Update on the EU Baseline Survey on *Campylobacter* spp. in broiler flocks and on *Campylobacter* spp. and *Salmonella* spp. in broiler carcasses
Presentation outline:

1. Activities of the EFSA Zoonoses Unit

2. *Campylobacter* results from CSR 2007

3. Conclusions from CSR 2007

4. BS *Campylobacter* – *Salmonella* broilers
   a) aims and structure of this BS
   b) data flow of this BS
   c) data validation: problems encountered
   d) structure of draft Report part A
   e) reporting and meeting timelines
Main activities of the EFSA Zoonoses Unit

• The EFSA Zoonoses Unit collects and analyses data for food, feed and animals on:
  – Zoonoses,
  – Antimicrobial resistance,
  – Microbiological contaminants and
  – Food-borne outbreaks

• The data is submitted to EFSA by the Member States and other reporting countries in accordance with Directive 2003/99/EC

• EFSA took over the task in 2005
Main activities of the EFSA Zoonoses Unit

• As outcome, an **annual Community Summary Report (CSR)** is prepared in collaboration with **ZCC** (Zoonosis Collaboration Center = National Food Institute of Denmark, DTU)

• **ECDC** provides for and analyses the data on **human zoonoses cases**

• The Community Summary Report is published on the EFSA website (**www.efsa.europa.eu**) as well as in printed copies
Main activities of the EFSA Zoonoses Unit

• Analyses of Community-wide baseline surveys (BS) on zoonotic agents

• The data is submitted to EC by the Member States and other reporting countries in accordance with Regulation 2160/2003.

Baseline surveys data are then submitted by DG SANCO in XML format to EFSA for analysis.
Notification rates of zoonoses cases in humans, 2007

- **Campylobacteriosis** and **salmonellosis** by far the most frequently reported zoonotic diseases in EU
Human campylobacteriosis increased in EU in 2007

In total 200,507 reported confirmed cases in EU, 2007

Source for EU trend: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Lithuania, Netherlands, Poland, Slovakia, Spain, Sweden, United Kingdom
Notification rates of human campylobacteriosis in MSs per 100,000 population, 2004-2007

There are differing trends amongst the MSs (same case for other zoonoses)
Proportions of *Campylobacter* positive samples by animal species and foodstuffs category within EU in 2007

*Campylobacter* most often reported from live poultry and pigs, but in food mainly only from raw broiler meat (on average 26% positive)
Campylobacter weighted EU prevalence in broiler flocks with 95% confidence intervals, 2004-2007

MSs’ specific results weighted by the size of national production, no significant trend observed at MSs group level (9 MSs)
Main conclusions from CSR 2007:

• The Summary Report provides an interesting overview of the situation and developments in the EU – needed by risk managers (Commission) and risk assessors (EFSA) at the EU level

• Campylobacteriosis still increasing in humans; broiler meat the main food-borne source with high contamination levels

• Further harmonisation of reporting will facilitate better interpretation and analyses of the data (aggregated data, few time points, rare phenomena)
Aims of *Campylobacter Salmonella* BS in broilers:

Comparable prevalences across Member States in broiler flocks:

- *Campylobacter* spp.

Broiler slaughter batches !!!

Broiler meat:

- *Campylobacter* spp. and *Salmonella* spp.

Community-wide control measures

Community veterinary legislation
Two sub-surveys and three reports

**Sub-survey 1**

*Campylobacter* spp. in broiler:

1.1. broiler flocks
1.2. broiler carcasses

First BS including a quantitative result *(Campylobacter* spp. counts in broiler meat)

**Sub-survey 2**

*Salmonella* spp. in broiler carcasses

First BS including a food product *(broiler carcass / meat)*

1 common report part A + 2 separate reports part B
BS data flow, analysis and reporting:

**Data flow**

- **Member States**
- **Commission**
  - **EFSA**
    - Zoonoses unit + WG BS broilers
      + AMU (modelling)
  - **Univ. Torino** (code verification)
  - **Univ. Hasselt CenStat** (Statistical analysis)
  - **Univ. Gent** (Campylobacter species distribution)
  - **Tech. Univ. Denmark** (Salmonella serovar phage typing)

**Data validation**
- Database lock: 4.06.2009

**Data analysis and reporting**
BS data validation: problems

- non-unique slaughterhouse identifiers
- non-unique slaughterhouse capacities
- non unique slaughter batch ID for two different sets of samples
- issue with variable V041ter
  - MSs using a modification of the ISO standard for *Campylobacter* enumeration
- measurement uncertainty estimation
- combined chilling method for some slaughterhouses
- ‘number of slaughtered broilers during 2008’
Prevalence of broiler slaughter batches infected with *Campylobacter*, at EU and country-specific level

three outcome variables (based on detection testing in pooled caecal contents samples from 10 birds per slaughter batch): qualitative result (positive or negative)

a) *Campylobacter spp.*
b) *Campylobacter jejuni*
c) *Campylobacter coli*
• Prevalence of broiler carcasses contaminated with *Campylobacter*, at EU and country-specific level

• three outcome variables: (based on combined detection and enumeration testing, i.e. a carcass is regarded as positive when either the detection or the enumeration test is positive):
  a) *Campylobacter* spp.
  b) *Campylobacter jejuni*
  c) *Campylobacter coli*
• Prevalence of broiler carcasses contaminated with *Salmonella*, at EU and country-specific level

• three outcome variables (based on detection testing – qualitative result):
  a) *Salmonella* spp.
  b) *Salmonella* Enteritidis and/or Typhimurium
  c) serovars other than *Salmonella* Enteritidis or Typhimurium
• *Campylobacter* enumeration test results on broiler carcasses, at EU and country-specific level

• one outcome variable: *Campylobacter* spp. enumeration

- log transformed *Campylobacter* enumeration test results (logarithm to the base 10)

- suggested categorization of the lowest counts:
  <10 cfu/g (no confirmed colonies on the plates),
  10 - 40 cfu/g,
  41 - 100 cfu/g,
  101 - 1000 cfu/g,
  1001 – 10000 cfu/g and
  > 10000 cfu/g.
Concordance and discordance between the Campylobacter detection and enumeration test results on broiler carcasses, at EU and country-specific level

one outcome variable / two tests:

a) Campylobacter spp. detection  
b) Campylobacter spp. enumeration
• the descriptive tabular analysis of the **laboratory-specific measurement uncertainty** of the *Campylobacter* enumeration test results on broiler carcasses, at EU and country-specific level

• one outcome variable: *Campylobacter* spp. enumeration
Section 5: *Campylobacter* spp. frequency distributions

- Frequency distributions of the *Campylobacter* species in broiler slaughter batches (caecal samples -based on detection testing), EU (MSs + two non MSs)

- Frequency distributions of the *Campylobacter* species in broiler carcasses (based on detection testing), EU (MSs + two non MSs)

- Frequency distributions of the *Campylobacter* species in broiler carcasses (based on enumeration testing), EU (MSs + two non MSs)

Important! *Campylobacter* species only available when detection testing was negative
• Overview of the quality control of the *Campylobacter* testing

(Eva’s presentation)
Structure of draft Report part A
Section 7: Detection of *Salmonella* spp. in broiler carcasses

- **Prevalence estimation** in broiler carcasses both at the MS and EU level
  - also for a maximum of 5 different groups of *Salmonella* serovars

- **Frequencies distribution** of all identified *Salmonella* serovars for each MS and at EU level

- **Overview of the quality control of the *Salmonella* testing**
BS meeting and reporting timelines:

- **Campylobacter** spp. in broiler flocks and **Campylobacter** spp. and **Salmonella** spp. in broiler carcasses

- **Publication deadlines:**
  - Report part A: 31 January 2010
  - Two reports part B: 30 April 2010

- **Report part A:**
  - WG meeting to discuss **plan of analysis:** 23-24 February 2009
  - WG meeting to discuss **results:** 13 July 2009
  - WG meeting to discuss **results, conclusions and recommendations:** 23 September 2009

  scheduled: another 3 WG meetings + 1 telephone conference

- **Report part B:** to be discussed
Thank you for your attention!

MariaTeresa.DaSilvaFelicio@efsa.europa.eu