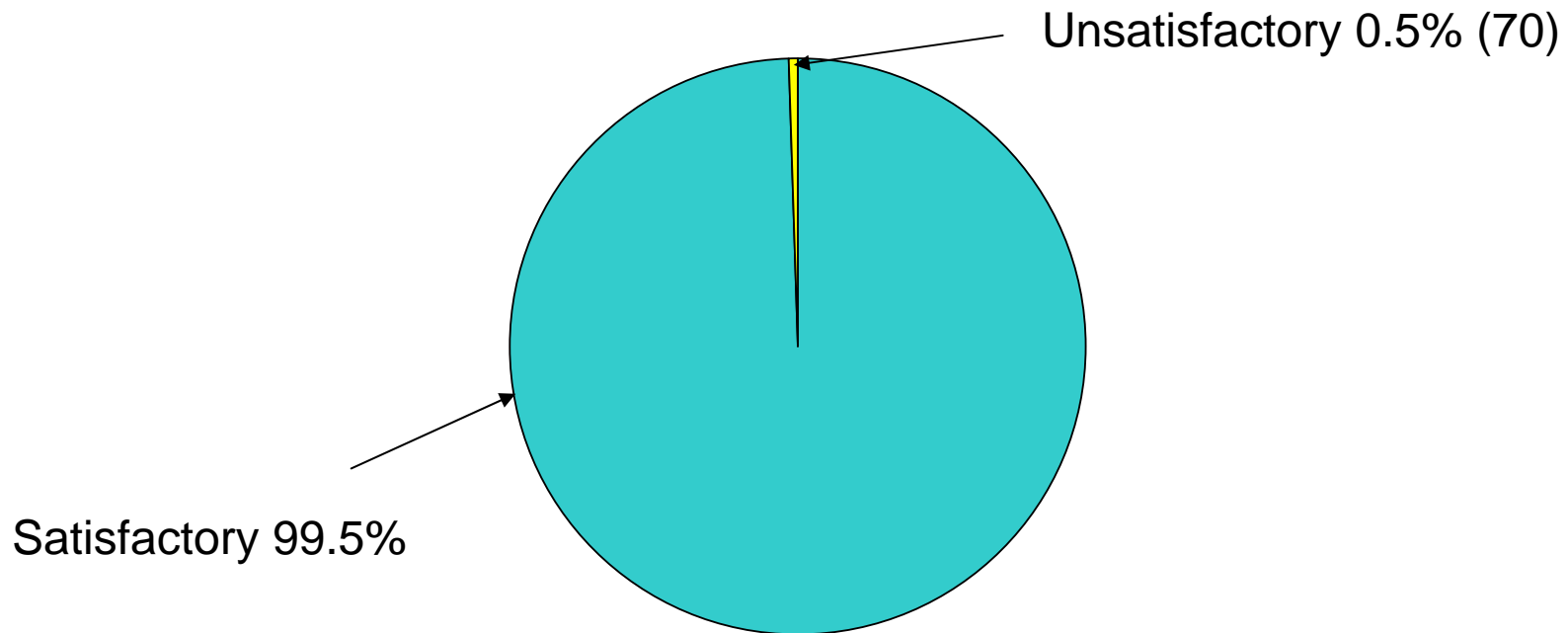
Types of testing



N.B.: Figures in brackets are rounded

Overall results

- Overall satisfactory rate was 99.5%.
- Totally 70 unsatisfactory samples.



Unsatisfactory samples

- 70 unsatisfactory food samples included 13 previously announced results. The remaining 57 unsatisfactory samples are as follow:

| <i>Food Group</i> | <i>No. of Samples Tested</i> | <i>No. of Unsatisfactory Samples</i> |
|--|-------------------------------------|---|
| <i>Vegetables, fruits & products</i> | 5100 | 14 |
| <i>Meat, poultry & products</i> | 1400 | 5 |
| <i>Aquatic products</i> | 1000 | 4 |
| <i>Milk, milk products & frozen confections</i> | 2200 | 23 |
| <i>Cereal, grains and products</i> | 1100 | 6 |
| <i>Others</i> | 2900 | 5 |

1. Vegetables, fruits & products

- About 5100 samples with overall satisfactory rate 99.7%
- 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 |
|----------------|-----------------------------|------------------------|
| Water spinach | Methamidophos | 2.3 ppm ⁽¹⁾ |
| Chinese celery | Isocarbophos | 9 ppm ⁽¹⁾ |

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

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

Preservatives

- 11 unsatisfactory samples.

| Sample | Unsatisfactory testing item | Result |
|--|--|--|
| 8 preserved and pickled vegetables (including rakkyo, mustard greens, dried tomato, ginger and other preserved vegetables) | Benzoic acid Sulphur dioxide | 190 - 1300 ppm ⁽¹⁾ 110 – 4100 ppm ⁽¹⁾ |
| 3 preserved fruits (including plum, olive and dried hawthorn) | Benzoic acid Sulphur dioxide Sorbic acid | 200 - 670 ppm ⁽¹⁾ 130 ppm ⁽¹⁾ 110 ppm ⁽¹⁾ |

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

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

Colouring matters

- 1 unsatisfactory sample.

| Sample | Unsatisfactory testing item | Result |
|-----------------|-----------------------------|-------------------------|
| Preserved olive | Rhodamine B & Orange II | Detected ⁽¹⁾ |

⁽¹⁾ Not permitted colouring matter in food

Metallic contamination

- All vegetables and fruits tested for metallic contamination were satisfactory.

2. Meat, poultry & products

- About 1400 samples and overall satisfactory rate was 99.0%.
- Analysis included
 - Microbiological tests
 - Chemical tests (preservatives, veterinary drug residues, colouring matters and other food additives)

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

Veterinary drug residues

- 1 unsatisfactory sample:

| Sample | Unsatisfactory testing item | Result |
|--------|-----------------------------|--------------------------|
| Pork | Clenbuterol | 0.022 ppm ⁽¹⁾ |

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

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

Preservatives

- Besides the 9 previously announced unsatisfactory samples of meat with detected sulphur dioxide, there were 2 unsatisfactory samples:

| Sample | Unsatisfactory testing item | Result |
|------------------|-----------------------------|------------------------|
| Dried pork stick | Sorbic acid | 110 ppm ⁽¹⁾ |
| Beef balls | Sorbic acid | 70 ppm ⁽¹⁾ |

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

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

Pathogens

- 2 unsatisfactory sample:

| Sample | Unsatisfactory testing item | Result |
|---------------|------------------------------|----------------------------------|
| Pig's knuckle | <i>Staphylococcus aureus</i> | $8.7 \times 10^4/\text{g}^{(1)}$ |
| Plain chicken | <i>Staphylococcus aureus</i> | $2.3 \times 10^4/\text{g}^{(1)}$ |

⁽¹⁾ *Staphylococcus aureus* may cause gastrointestinal upset such as abdominal pain and vomiting.

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

Colouring matters

- All samples tested for colouring matters were satisfactory.

3. Aquatic products

- About 1000 samples and overall satisfactory rate was 99.5%.
- Analysis included
 - Microbiological tests
 - Chemical tests (e.g. veterinary drug residues, biotoxins, colouring matters, metallic contamination and preservatives).

3. Aquatic products (Cont'd)

Veterinary drug residues

- Except the previously announced turbot fish sample that contained trace amount of nitrofurans and chloramphenicol, all samples tested for veterinary drug residues were satisfactory.

3. Aquatic products (Cont'd)

Metallic contamination

- 2 unsatisfactory samples:

| Sample | Unsatisfactory testing item | Result |
|-------------|-----------------------------|------------------------|
| Clam meat | Chromium | 1.6 ppm ⁽¹⁾ |
| Oyster meat | Cadmium | 3.3 ppm ⁽¹⁾ |

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

Preservatives

- 1 unsatisfactory sample:

| Sample | Unsatisfactory testing item | Result |
|-------------|-----------------------------|------------------------|
| Noodle fish | Formaldehyde | 170 ppm ⁽²⁾ |

(2) The level is low and should not pose significant health effects on consumers

3. Aquatic products (Cont'd)

Biotoxin

- 1 unsatisfactory sample:

| Sample | Unsatisfactory testing item | Result |
|-------------|-----------------------------|--------------------------|
| Red snapper | Ciguatoxin | 250 Units ⁽¹⁾ |

⁽¹⁾ Ciguatoxin may cause gastrointestinal upset and numbness.

- Shellfish toxins
 - All samples tested for shellfish toxins were satisfactory.

4. Milk, milk products & frozen confections

- About 2200 samples were tested including ice-cream, cheese, milk and milk products, etc.
- The overall satisfactory rate was 98.8%
- Analysis included
 - Microbiological tests (total bacterial count, pathogens, e.g., *Salmonella* and *Listeria monocytogenes*)
 - Chemical tests (preservatives, colouring matters, sweeteners)

4. Milk, milk products & frozen confections (Cont'd)

- All samples were tested negative for pathogens.
- Besides the 3 previously announced unsatisfactory mooncake samples, there were 23 other unsatisfactory samples:

| Sample | Unsatisfactory testing item | Result |
|---|---|---|
| 22 frozen confection (including mooncakes*, mochi ice, soft ice-cream and ice-cream) | Coliform organisms Total bacterial count | 110 – 400/ g ⁽¹⁾ 6.2 x 10 ⁴ / g ⁽¹⁾ |
| 1 Raw milk | Coliform organisms Total bacterial count | Present in 0.001 ml ⁽¹⁾ 2.2 x 10 ⁵ / ml ⁽¹⁾ |

(1) Total bacterial counts and coliform organisms are hygienic indicator.

* Including four follow-up samples.

5. Cereal, grains and products

- About 1100 samples including bread, crackers, rice and noodles, etc.
- The overall satisfactory rate was 99.5%
- Analysis included microbiological and chemical tests such as:
 - sweeteners
 - colouring matters
 - pesticide residues
 - preservatives

5. Cereal, grains and products

Colouring matters

- 2 unsatisfactory samples :

| Sample | Unsatisfactory testing item | Result |
|--------------|-----------------------------|-------------------------|
| Corn chips | Sudan I | Detected ⁽¹⁾ |
| Rice cracker | Acid Red 52 | Detected ⁽¹⁾ |

⁽¹⁾ Not permitted in food.
These are follow-up samples.

Metallic contamination

- 4 unsatisfactory samples:

| Sample | Unsatisfactory testing item | Result |
|-------------------|-----------------------------|--------------------------------|
| 4 Rice vermicelli | Cadmium | 0.16 – 0.25 ppm ⁽²⁾ |

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

6. Other food commodities

- About 2900 samples and overall satisfactory rate was 99.8%.
- Types of food included:
 - Mixed dishes
 - Pathogens, colouring matters and preservatives
 - Dim Sum
 - Pathogens, preservatives, colouring matters and sweeteners
 - Beverages
 - Pathogens, colouring matters, 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)

■ 5 unsatisfactory samples:

Chemical analysis

| Sample | Unsatisfactory testing item | Result |
|-----------|-----------------------------|------------------------|
| Root beer | Benzoic acid (preservative) | 380 ppm ⁽¹⁾ |
| Rice roll | Benzoic acid (preservative) | 140 ppm ⁽¹⁾ |

⁽¹⁾ Commonly used preservative of low toxicity that should not pose significant health effects on consumers.

Microbiological analysis

| Sample | Unsatisfactory testing item | Result |
|-----------------------------|-----------------------------------|--|
| Congee with fish | <i>Salmonella</i> (pathogen) | Present in 25 g ⁽²⁾ |
| Soya drink | <i>Bacillus cereus</i> (pathogen) | 1.1x10 ⁶ /ml ⁽²⁾ |
| Spaghetti with chicken meat | <i>Bacillus cereus</i> (pathogen) | 7.2x10 ⁵ /g ⁽²⁾ |

⁽²⁾ *Salmonella* and *Bacillus cereus* may cause gastrointestinal upset such as abdominal pain and diarrhoea.

Seasonal food surveillance on hairy crabs

■ Objective

- To provide information on the safety of hairy crabs to consumers and the trade in a timely manner.

■ 178 samples were collected from import, wholesale and retail levels for:

□ Chemical analysis

- Veterinary drug residues (e.g., chloramphenicol, sulphonamides, tetracycline, nitrofurans and malachite green)
- Metallic contamination (e.g., mercury, lead and arsenic)
- Synthetic hormones

□ Microbiological analysis

- Testing for parasites

■ Test results of all samples were 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 most cases, the exceedances or breaches were not serious and would not pose immediate health risks.
- As for the plain chicken, pig's knuckle, congee with fish and spaghetti with chicken meat found to carry pathogens, they may cause gastrointestinal upset such as abdominal pain, vomiting and diarrhoea.
- Coliform organisms and total bacterial count are hygienic indicators. The frozen confection samples contained coliform organisms and total bacterial count exceeding the legal limits.
- For the red snapper with ciguatoxin, it may cause gastrointestinal upset and neurological symptoms such as numbness of mouth and extremities.
- The other unsatisfactory samples were mainly related to the use of excessive/non-permitted food additives, metallic contamination, veterinary drug residues or pesticide residues .

Advice for trade

- Use only permitted food additives, follow good manufacturing practice and comply with legal requirements.
- Source coral reef fish and pork from reliable suppliers. Maintain a good recording system to allow source tracing if needed.
- 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°C or below; 60 °C or above)

Advice for consumers

- Patronize licensed restaurants and buy meat and coral reef fish from reliable shops.
- Consume less coral reef fish and eat small amount per meal. Avoid eating the head, viscera, skin, and roe.
- Wash vegetables and fruits thoroughly.
- Maintain a balanced diet to minimize risk.