



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

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Review of Outsourcing Contracts in 2011-12



Outsourcing in 2011-12

- ★ 17 contracts issued by end of Oct 11
 - ★ total about 115,000 tests
 - ★ contract period: 3 months to 1 year
 - ★ exercise ends in March 2012
- ★ Additives
 - ★ general foodstuff, beverages, preserved fruits and vegetables
- ★ Toxic elements in general foodstuff
- ★ Pesticides in fruits and vegetables
- ★ Other Contaminants in foodstuff



Salient Points

- ★ Accredited in corresponding tests
 - ✿ maintaining accreditation status throughout contract period
- ★ Test sample collection
 - ✿ within specified time after notice
 - ✿ at Homantin
- ★ Report results within specified period
- ★ Retention of remaining test samples



Issued Contracts (Food Additives) (1)

★ Sulphur dioxide and other preservatives

- ★ Four contracts on general food and specific foods
- ★ SO₂, benzoic acid, sorbic acid, parabens with / without salicylic acid
- ★ about 3,100 samples
- ★ reporting limits: 8 mg/kg for SO₂, 30 mg/kg for parabens and 50 mg/kg for others



Issued Contracts (Food Additives) (2)

✦ Nitrate/Nitrite

- ✦ Short-term contract on meat and dairy products
- ✦ about 500 samples
- ✦ reporting limits: 5 mg/kg for nitrite (as NaNO_2) and 30 mg/kg for nitrate (as NaNO_3)

✦ Propionic acid

- ✦ Short term contract on flour confectionary
- ✦ about 250 samples
- ✦ reporting limit: 50 mg/kg



Issued Contracts (Pesticides) (1)

- ✦ Organochlorine pesticide residues in fruits and vegetables
 - ✦ One contract on 35 OC pesticides
 - ✦ about 660 samples
 - ✦ reporting limits: 0.01 mg/kg each
- ✦ Organophosphorus pesticide residues in fruits and vegetables
 - ✦ One contract on 42 OP pesticides
 - ✦ about 660 samples
 - ✦ reporting limits: 0.1 mg/kg each



Issued Contracts (Pesticides) (2)

★ Pyrethroid residues in fruits and vegetables

- ★ One contract on 8 pyrethroids
- ★ about 660 samples
- ★ reporting limits: 0.1 mg/kg each

★ N-methyl carbamate residues in fruits and vegetables

- ★ One contract on 16 carbamates
- ★ about 660 samples
- ★ reporting limits: 0.1 mg/kg each

Issued Contracts (Veterinary Drug Residues)

★ Chloramphenicol

- One contract for meat and aquatic products
- about 360 samples
- reporting limit: 0.1 mg/kg

★ Malachite Green

- One contract for fish and shrimp products
- Malachite Green and Leucomalachite Green
- about 320 samples
- reporting limit: Sum of MG and LMG: 2 mg/kg



Issued Contracts (Heavy Metals)

★ 7 Heavy metals / Toxic element

- Sb, As, Cd, Cr, Pb, Hg and Sn
- About 1,800 samples
- reporting limits: 0.02 mg/kg – 0.5 mg/kg

★ 4 Heavy metals / Toxic element

- As, Pb, Hg, and Sn
- About 1,350 samples
- reporting limits: 0.03 mg/kg – 0.5 mg/kg



Issued Contracts (Other Contaminants)

★ Sudan Dyes

- Contract on general food products
- Sudan I, II, III, IV, Sudan Orange G, Sudan Red 7B, Dimethyl Yellow
- about 900 samples
- reporting limits: 20 $\mu\text{g}/\text{kg}$ each

★ Melamine

- Contract on general food
- about 1,300 samples
- reporting limit: 1 mg/kg



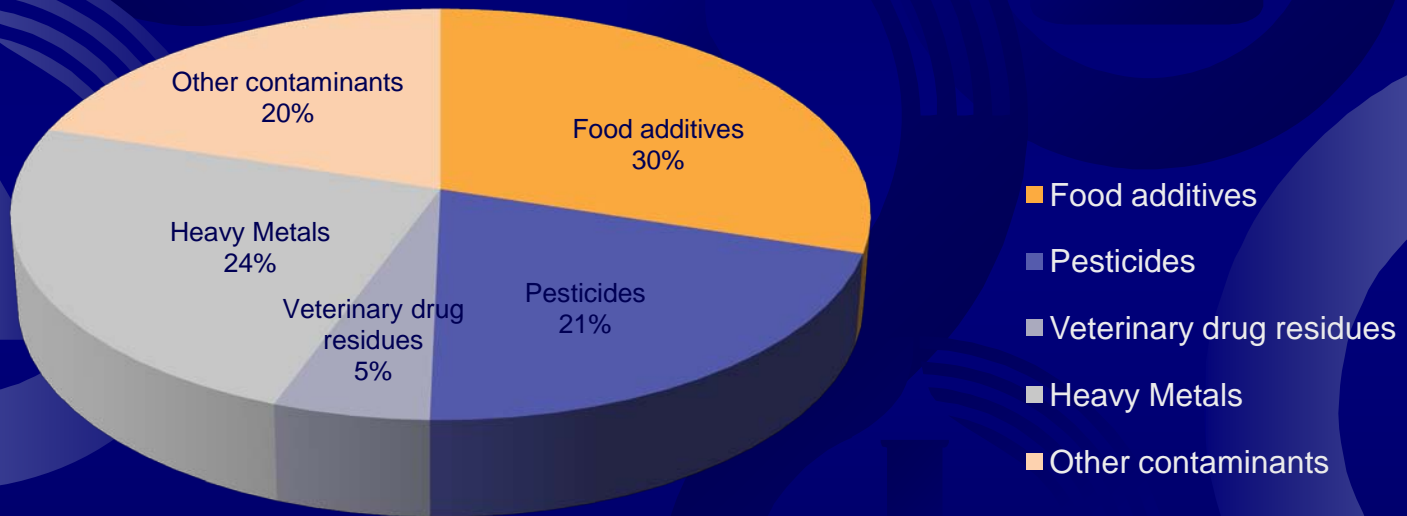
Issued Contracts (Other Contaminants)

✦ Boric acid

- ✦ Short term contract on general food
- ✦ about 400 samples
- ✦ reporting limit: 100 mg/kg



No. of Samples





Invitation to Quotation

★ Two-envelope system

- ★ Introduced for contracts commencing in Oct 2011
- ★ Technical proposal
- ★ Price proposal
- ★ Evaluation process:





Way Forward:
Outsourcing Contracts
in 2012-13



Outsourcing Contracts in 2012-13

- ★ Over 118,000 tests
- ★ Some contracts start in April 2012
 - ★ invitation for quotation starts in February 2012
- ★ Contract period varies
 - ★ one year
 - ★ half year
 - ★ short-term contracts about 3 - 4 months
- ★ Two-envelope system for invitation to quotation



Outsourcing: Test Areas

- ✦ Food additives
- ✦ Pesticide residues
- ✦ Veterinary drug residues
- ✦ Toxins
- ✦ Other contaminants
- ✦ [Nutrition labelling]



General Requirements

- ★ Accredited in the corresponding tests
 - maintaining the accreditation status throughout the 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)

- ★ SO_2 and other preservatives in general foodstuff
 - ★ SO_2 ; benzoic, sorbic and salicylic acids; and parabens
 - ★ reporting limit: 8 mg/kg for SO_2 , 30 mg/kg for each of the parabens and 50 mg/kg for each of the others
- ★ Short-term contracts on preservatives
 - ★ in specific foods such as beverages, preserved fruits and vegetables
 - ★ SO_2 ; benzoic and sorbic acids; parabens



Contracts on Additives (2)

- ✦ Propionic acid in flour confectionary
 - ✦ reporting limit: 50 mg/kg
- ✦ Nitrate / nitrite in meat and dairy products
 - ✦ reporting limit: 30 mg/kg as NaNO_3 and 5 mg/kg as NaNO_2



Contracts on Pesticide Residues (1)

- ✦ **Organochlorine pesticides (×35)**
 - fruits and vegetables / general foodstuff
 - reporting limit: 0.01 mg/kg each
- ✦ **Organophosphorus pesticides (×42)**
 - fruits and vegetables / general foodstuff
 - reporting limit: 0.1 mg/kg each
- ✦ **Pyrethroids (×8)**
 - fruits and vegetables / general foodstuff
 - reporting limit: 0.1 mg/kg each
- ✦ **N-Methyl carbamates (×16)**
 - fruits and vegetables / general foodstuff
 - reporting limit: 0.1 mg/kg each



Contracts on Pesticide Residues (2)

- ✦ Test parameters: refer to

- ✦ <http://www.govtlab.gov.hk/english/development.htm>

- ✦ Potential new test parameters: refer to

- ✦ http://www.cfs.gov.hk/english/whatsnew/whatsnew_fstr/whatsnew_fstr_21_Pesticide.html



Contracts on Veterinary Drug Residues

- ✦ Chloramphenicol in meat and aquatic products
 - ✦ reporting limit: 0.3 $\mu\text{g}/\text{kg}$
- ✦ Malachite green in aquatic products
 - ✦ reporting limit: 2 $\mu\text{g}/\text{kg}$ for sum of malachite green (MG) and leucomalachite green (LMG)



Contracts on Toxins

✦ Aflatoxins B₁, B₂, G₁, G₂ in nuts, cereals and products

- ✦ reporting limit: 2 ppb or better for total aflatoxins (B₁, B₂, G₁, G₂)
- ✦ with confirmation

✦ Aflatoxin M₁ in milk

- ✦ reporting limit: 0.01 ppb
- ✦ with confirmation



Contracts on Contaminants (1)

★ Heavy metals / Toxic element in general foodstuff

Analyte	Reporting Limits
Antimony (Sb)	0.2 ppm
Arsenic (As)	0.1 ppm as As_2O_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 Contaminants (2)

- For certain ad-hoc outsourcing projects on metallic contaminants / toxic element in certain foods, new lower reporting limit requirements will be in place

Analyte	Reporting Limits
Mineral water	
Antimony (Sb)	0.005 ppm
Arsenic (As)	0.01 ppm
Cadmium (Cd)	0.003 ppm
Chromium (Cr)	0.05 ppm
Lead (Pb)	0.01 ppm
Mercury (Hg)	0.001 ppm
Fruit juices (including nectars, ready to drink)	
Lead (Pb)	0.05 ppm
Milk, secondary milk products and infant formula	
Lead (Pb)	0.02 ppm



Contracts on Contaminants (3)

- ★ Sudan dyes in general foodstuff
 - ★ 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 foodstuff
 - ★ reporting limit: 1 mg/kg
- ★ Boric acid in general foodstuff
 - ★ reporting limit: 50 mg/kg



[Nutrition Labelling]

- ✦ Prepackaged general foodstuff
- ✦ 7+1 nutrients
 - ✦ energy, protein, total fat, saturated fat, trans fat, carbohydrates, sugars, sodium
- ✦ Guidance notes issued by CFS
 - ✦ *Technical Guidance Notes on Nutrition Labelling and Nutrition Claims*



Chemical Metrology at GL (1)

- ✦ Designated Institute of BIPM (International Bureau of Weights & Measures) in 2005
- ✦ Proficiency test (PT) programme
 - Accredited PT scheme provider in 2006
 - Upcoming programmes
 - Essential and toxic elements in seafood
 - Pesticides in tea



Chemical Metrology at GL (2)

☀ Certified reference materials

☀ Upcoming

- Trace elements in herb
- Pesticides in tea
- Melamine in milk

☀ Preparation in progress

- Melamine (neat)
- OC pesticides in green tea



Thank You