

Meat contamination by *Salmonella*, *Campylobacter*, *Yersinia enterocolitica* and EHEC O157 in Belgium

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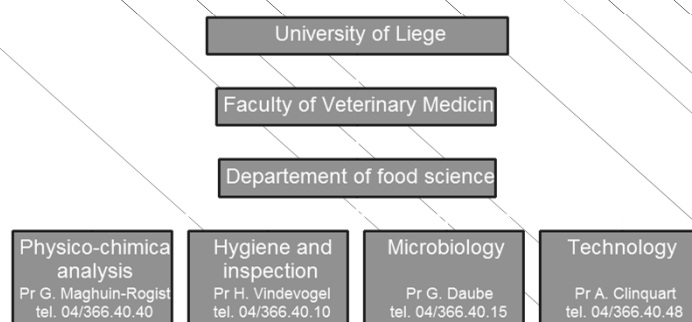
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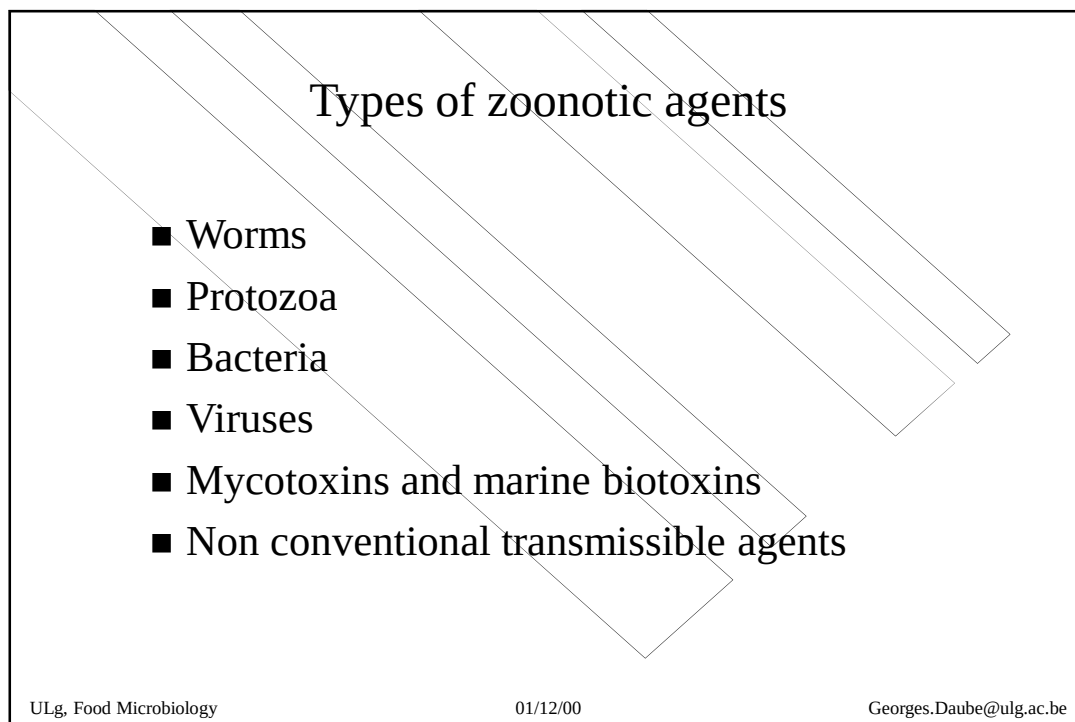
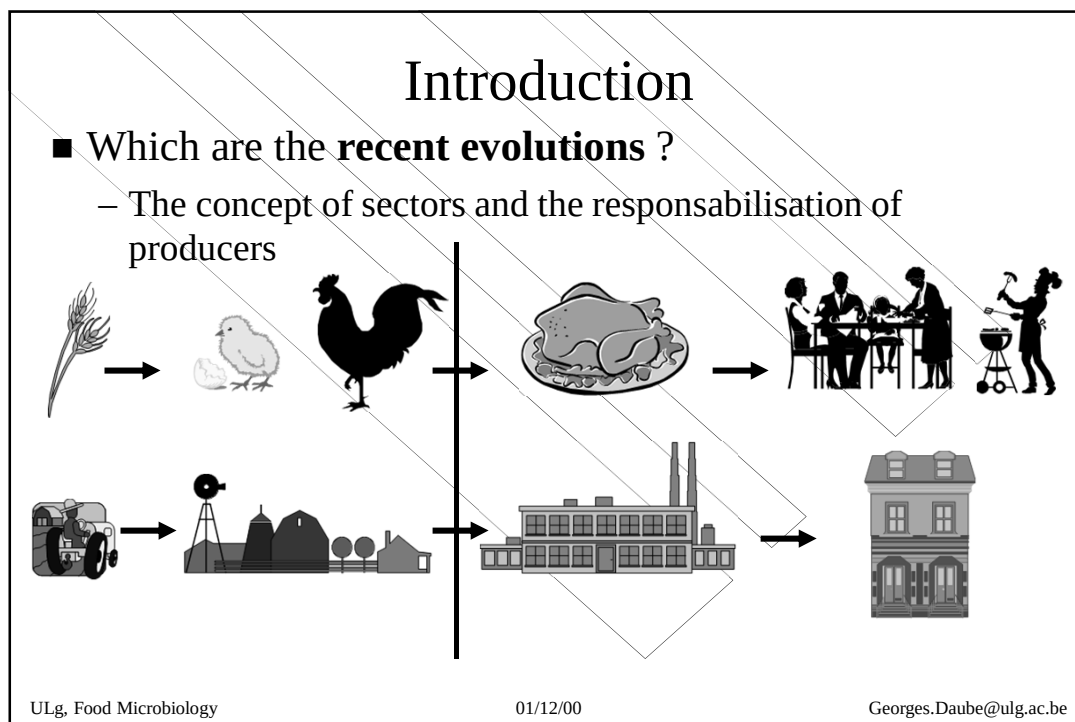
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Plan

- Introduction
- Surveillance plans of the Institute of veterinary expertise (IEV)
- Discussion
- Conclusions

Introduction

- What is a **zoonosis** ?
 - Any disease and/or infection which is likely to be naturally transmitted from animals to man
- Which are the **recent evolutions** ?
 - 10 years ago, zoonosis often = animal disease
 - » tuberculosis, anthrax, brucellosis
 - Now, zoonosis often $\neq$ animal disease
 - » salmonellosis, yersiniosis, haemolytic uremic syndrome



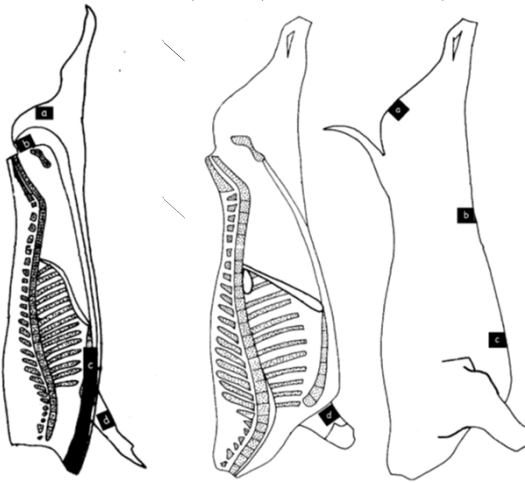
Regulations

- Zoonosis directive 92 / 117 /CEE
- Directives about food hygiene
 - Vertical directives
 - Horizontal directive 93/43/CEE

Surveillance plans of IEV

- Any fresh meat from the slaughterhouse to the distribution
- Random sampling plans representative of the production from the slaughterhouse to the distribution
- Micro-organisms : *Salmonella*, verocytotoxigenic *E. coli*, *Yersinia enterocolitica*, *Campylobacter*, *Listeria monocytogenes*, indicators of faecal contamination
- Since 1996, > 25.000 analysis with standardised protocols for sampling and analysis
- Strain typing, MIC and result working

Surveillance plans of IEV



Pork

Beef

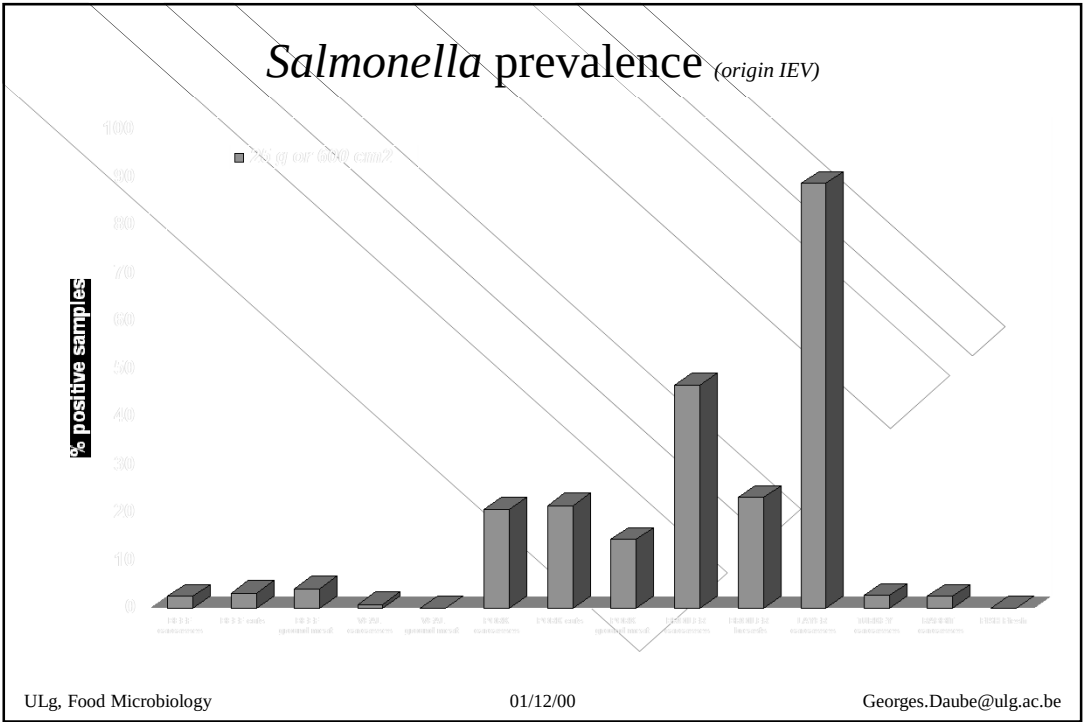
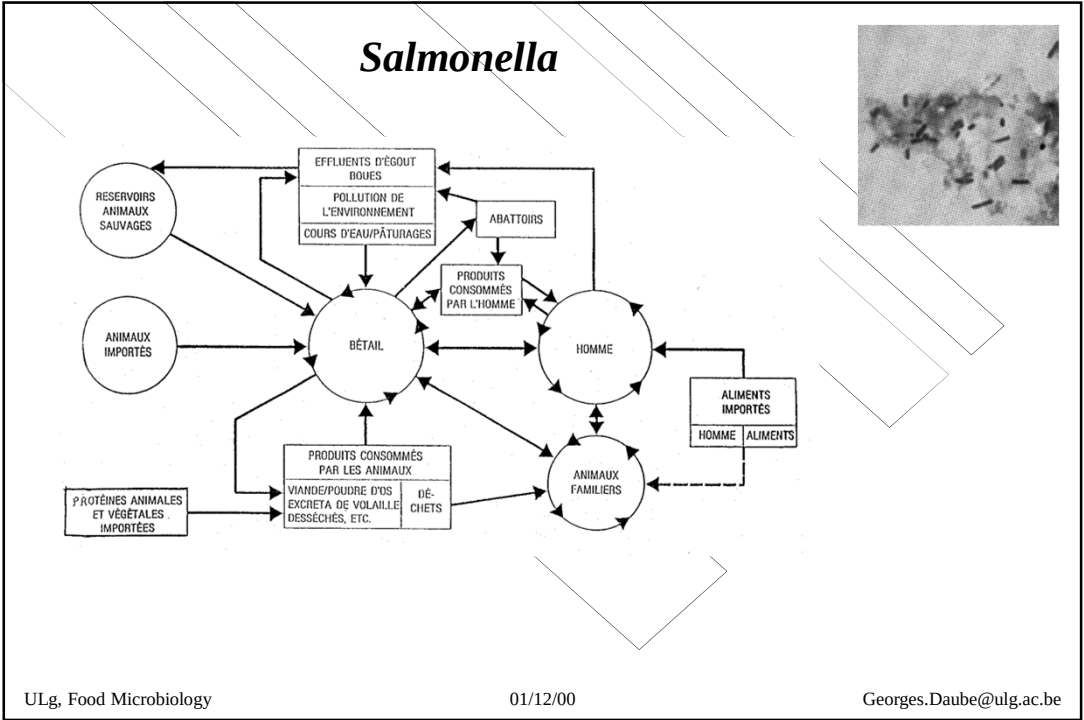
- Pork** (carcasses, livers, cuts, ground meat)
- Beef** (carcasses, livers, cuts, ground meat)
- Veal** (carcasses, livers, ground meat)
- Broiler** (carcasses, livers, cuts)
- Layer** (carcasses)
- Turkey** (carcasses)
- Rabbit** (carcasses)
- Fresh water fish**

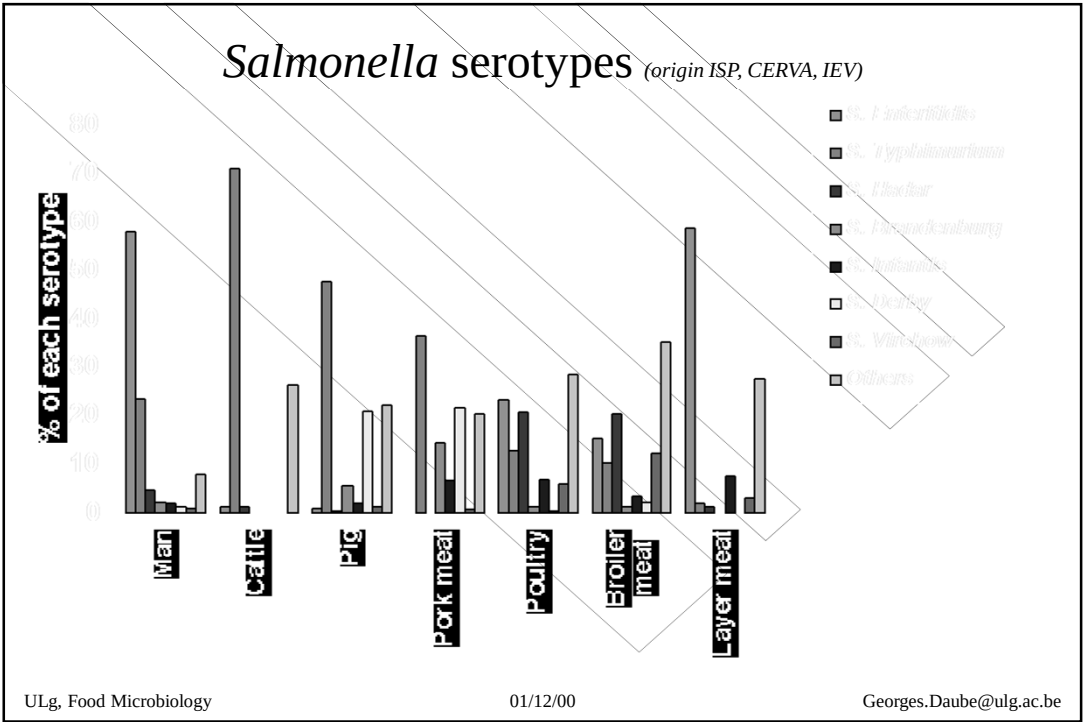
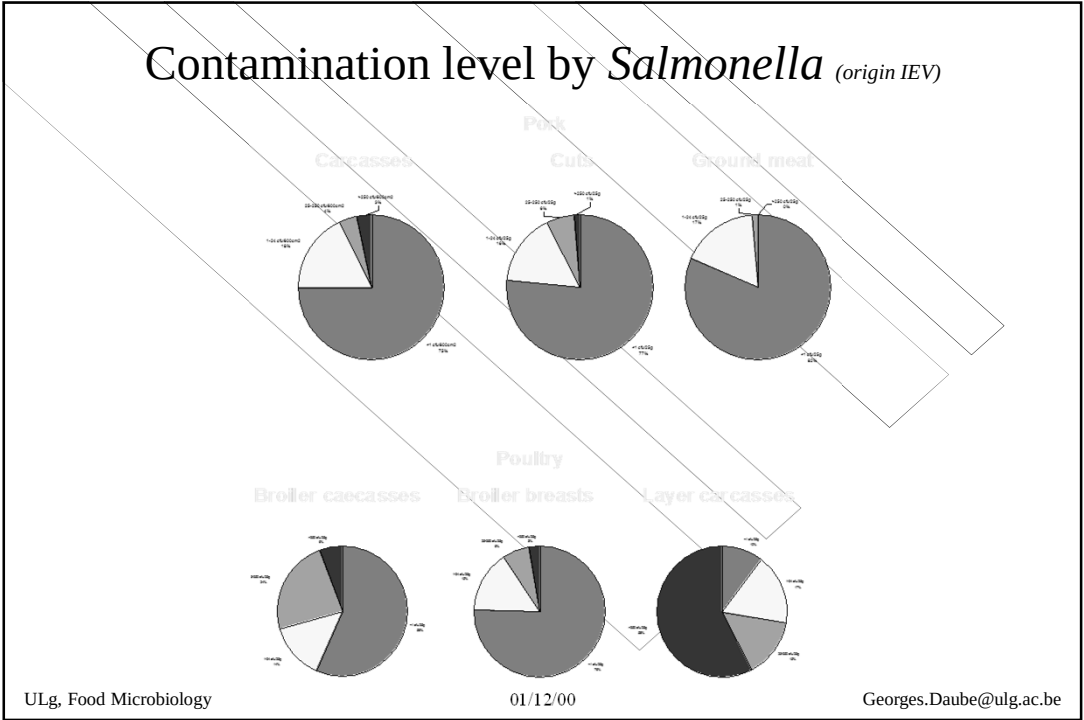
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Some results

- *Salmonella*
- *Campylobacter*
- *Yersinia enterocolitica*
- *Enterohaemorrhagic E. coli* O157

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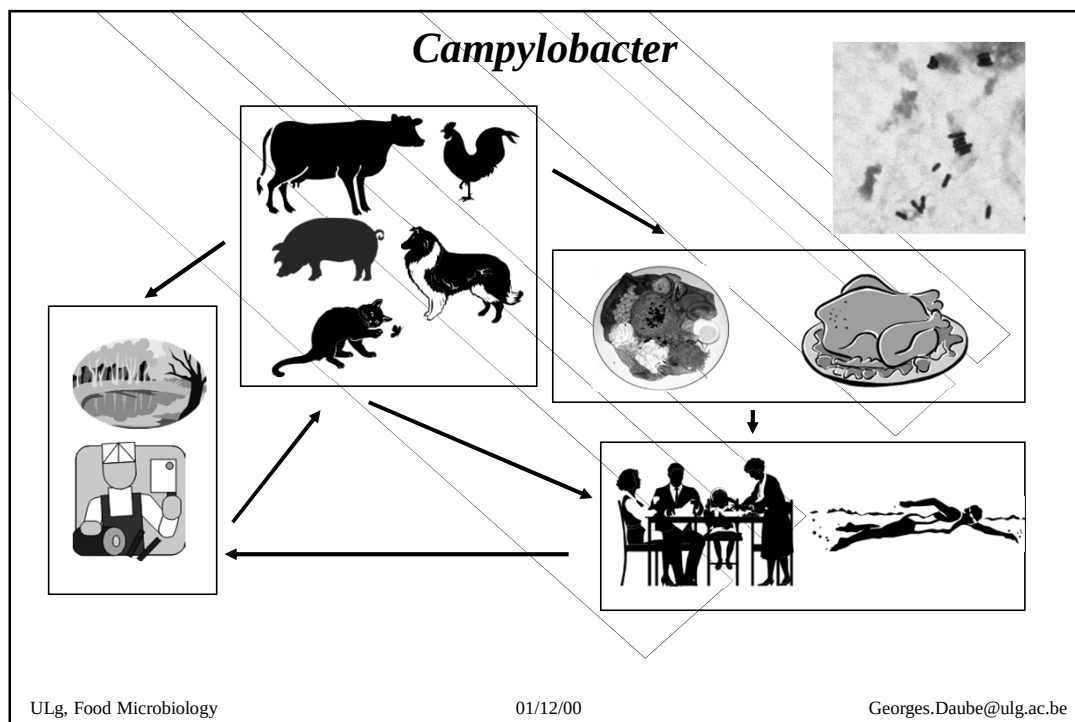


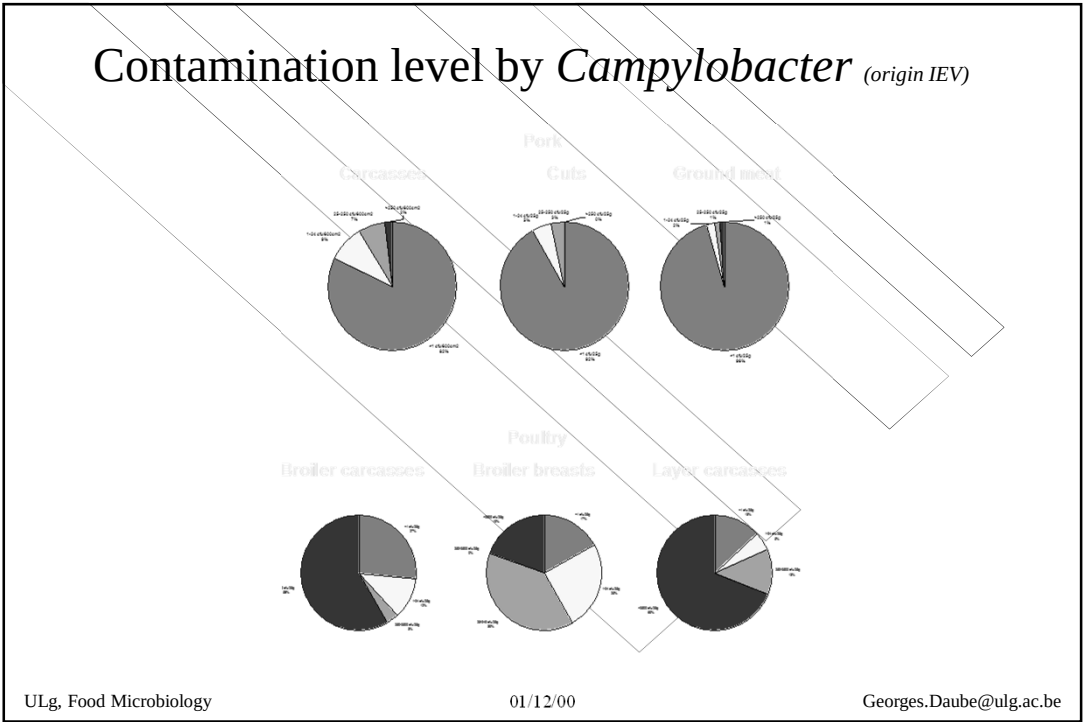
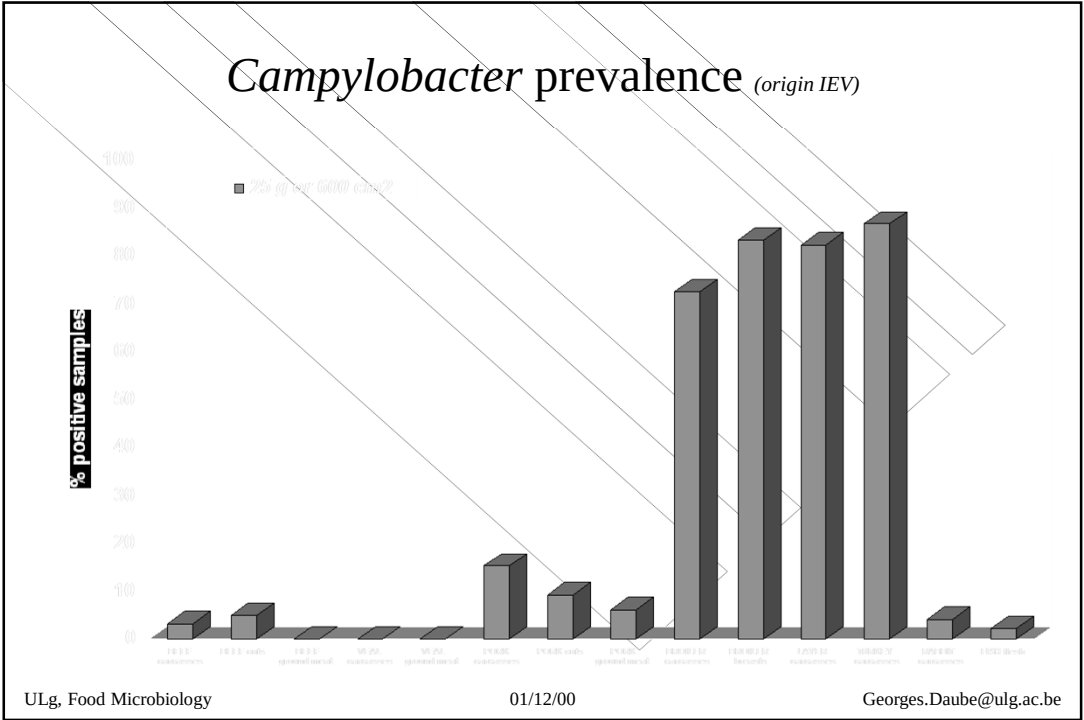
Salmonella

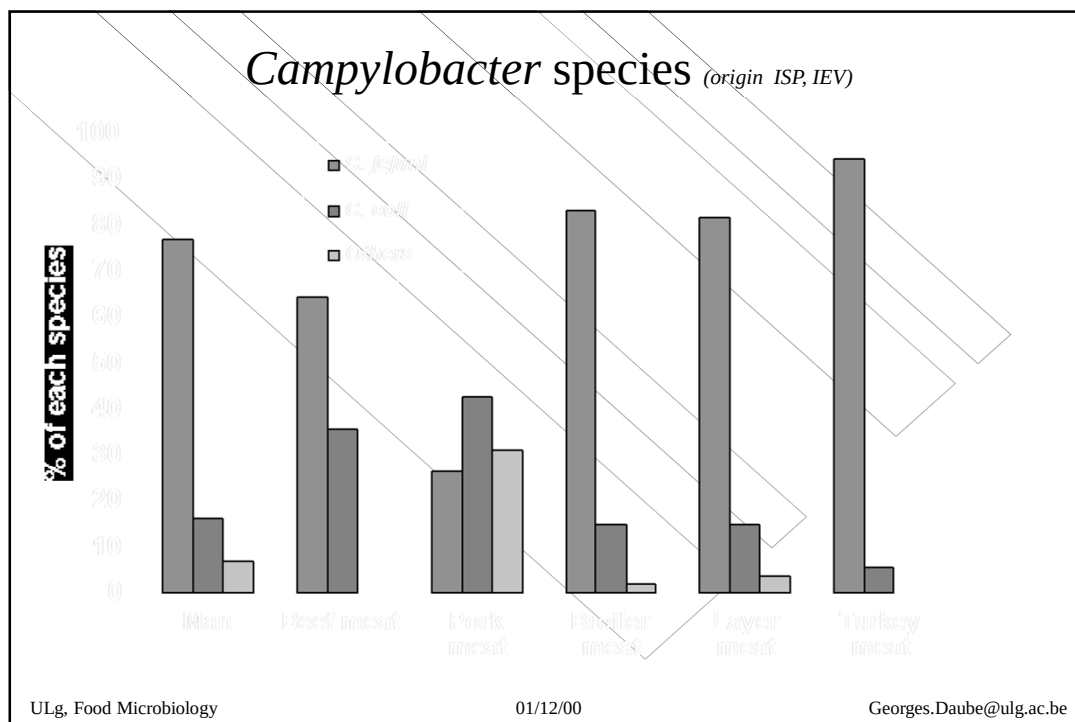
Prevention strategy

- **Breeding (germ-free sectors)**
- **Transformation and distribution industry**
 - Lower faecal contamination at slaughterhouse
 - Lower cross contamination along the sector
- **Consumer**
 - Avoid cross contamination from poultry raw meat
 - Watch over the cold chain
 - Good cooking of poultry meat

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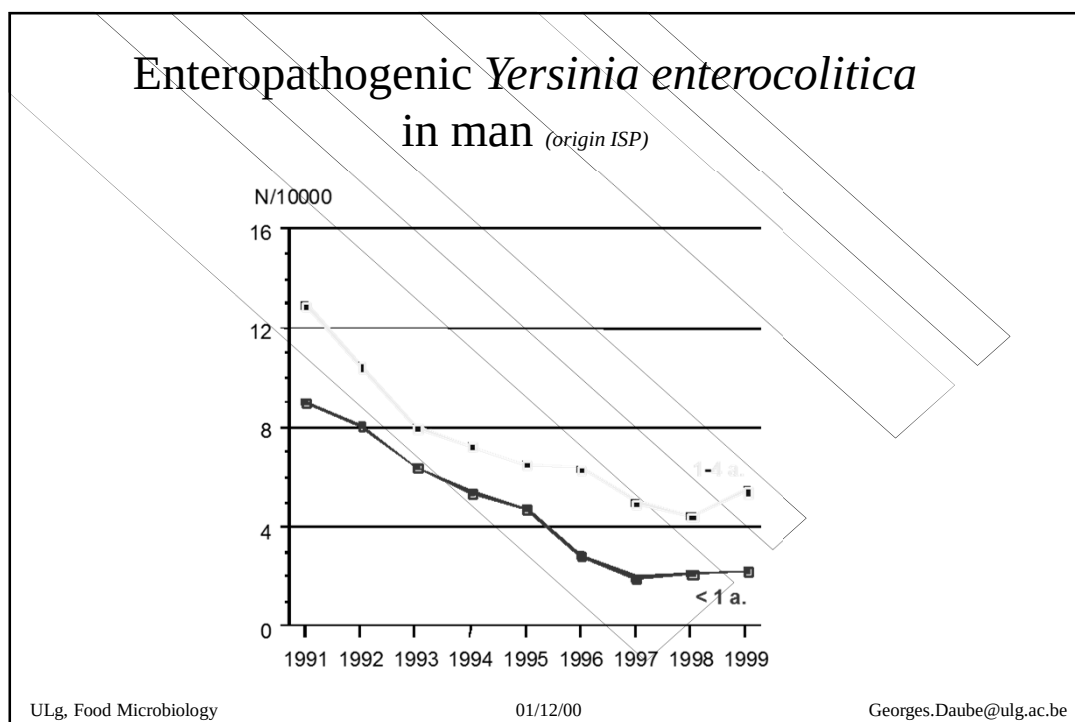
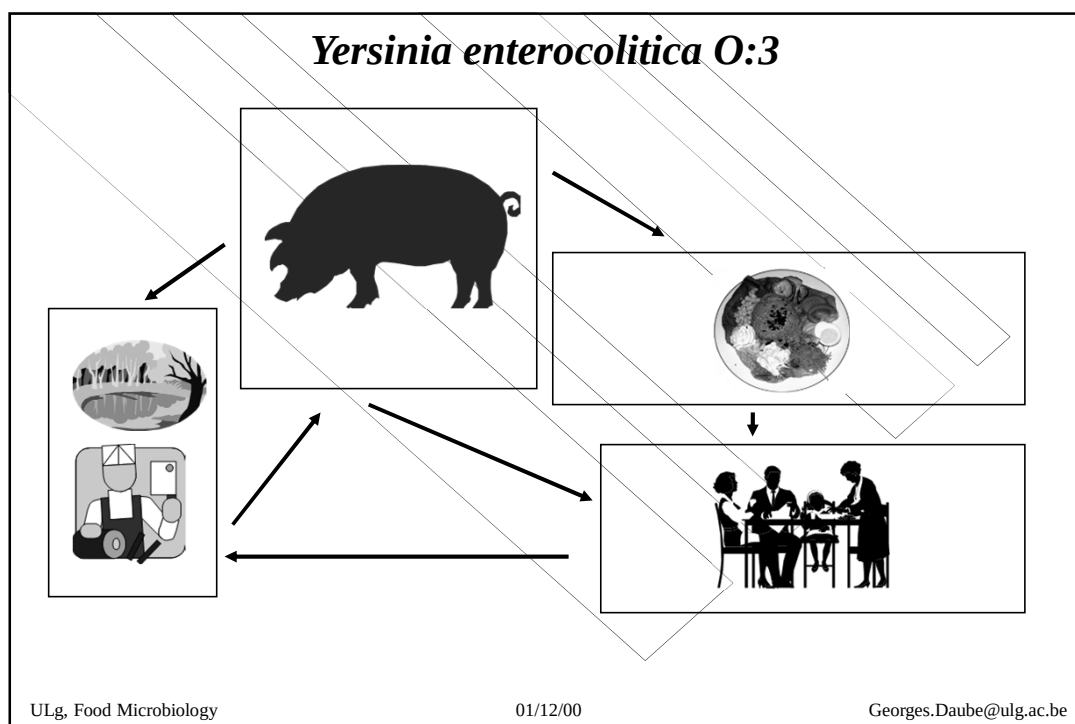


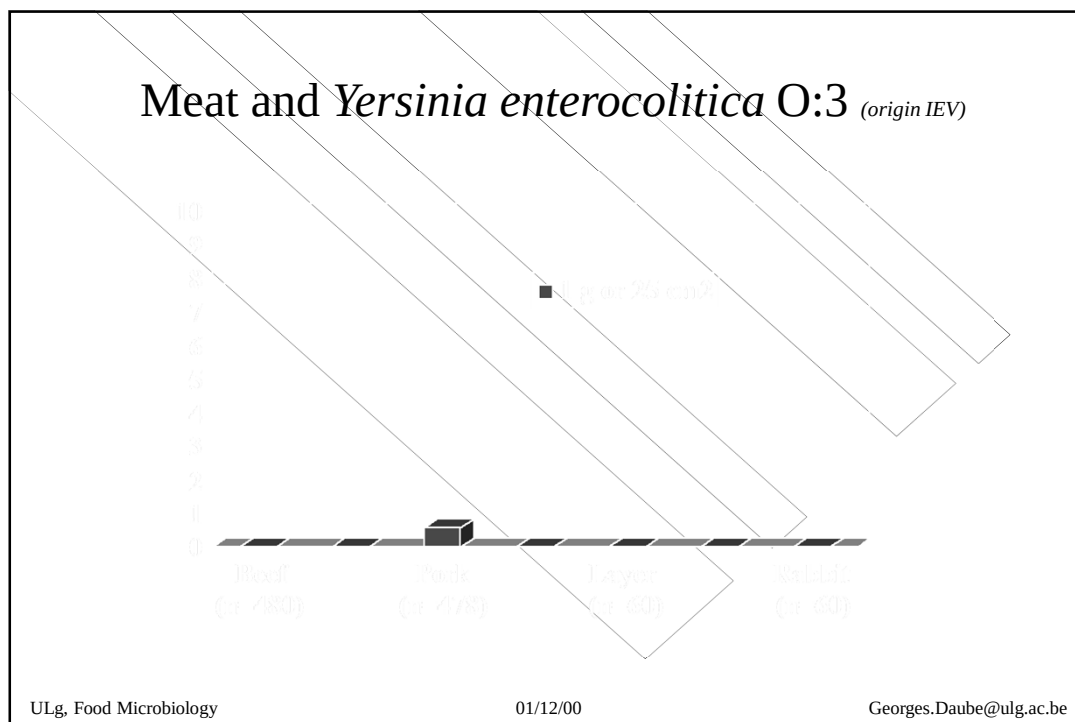
Thermophilic *Campylobacter*

Prevention strategy

- Breeding (poultry and offal sectors)
- Transformation and distribution industry
 - Lower faecal contamination at slaughterhouse
 - Lower cross contamination along the sector
- Consumer
 - Avoid cross contamination from poultry raw meat
 - Good cooking of poultry meat

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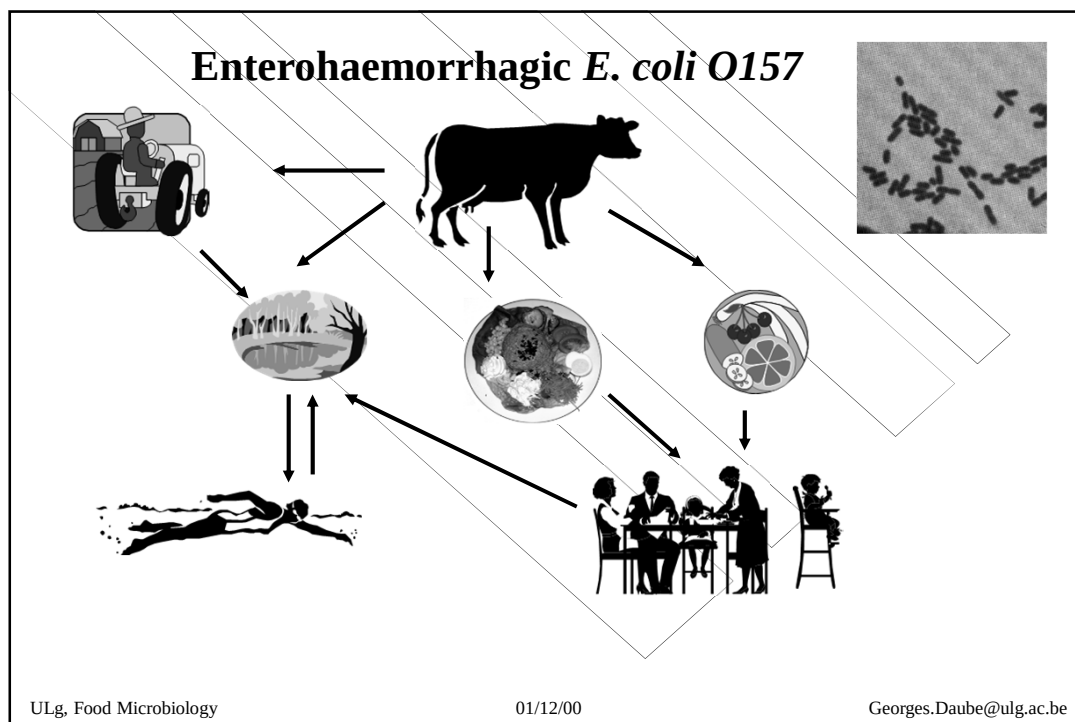


Yersinia enterocolitica O:3

Prevention strategy

- Transformation and distribution industry
 - Meat sector : lower cross contamination and reduce BBD
- Consumer
 - Avoid cross contamination from raw meat, offal
 - Good cooking of meat
 - Do not conserve a long time under cold conditions

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Enterohaemorrhagic *E. coli* O157

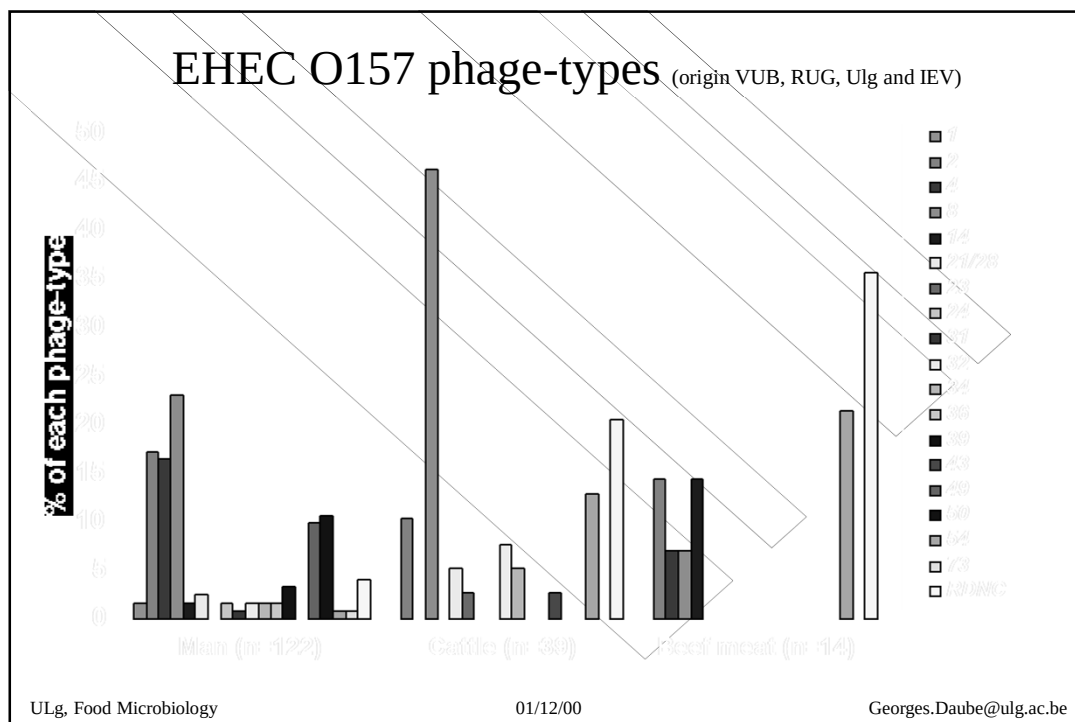
Situation in Belgium
(origin ULg, RUG, VUB and IEV)

- **1996-97: beef ground meat (25 g):**
0 EHEC O157 isolate from 624 samples
- **1998: beef carcasses (400 cm²) :**
9 (0,15 %) EHEC O157 isolates from 6.010 carcasses
- **1998: meats from several origins (poultry, pork, rabbit) (25 g):**
0 EHEC O157 isolate from 1.000 samples
- **1999: beef carcasses (1.600 cm²):**
16 (1 %) EHEC O157 isolates from 1620 carcasses
- **1999: beef ground meat (25 g):**
1 (0,1 %) EHEC O157 isolate from 900 samples

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Enterohaemorrhagic *E. coli* O157

Prevention

- **Cattle breeding**
 - Detection et elimination of the carrier breeding ??
- **Transformation and distribution industry**
 - Hygiene at the slaughterhouse and respect of the cold chain
 - Avoid meat mixing
- **Consumer**
 - Do not give raw meat at children
 - Good cooking of ground or tenderised beef meat

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Perspectives

- Sanitary surveillance systems of IEV
 - **Result fiches for each industry (control of auto-control)**
 - **Computerised data base available for at a distance consultation:**
 - Web site: mda04.fmv.ulg.ac.be

Discussion

- Need of national co-ordination(animals, food, man)
 - **Working group « Food-borne diseases»**
 - **Institute of veterinary expertise (IVE), Veterinary and agrochemical research centre (VAR) and Federal agency for security of the food chain (AFSCA)**
 - **Scientific institute of public health - Louis Pasteur, epidemiological section (Communities)**

Conclusions

- Need of a **consciousness** of ministers, administrations, scientists, agriculturists, industrials et consumers about importance of food transmissible zoonosis
- Need of a **co-ordination** of search, surveillance and prevention programmes, of AFSCA (animals and food) and of Communities (man)