

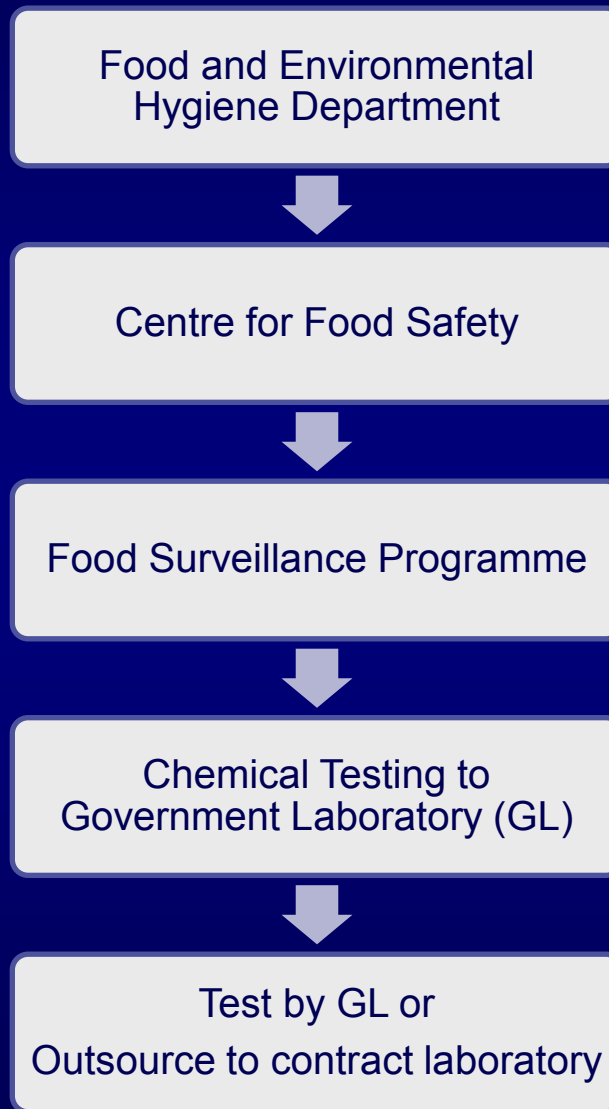


**Briefing Session on**  
**Outsourcing of**  
**Food Tests:**  
**Review and Way Forward**

**Government Laboratory**  
**October 2016**

# **Review of Outsourcing Contracts in 2016-17**

# Food Monitoring





# Outsourcing in 2016-17

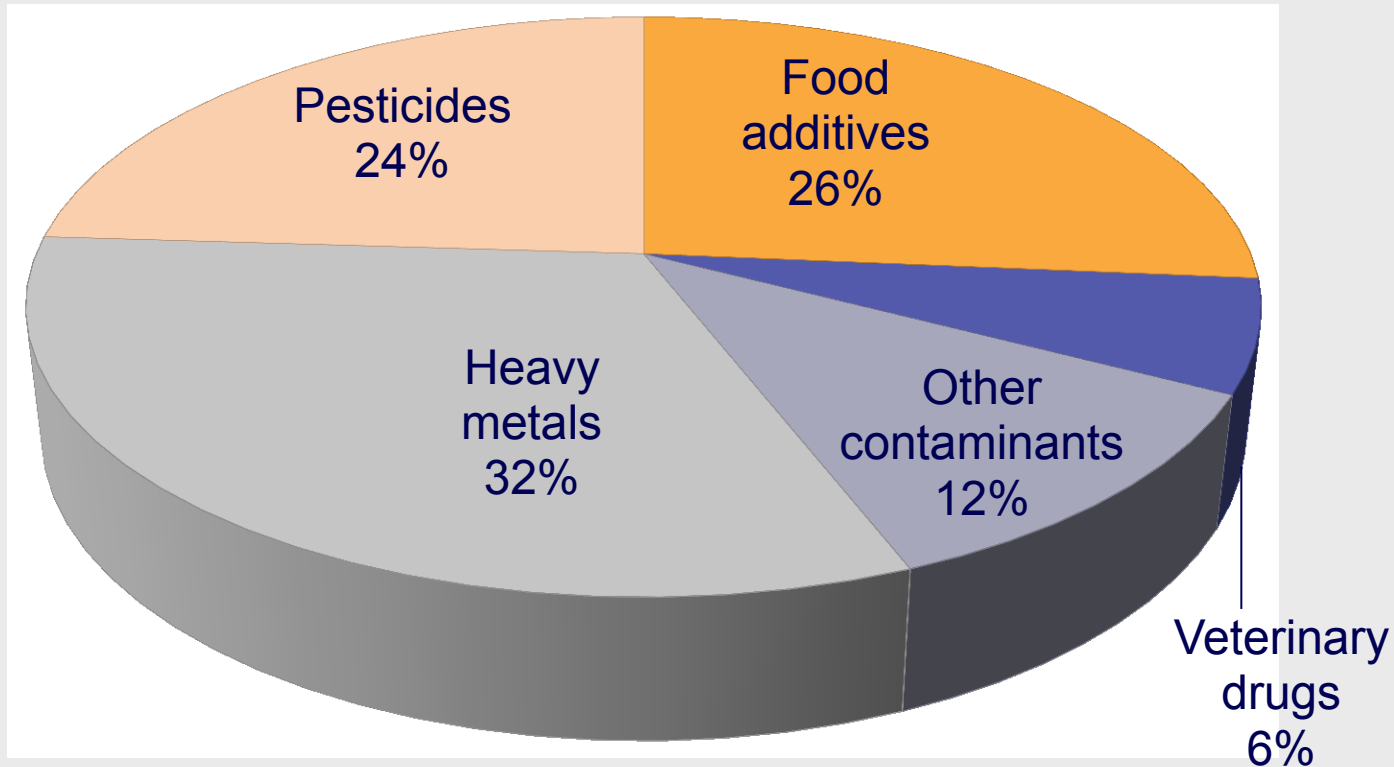
- ★ 19 contracts issued by Oct 2016

- ★ total about 124,345 tests
- ★ contract period: 4 months to 1 year
- ★ exercise ends in March 2017

- ★ Invitations to quotation sent in 5 phases

- ★ Phase I ,February 2016 (6)
- ★ Phase II, March 2016 (6)
- ★ Phase III, May 2016 (5)
- ★ Phase IV, June 2016 (1)
- ★ Phase V, October 2016 (1)

# Sample Distribution in 2016-17



# CAP 132 Public Health and Municipal Services Ordinance

- ✱ CAP 132H Colouring Matter in Food Regulations
- ✱ CAP 132V Food Adulteration (Metallic Contamination) Regulations
- ✱ CAP 132AF Harmful Substances in Food Regulations
- ✱ CAP 132BD Preservatives in Food Regulation
- ✱ CAP 132CM Pesticide Residues in Food Regulation

# Salient Points (1)

- ✦ Accredited in corresponding tests
  - ✦ maintaining accreditation status from application to the end of contract period
- ✦ Test parameters in specified matrices
- ✦ Specified reporting limits or better
- ✦ Delivery time of results
  - ✦ 3 – 15 days
- ✦ Testing capacity
  - ✦ 30 – 140 samples per week

# Salient Points (2)

- ✦ Test sample collection
  - ✦ within specified time after notice
  - ✦ GL Headquarters at Homantin
- ✦ Retention of remaining test samples
- ✦ Past performance will be taken into account when future quotations are evaluated



# Issued Contracts (Food Additives) (1)

## ★ Sulphur dioxide and other preservatives

- ★ 3 contracts on general foodstuffs
- ★ SO<sub>2</sub> alone (1 year)
- ★ SO<sub>2</sub> + 3 acids (benzoic acid, sorbic acid, salicylic acid) + 3 parabens (1 year)
- ★ SO<sub>2</sub> + 2 acids (benzoic acid, sorbic acid) + 3 parabens (6 months)
- ★ Total about 3,290 samples
- ★ reporting limits: 8 mg/kg for SO<sub>2</sub>, 30 mg/kg for parabens and 50 mg/kg for others

# Issued Contracts (Food Additives) (2)

## ★ Nitrate/Nitrite

- ★ 1 contract ( 6 months) on meat, meat products and dairy products
- ★ about 440 samples
- ★ reporting limits: 5 mg/kg for nitrite (as  $\text{NaNO}_2$ ) and 30 mg/kg for nitrate (as  $\text{NaNO}_3$ )

## ★ Propionic acid

- ★ 1 contract (6 months) on flour confectionery
- ★ about 220 samples
- ★ reporting limit: 50 mg/kg

# Issued Contracts (Veterinary Drug Residues)

## ★ Chloramphenicol

- ★ 1 contract (1 year) for meat and aquatic products
- ★ about 600 samples
- ★ reporting limit: 0.3  $\mu\text{g}/\text{kg}$

## ★ Malachite Green

- ★ 2 contracts (4 months & 8 months) for aquatic products
- ★ Malachite Green and Leucomalachite Green
- ★ Total about 340 samples
- ★ reporting limit: MG and LMG: 0.5  $\mu\text{g}/\text{kg}$  each

# Issued Contracts (Other Contaminants) (1)

## ★ Sudan Dyes

- 1 contract (1 year) on general foodstuffs
- Sudan I, II, III, IV, Sudan Orange G, Sudan Red 7B, Dimethyl Yellow
- about 1,190 samples
- reporting limits: 20 µg/kg each

## ★ Melamine

- 1 contract (1 year) on general foodstuffs
- about 430 samples
- reporting limit: 1 mg/kg

# Issued Contracts (Other Contaminants) (2)

## ✦ Boric acid

- ✦ 1 contract (6 months) on general foodstuffs
- ✦ about 95 samples
- ✦ reporting limit: 50 mg/kg

# Issued Contracts (Heavy Metals / Toxic element)

## ★ 7 Heavy metals / Toxic element

- ★ 1 year contract for Sb, As, Cd, Cr, Pb, Hg and Sn in miscellaneous foods
- ★ About 1,850 samples
- ★ reporting limits: 0.02 mg/kg – 10 mg/kg

## ★ 4 Heavy metals / Toxic element

- ★ 1 year contract for any 4 heavy metals out of Sb, As, Cd, Cr, Pb, Hg, and Sn in general foodstuffs
- ★ About 1,330 samples
- ★ reporting limits: 0.02 mg/kg – 10 mg/kg



## Issued Contracts (Heavy Metals / Toxic element) (Con't)

- ✦ 1 Heavy metal / Toxic element
  - 1 year contract for any 1 heavy metal out of Sb, As, Cd, Cr, Pb, Hg, and Sn in general foodstuffs
  - About 1,600 samples
  - reporting limits: 0.02 mg/kg – 10 mg/kg

# Issued Contracts (Pesticides) (1)

- ✦ Pesticide Residues in Food Regulation (Cap 132CM) came into operation on 1 Aug 2014
- ✦ April 2016 – March 2017: 5 contracts
- ✦ Test parameters: selected from
  - ✦ Survey on pesticide residue testing in October 2015
- ✦ Matrices: unprocessed fruit and vegetables
- ✦ Total no. of samples: ~3,550



# Issued Contracts (Pesticides) (2)

## ★ Pesticide residues (new regulation) in fruit and vegetables

- cover residues definition
- reporting limit: according to extraneous maximum residue limit (EMRL)/maximum residue limit (MRL)
- April 2016 to March 2017 (3 Contracts)
  - List 16A (33 pesticides) in fruit and vegetables ~ 700 samples
  - List 16B (23 pesticides) in fruit and vegetables ~ 800 samples
  - List 16C (31 pesticides) in fruit and vegetables ~ 700 samples

# Issued Contracts (Pesticides) (3)

- ✦ Pesticide residues (new regulation) in fruit and vegetables
  - ✦ July 2016 to March 2017
    - 1 contract on 52 pesticides
      - List 16D in fruit and vegetables ~ 900 samples
  - ✦ November 2016 to March 2017
    - 1 contract on 57 pesticides
      - List 16E in fruit and vegetables ~ 500 samples

**Way Forward:**  
**Outsourcing Contracts**  
**in 2017-18**

# Outsourcing Contracts in 2017-18 (1)

- ✦ Around 123,000 tests
- ✦ Some contracts begin in April 2017
  - ✦ invitations to quotation will start in February 2017
- ✦ Contract period covers
  - ✦ 6 months to 1 year

## Outsourcing Contracts in 2017-18 (2)

- ✓ Keeping quotation documentation simple
- ✓ Submit all information according to the Checklist
- ✓ Single-envelope

# Outsourcing: Test Areas

- ✱ Food additives
- ✱ Pesticide residues
- ✱ Veterinary drug residues
- ✱ Heavy metals / toxic element
- ✱ Other contaminants

# General Requirements

- ★ Accredited in the corresponding tests
  - ★ maintaining the accreditation status from application to the end of contract period
- ★ Test sample collection
  - ★ within specified time after notice
  - ★ at specified locations
- ★ Report results within specified period
- ★ Retention / return of remaining test samples

# Contracts on Additives (1)

- ✦ Sulphur dioxide and other preservatives
  - ✦ About 3 contracts
  - ✦ Different combinations of :
    - SO<sub>2</sub>
    - SO<sub>2</sub> + 2 or 3 acids (benzoic acid, sorbic acid, with or without salicylic acid) + 3 parabens
  - ✦ about 3,300 samples total
  - ✦ reporting limits: 8 mg/kg for SO<sub>2</sub>, 30 mg/kg for parabens and 50 mg/kg for others



# Contracts on Additives (2)

- ✦ Propionic acid in flour confectionary (~220 samples)
  - ✦ reporting limit: 50 mg/kg
- ✦ Nitrate / nitrite in meat, meat products and dairy products (~440 samples)
  - ✦ reporting limit: 30 mg/kg as  $\text{NaNO}_3$  and 5 mg/kg as  $\text{NaNO}_2$

# Contracts on Veterinary Drug Residues

- ★ Chloramphenicol in meat and aquatic products (~600 samples)
  - ★ reporting limit: 0.3  $\mu\text{g}/\text{kg}$
- ★ Malachite green in aquatic products (~350 samples)
  - ★ reporting limit: 0.5  $\mu\text{g}/\text{kg}$  for MG or LMG, to be confirmed

# Contracts on Other Contaminants

- ✱ Sudan dyes in general foodstuffs (~1,190 samples)
  - ✱ Sudan I, II, III, IV, Sudan Orange G, Sudan Red 7B and Dimethyl Yellow
  - ✱ reporting limit : 20  $\mu\text{g}/\text{kg}$  each
- ✱ Melamine in general foodstuffs (~430 samples)
  - ✱ reporting limit: 1 mg/kg
- ✱ Boric acid in general foodstuffs (~95 samples)
  - ✱ reporting limit: 50 mg/kg

# Contracts on Heavy Metal/Toxic element

- ☀ Heavy metals / Toxic element in general foodstuffs [~4,600 samples; 1 contract (7M) + 1 contract on itemized basis (4M (Item 1) + 1M (Item 2))]
- ☀ 1 / 4 / 7 elements

Analyte	Reporting Limits
Antimony (Sb)	0.2 ppm
Arsenic (As)	0.1 ppm (0.132 ppm as $\text{As}_2\text{O}_3$ )
Cadmium (Cd)	0.02 ppm
Chromium (Cr)	0.2 ppm
Lead (Pb)	0.1 ppm
Mercury (Hg)	0.03 ppm
Tin (Sn)	10 ppm

# Contracts on Pesticide Residues (1)

- Continue to expand the pesticide residue list
- Survey on pesticide residue testing in September 2015
  - Multi-residue test methods
- Cover residues definition (unless otherwise stated in service specifications)
- Reporting limit: according to EMRL/MRL
- Depend on testing capability of service providers at time of launch

# Contracts on Pesticide Residues (2)

## ★ Desirable test parameters:

- ★ Carbendazim
- ★ Chlorbenzuron
- ★ Deltamethrin
- ★ Dichlofluanid
- ★ Fenbutatin oxide
- ★ Fluvalinate
- ★ Indoxacarb
- ★ Tefluthrin
- ★ Terbufos

# Contracts on Pesticide Residues (3)

## ★ Desirable test parameters:

### ★ Carbendazim

- Sum of benomyl, carbendazim and thiophanate-methyl, expressed as carbendazim
  - Benomyl
  - Carbendazim
  - Thiophanate-methyl
- Desirable reporting limit: 0.02 mg/kg

# Contracts on Pesticide Residues (4)

## ✦ Desirable test parameters:

### ✦ Chlorbenzuron

- Chlorbenzuron
- Desirable reporting limit: 3 mg/kg



# Contracts on Pesticide Residues (5)

## ★ Desirable test parameters:

### ★ Deltamethrin

- Sum of deltamethrin, alpha-R- and trans-deltamethrin ([1R-[1alpha(R\*),3alpha]]-3-(2,2-dibromoethenyl)-2,2-dimethyl-cyclopropanecarboxylic acid, cyano(3-phenoxyphenyl)methyl ester and [1R-[1alpha(S\*),3beta]]-3-(2,2-dibromoethenyl)-2,2-dimethyl-cyclopropanecarboxylic acid, cyano(3-phenoxyphenyl)methyl ester)
- Desirable reporting limit: 0.01 mg/kg

# Contracts on Pesticide Residues (6)

## ★ Desirable test parameters:

### ★ Dichlofluanid

- Dichlofluanid
- Desirable reporting limit: 0.1 mg/kg

### ★ Fenbutatin oxide

- Fenbutatin oxide
- Desirable reporting limit: 0.5 mg/kg

# Contracts on Pesticide Residues (7)

## ✦ Desirable test parameters:

### ✦ Fluvalinate

- Fluvalinate
- Desirable reporting limit: 0.5 mg/kg

### ✦ Indoxacarb

- Sum of indoxacarb and its R enantiomer
- Desirable reporting limit: 0.02 mg/kg

# Contracts on Pesticide Residues (8)

## ★ Desirable test parameters:

### ★ Tefluthrin

- Sum of tefluthrin and (Z)-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylic acid
  - Tefluthrin
  - (Z)-3-(2-chloro-3,3,3-trifluoro-1-propenyl)-2,2-dimethylcyclopropanecarboxylic acid
- Desirable reporting limit: 0.06 mg/kg

# Contracts on Pesticide Residues (9)

## ★ Desirable test parameters:

### ★ Terbufos

- Sum of terbufos, its oxygen analogue, and their sulphoxides and sulphones, expressed as terbufos
  - Terbufos
  - Terbufos sulphone
  - Terbufos sulphoxide
  - Terbufos oxon
  - Terbufos oxon sulphone
  - Terbufos oxon sulphoxide
- Desirable reporting limit: 0.01 mg/kg

# GL's proficiency test (PT) programmes

## ★ PT programmes

- ★ Boric acid in food
- ★ Propionic acid in flour confectionery



**Thank You**