Risk Assessment for Food Safety in Hong Kong

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Risk Analysis Framework

Four components:
- Hazard identification
- Hazard characterisation
- Exposure assessment
- Risk characterisation

Risk Analysis

Risk Assessment
* Science based

Risk Management
* Policy based

Risk Communication
* Interactive exchange of information and opinions concerning risks
Organisation of the Centre for Food Safety (CFS)

Controller, CFS

Risk Assessment & Communication Division
- Consultant
  - Risk Assessment Section
  - Risk Communication Section
  - Food Research Laboratory Section

Food Surveillance & Control Division
- Assistant Director
  - Veterinary Public Health Section
  - Slaughterhouse (Veterinary) Section
  - Food Import & Export Section
  - Food Surveillance & Complaint Section
  - Food Chemistry Section
  - Risk Management Section

Centre Administration Division
- Chief Executive Officer
Risk Assessment Section of CFS (1)

- Consultant
  - Food Safety Officer
    - Standard Setting
    - Veterinary Drug Residues Standard Setting
  - Food Safety Officer
    - Nutrition Information Inquiry System
    - Food Consumption Survey
    - Risk Assessment Studies
    - Packaging
    - Total Diet Study
  - Senior Medical Officer
    - Chemicals (Food Additives & Contaminants)
      - Microbiology
      - Natural Toxins
      - Genetically Modified Food
      - Organic Food
      - Environmental
      - Packaging Materials
      - Consumer Council Liaison
  - Senior Medical Officer
    - Nutrition Labeling Standard Setting & Publicity
      - Public Health Doctors,
      - Health Inspectors,
      - Specialists in Nutrition, Toxicology, Biotechnology, Food Science, Microbiology etc.
Risk Assessment Section of CFS (2)

- **Major tasks**
  - Food incident surveillance
  - Support risk management
  - Risk assessment studies
    (Including Total Diet Study & Food Consumption Survey)
  - Formulate food safety standards
Food Incident Surveillance
Food Incident Surveillance (1)

- Over 95% of food consumed is imported
- Large volume and variety of food from around the world

Figures for 2006, in tonnes
Food Incident Surveillance (2)

- **Purpose**
  - Identify food incidents occurred locally or overseas
  - Assess local impact, if any
  - Provide timely response to minimise adverse impact on public health

- Benzo[a]pyrene in Cooking Oil
- Horse Meat Found in Beef Products in Europe
Food Incident Surveillance (3)

- Daily operation
  - Screen for food incidents from a defined list of websites
  - Conduct preliminary risk assessment
  - Disseminate food incident surveillance reports

Websites of food safety authorities and media reports
Support Risk Management
Support Risk Management (1)

Examples:

- **Recommend action levels**
  - Base on tolerable daily intake dose established internationally or by national food safety authorities
  - Discuss with and seek views from the Expert Committee on Food Safety

- **Prepare technical brief for different hazards**
  - Toxicological information and regulatory control

- **Conduct risk assessment for unsatisfactory samples identified during food surveillance**
  - Use an internal system namely “EASY” (Exposure Assessment System) to estimate the exposure
Support Risk Management (2)

- Examples of the role of RA in past food safety incidents:
  - Japan nuclear incident
    - Recommend more stringent radiological standard for testing the safety of imported bottled/packaged water, after well over one year after the incident
  - Suspected Substandard Cooking Oil
    - Determine whether there is any potential health risk for samples found with Benzo[a]pyrene (BaP)
    - Provide scientific support (international and national standards, RA using MOE approach) for the establishment of provisional action level
Risk Assessment Studies

(Including Total Diet Study & Food Consumption Survey)
Risk Assessment Studies (1)

- Criteria of selecting topics for RA projects
  - Topics of public health significance or public concern
  - To address risk management problems and provide scientific support to risk managers to identify risk management options
  - Topics of public education significance
  - To provide scientific support to a legislative review

- CFS conducts several risk assessment studies and two joint Consumer Council studies each year
Risk Assessment Studies (2)

- Recent Studies
  - Fatty Acid Esters of 3-monochloropropane-1,2-diol (3-MCPD) in Food
  - Safety Issues of Baby Bottles and Children’s Tableware (Literature review)
  - Study on Genetically Modified Ingredients in Corn and Corn-Based Products in Hong Kong (Joint CC study)
  - Trans Fatty Acids in Local Foods (2012) (Joint CC study)
Food Consumption Survey and Total Diet Study (1)

- **Food Consumption Survey**
  - Collect population-base food consumption information
  - Provide data for risk assessment and dietary assessment
  - Released in 2010

- **The first Hong Kong Total Diet Study (1st HKTDS)**
  - Estimate dietary exposures of the Hong Kong population to a range of substances and thus assess any associated health risks
  - Include >130 substances (contaminants and nutrients, etc.)
Food Consumption Survey and Total Diet Study (2)

- Reports of the 1st HKTDS will be released in phases

- Released reports
  - Metallic Contaminants
  - Pesticide Residues (85 commonly encountered pesticides or their metabolites under four pesticide groups)
  - Polybrominated Diphenyl Ethers (PBDEs)
  - Inorganic Arsenic
  - Dioxins and Dioxin-like Polychlorinated Biphenyls (PCBs)
Formulate Food Safety Standards
Local Food Standard Setting (1)

- **Regular review on food standards**
  - To protect public health and keep the local food standards in line with International development (e.g. Codex) and advancement of food science and technology

- **Factors to be considered in review**
  1. Public health concern;
  2. Local food standards;
  3. International standards;
  4. Stakeholder concern
Local Food Standard Setting (2)

- Scientifically assess the dietary exposure to the hazard of concern and possible adverse health effects on the local community, taking local food consumption into consideration.

- Local standards set without compromising public health.
Local Food Standard Setting (3)

- Regulation/ Guidelines under review
  - Pre-market safety assessment scheme of GM food
  - Microbiological Guidelines for Ready-to-eat Food
  - Veterinary Drug Residues in food
Thank You