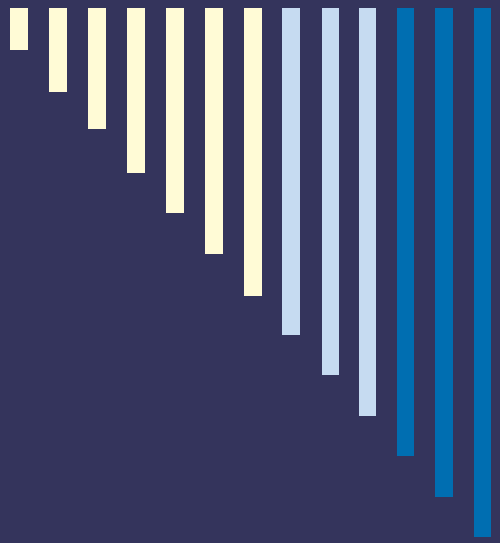

FOOD SAFETY PROBLEMS FROM INDUSTRIAL POINT OF VIEW
Philippine Perspective

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Greetings to all.

- Thank you for this opportunity to share our experiences on Food Safety problems with you.
- Thank you also to:

  ASEM
  Netherlands Ministry of Agriculture, Nature and Food Quality , RIKILT

  Our host country, Korea

FOOD SAFETY

is the assurance that food will not cause harm to the consumer when it is prepared or eaten according to its intended use.

Codex Alimentarius

Safe Food

- Must be free from the following hazards to health:
  - Biological Hazards
    - Pathogenic bacteria, virus, parasites, worms
  - Chemical Hazards
    - Natural toxins, agricultural chemicals, environmental contaminants, food additives
  - Physical Hazards
    - Stones, metal fragments, bone shards

Complex System, Many Food Interests

Farm

Transport

Mill / Slaughter / Food Processor

Transport/Imports

Restaurant/Retail

Consumer

Food can be contaminated at any point, from farm to fork.

Photo: www.bcsalmon.ca/bcsmc/ffact2.htm

The Philippine Food Industry

- About 5,000 registered companies, 90% SMEs.
- Unregistered companies - more than registered have significant impact on the safety of food in the country.

Government Agencies Involved in Food Safety

- Department of Health
  - Bureau of Food and Drugs
  - Health Departments of Local Government Units

- Department of Agriculture
  - Bureau of Fisheries and Aquatic Resources
  - National Meat Inspection Service (fresh and processed meat)
  - Philippine Coconut Administration
  - National Food Authority (rice, corn)
  - Food Development Center
  - Bureau of Plant Industry (crops, pesticides)
  - Bureau of Animal Industry (animal health)
  - Fertilizer and Pesticide Authority

Product Quality Systems Study

- A section of the 1999-2000 7-part study on Global Competitiveness of Philippine Food products.
- Looked into conformance of Philippine food products to global standards of safety and quality.

Result of study indicated

- High incidence of product detention is a major cause of low competitiveness of Philippine food products in the global market.

Causes of Product Detention

- Presence of filth
- Improper process of low-acid foods
- Labeling violations
- Presence of microbiological hazards *Salmonella, Staphylococcus*
- Presence of chemical hazards
- Use of prohibited additives
- Non-declaration of additive used

Some sanitation problems observed

- Poor conformance to Good Manufacturing Practices (GMP:
  - Poor layout and inadequate facilities (screens, floors, drains, ceilings, toilets, hand washing facilities, employee lockers and lounge)
  - Very poor design of food processing equipment such as retorts, blanchers and pasteurizers, grinders, etc.

Poor Personal hygiene practices:

- Improper/dirty attire
- Use of jewelry while handling food
- Hand washing protocol not followed (no soap, no sanitizer)
- Use of bare hands when handling food
- Smoking and eating in work area
- Improper use of hair cover
- Improper covering of mouth

Poor Post harvest Practices

- Use of rattan baskets and used sacks as fish containers
- Inadequate icing of fish
- Rough handling
- Placing fruits and vegetables directly on ground or on dirty mats

Poor Processing Practices

- Use of banned additives such as boric acid for noodles
- Absence of thermometers for temperature checks
- Inappropriate packaging materials
- Lack of food safety signs

- Inadequate thermal process for low acid foods/ Filipino ethnic food preparations.

GMP-HACCP Implementers

- Companies who have export markets
- Suppliers and sub contractors to multinational companies (Nestle, McDonalds, Kraft , chain hotels and restaurants).
- Other companies who use HACCP as a marketing tool (selling safety).

Food Safety Problem Categories

- Raw materials
- Processing methods
- Personnel
- Equipment
- Plant Layout
- Documentation
- Standards, regulation and labeling
- Inspection and testing
- Traceability and recall procedures

Raw Material Issues

- **Biological hazards** in raw materials
  - Pathogens in in raw materials due to contamination from source (soil, water)
  - Contamination during handling and transport
  - Contamination from feeds

- **Chemical hazards** in raw materials
  - Natural toxins (aflatoxin,histamine cyanogenic glycosides, shellfish toxins)
  - Antibiotic, hormones, pesticide residues
  - Reuse of chemical containers as food containers
  - Improper handling of chemicals

- **Physical Hazards** in raw materials
  - Metal fragments, bone shards, twigs, stones.

Control hazards in raw material

- Implement Supplier Quality Assurance program
  - Product specifications
  - Audit of food safety management system
  - Certificate of analysis/guarantee

- Current efforts of government to promote Good Agriculture Practice (GAP)

Food Safety Issues Associated with Processing

- Contamination during processing
- Delays in processing
- Insufficient process
- Post process contamination
- Use of additives

Contamination during processing

- **Biological contamination** may come from
  - Unclean equipment,
  - Personnel,
  - Pests,
  - Environment
  - Cross contamination
  - Temperature abuse

- **Chemical contamination** from
  - Lubricants,
  - Leached out food contact surfaces
  - Packaging materials
  - Accidental spillage of chemicals
  - Non-food ingredients mistaken for ingredients
  - Cleaning and sanitizer residues

- **Physical contaminants**
  - Personal belonging (such as buttons, ball pens)
  - Packaging materials of ingredients and raw materials (metal locks, plastic pieces)
  - Contaminant from ingredients and raw materials

- **Insufficient process**
  - Operating procedures not standardized
  - Equipment breakdown
  - Incompetent person in charge
  - No objective measuring device

- **Processing delays**
  - Faulty production scheduling
  - Equipment breakdown

- **Post-process contamination**
  - Rough handling
  - Conditions of storage and transport
  - Temperature abuse

Personnel Issues

- Inadequate food safety knowledge of person in charge
- Unskilled and untrained food handlers
- Hygiene monitoring
- Training needs

Unskilled food handlers can be trained through

- Apprenticeship tutoring in the company prior to employment

Hygiene monitoring

- Use simple checklist
- Video recording of habits
- Attire check
- Hand wash check
- Personal hygiene handbook with daily checklist

Employee training opportunities

- Formal in-house training on Food Safety
- Participation in public certificate training seminars on Food Safety
- 10-minute daily pre-operation meeting with supervisors
- Regular monthly / bi-monthly/weekly 30 minute to 1 hour food safety meetings
- Poster reminders
- Circulating food safety related news clippings

- Food safety articles in company newsletter and/or bulletin boards
- Random regular written examination
- Informal discussions
- Reviewing monitoring results with employees and discussing corrective actions needed
- Sharing audit results with employees to help them realize personal stake in the safety of the products they help produce.

Problems Related to Equipment and Instruments

- Poor design of fabricated equipment (none to poor sanitary features)
- Re-fabrication of surplus equipment
- Improper installation
- Poor preventive maintenance
- Cleaning and sanitation methods and sanitizers for equipment
- Not calibrated measuring instruments

Problems Regarding Layout

- Layout problems happen in the following situations:
  - Facilities that have expanded from “garage operation”.
  - Processing facilities renovated from residences, warehouses, other old buildings
  - Leased facilities
  - Sub-contracting
  - Accommodating waste water treatment plants in a small locations

- Layout problems of crisscrossing can be controlled by time scheduling of operations to avoid cross contamination

Documentation problems

- Process control procedures, SSOPs not written, or not systematically filed
- Not immediately recording results of monitoring
- Recording in “temporary” locations
- No suitable monitoring instruments or no instruments at all
- Difficult to fill data forms

- “Doctored” data. Recording only “expected” data.
- Incomplete records
- Not signed and dated records.
- Failure to immediately review primary data.

Some solutions to documentation problems

- Adequate training in documentation procedures
- Providing easy-to-use, easy-to-understand forms
- Providing necessary tools
- Making recording forms easily accessible, within location where data is generated

- Dealing with non-conforming data objectively and not finding fault with monitoring person
- Timely review of data gathered
- Training and monitoring recording activities until all personnel develop recording as a habit.

Problems related to Standards, Regulation and Labeling

- Insufficient understanding of product standards and regulation of specific customer/importing country
- Confusion with label requirements of different markets

Solutions

- Thorough study of regulations of intended market as part of market development
- Regular updates through websites or through trade consular offices
- Join discussions with other companies

Problems related to Inspection, Audits and Laboratory Analysis

- **Inspection and audit**
  - Perception that regulatory authorities are looking for faults instead of assisting industry to comply with regulations
  - No two inspectors have the same interpretation
- Laboratory analysis
  - High cost
  - Low capability of local laboratories

Traceability Issues

- Faulty lot coding systems
- Inadequate documentation
- Illegible markings
- No written protocol for recall

Conclusions

- Food safety problems can occur at any stage of the food chain and at any step during the processing of a product
- Individual companies can develop or institute capabilities to control food safety problems

- Implementing HACCP and incorporating HACCP and the HACCP pre-requisites into the company's Operations Manual are means of insuring safety of finished products
- Companies should work towards making documentation a part of the company culture

Recommendations

- **Role of industry associations**
  - Further develop partnership with government regulatory agencies on matters regarding food safety.
  - Encouraging members to implement HACCP
  - Build industry- based product testing capability
  - Assist in dissemination of food safety issues

- **Role of academic and research institutions**
  - Expand extension services to include food safety education to consumers, grade school and high school
  - Use actual food industry safety problems for class exercises in Food Science and Technology courses

- **Role of government and regulatory agencies**
  - Improve inspection and audit capability
  - Work towards a unified food safety authority
  - Improve testing capability

Possible Areas for Assistance and Cooperation

- Development of standardized inspection and audit tools and improve capability of inspectors
- Development of standardized training materials for training industry personnel
- Development of capability in fabrication of sanitary food processing and safety monitoring equipment

Maraming Salamat !

Thank you

Magandang Umaga sa inyong lahat.

Good Day to all.