



Current situation of Food Safety in Vietnam

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Hanoi University of Science and Technology (HUST)



Established in 1956, leading university in the field of science and technology

20 schools, 14 research institutes

2.200 employees

35.000 undergraduates

4.000 postgraduates.



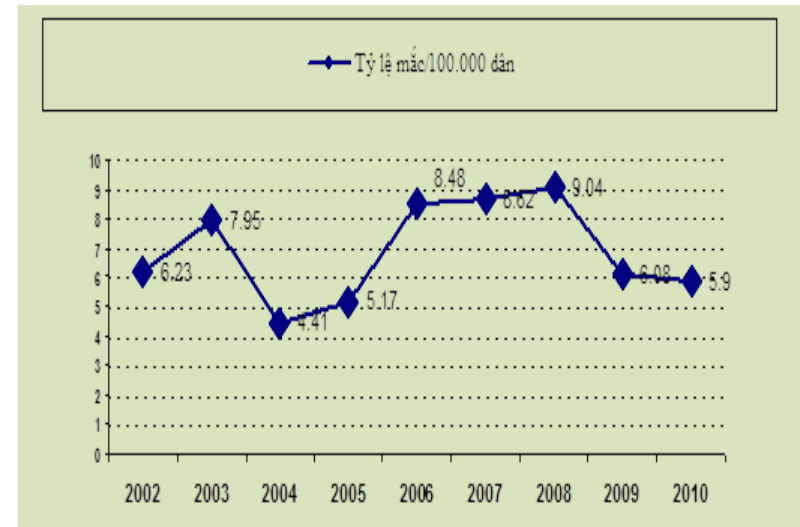
FOOD POISONING OUTBREAKS IN VIETNAM

2000 - 2010 *

Since 1990, Food safety has becoming among the most concern and priority issues in Vietnam

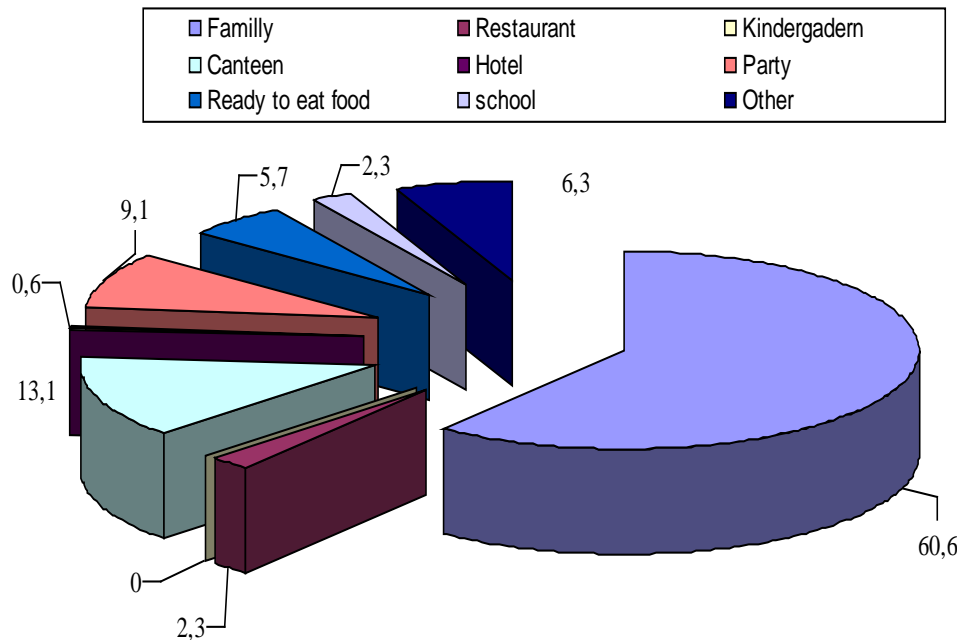
Number of food poisoning cases 2000-2010

N	Year	<i>Number of outbreaks (cases)*</i>	<i>Infected</i>	<i>Deaths</i>
1	2000	213	4.233	59
2	2001	245	3.901	63
3	2002	218	4.984	71
4	2003	238	6.428	37
5	2004	145	3.584	41
6	2005	144	4.304	53
7	2006	165	7.135	57
8	2007	247	7.329	55
9	2008	205	7.828	61
10	2009	152	5.212	35
11	2010	175	5.664	51
Total		2.147	60.602	583

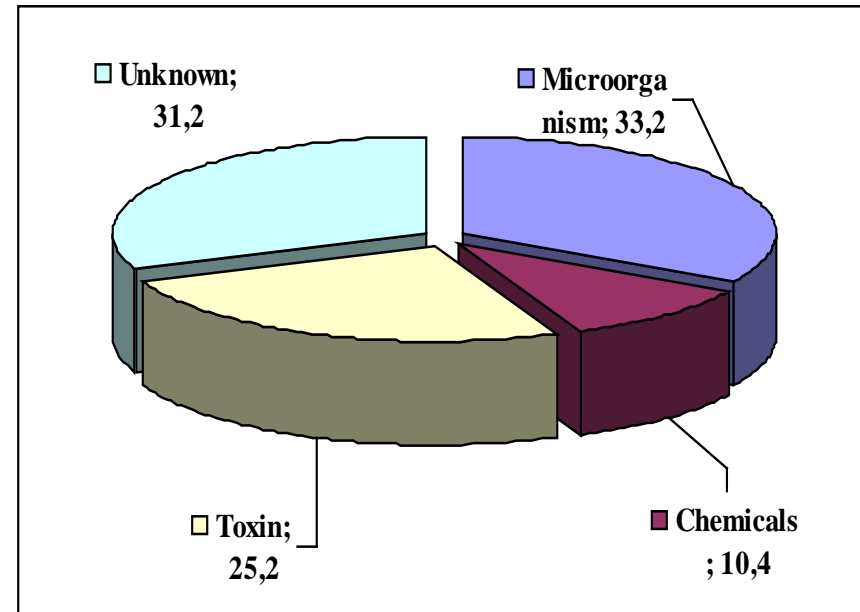


Average rate of food poisoning / 100,000 habitats

- **Number of cases not decreased for 10 years treated as priority issue**
- **Number of the cases under officially reported lower from real situation ,**



Food poisoning outbreak reported from 2002-2010

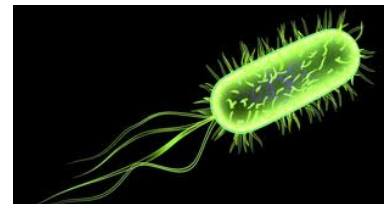


Contaminant of poisoning outbreaks from 2002 -2010

- Official outbreak reported under-estimated
 - Data on contaminant nature not available
- weaknesses in the food poisoning surveillance system**
- lack of resources for food safety management**

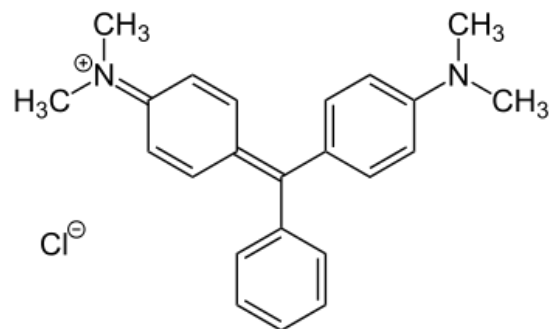
Emerging Food Contaminants

- Unauthorized Additives
 - Non-food color
 - Restructured food
- Preservatives
 - Chemicals (Urea, sorbat...)
 - Pesticide/fungicide
 - Antibiotics
- Environment contaminants
 - Heavy metal
 - Pesticide residue
 - Pathogens
- Technological toxins
 - 3-MCPD
 - Acrylamide, etc



Non-food color and preservatives abuse

10/2011: Malachite green detected in young rice snack («Cốm»): 1.5-5.9 mg/kg cốm (>>2 ug/kg)



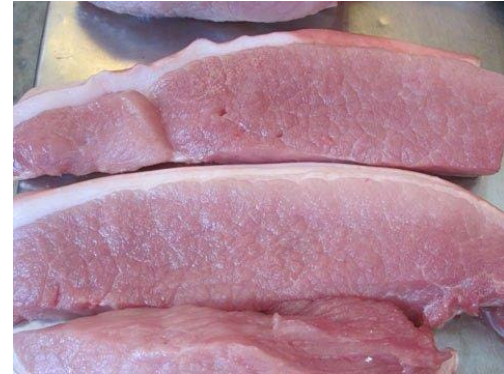
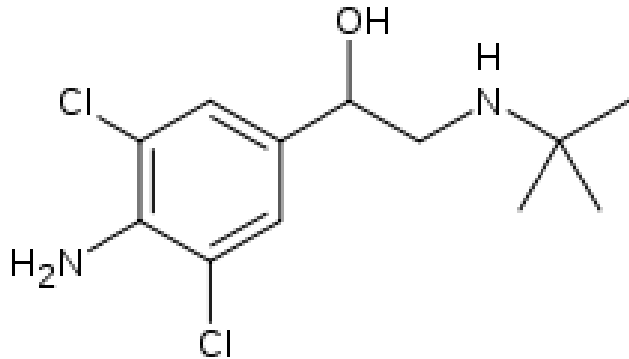
5/2012: imported fruits wrapped by pesticide-paper

- Vietnam is one of countries imports fruits from China
- China had recalled 2.7 millions wrapping bags coated with thiram and melarsoprol pesticides used in fruit plantation



Safety in Meat industry

- **Clenbuterol/Salbuterol in pork feed**



Clenbuterol supplements is used to increase the muscles while ensuring that body fat burn out, residu in the porc meat

- On-site detection
- Feed control and management

- *Salmonella*: pork: 39.6% (fermented meat)
 - Chicken 42.9-49%
 - Beef: 62%
- *Campylobacter jejuni*: 10-37% (Chicken)
- *L. monocytogenes*: 14% (sausage)
- *E. coli*
- *S. aureus*
- *B. cereus*
- *C. perfringens*



- Hygien issue
- Starter culture
- On-site, rapid assay for screening/self control of microbial contaminant: timing and sensitivity

■ *Antibiotic resistant food born pathogens***

	tetra cycli ne	sulph onami des	strept omyci n	ampic illin	chlor amph enicol	trimet hopri m	nalidi xic acid	amoxi cillin	genta micin	fluoro quino lones
<i>Salmo nella</i>	58.5	58.1	47.3	39.8	37.3	34.0	27.8	-		
<i>E. coli</i>	77.8	60.6	39.4	50.5	43.4	51.5	34.3	50.5	24.2	16- 21.2

** , Thi et al., 2008

- **Control antibiotic abuse in animal feed**
- **Feed ingredients development**

Aquaculture production

- Vietnam is a large exporter of Aquaculture products to US, EU (37.9 thousands tonnes, 10.3 % increased) and Japan.
- Main product:
 - Shrimps (*Penaeus monodon*)
 - Catfish (*Pangasianodon hypophthalmus* and *Pangasius bocourti*)



Safety issue in Aquaculture in VN

- Contaminated and diseases
- Use of antibiotics associated with the increase of bacterial resistance in the exposed microbial environment (water, sediment, fish bacteria)
- Environment pollution in aquaculture affected seafood safety
- EU set zero tolerance in aquacultural products for imported seafoods; barrier to overcome:
 - Good practice (GAP)
 - Aquaculture «vaccination» or authorized antibiotics
 - Analysis competence and harmonization



Research experiences

Technological improvement for Food Quality

Starter culture for traditionally fermented foods

LAB Probiotics for quality improvement of fermented meat and vegetable foods

Antagonist fungi to reduce aflatoxin contamination in rice

Probiotics for aquaculture feeds

Rapid analysis

Lateral flow immunological test for rapid detection of SEA
(RT) PCR (RT) /LAMP detection of *L. monocytogenes*, HAV,

LAMP method for distinguishing between *Pangasius bocourti* and *Pangasius hypophthalmus*

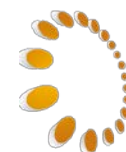
Networking and Capacity building



Monitoring and Quality Assurance
in the total food supply chain



Chất lượng hàng đầu Pháp quốc



FOODSEG

Safe Food for Europe



Cooperation needs

to respond to the needs:

- Analysis harmonization and HRD
- Proper preservatives, and replication in VN
- “Vaccination” for husbandry and aquaculture
- Safer, Better and Healthy feeds for animals
- Rapid and on-site detection (sensitivity improvement)
- Warning system for pathogens/environment contamination

**Thank you for your listening
and cooperation**

