



EU strategies on poultry / Campylobacter

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Milano

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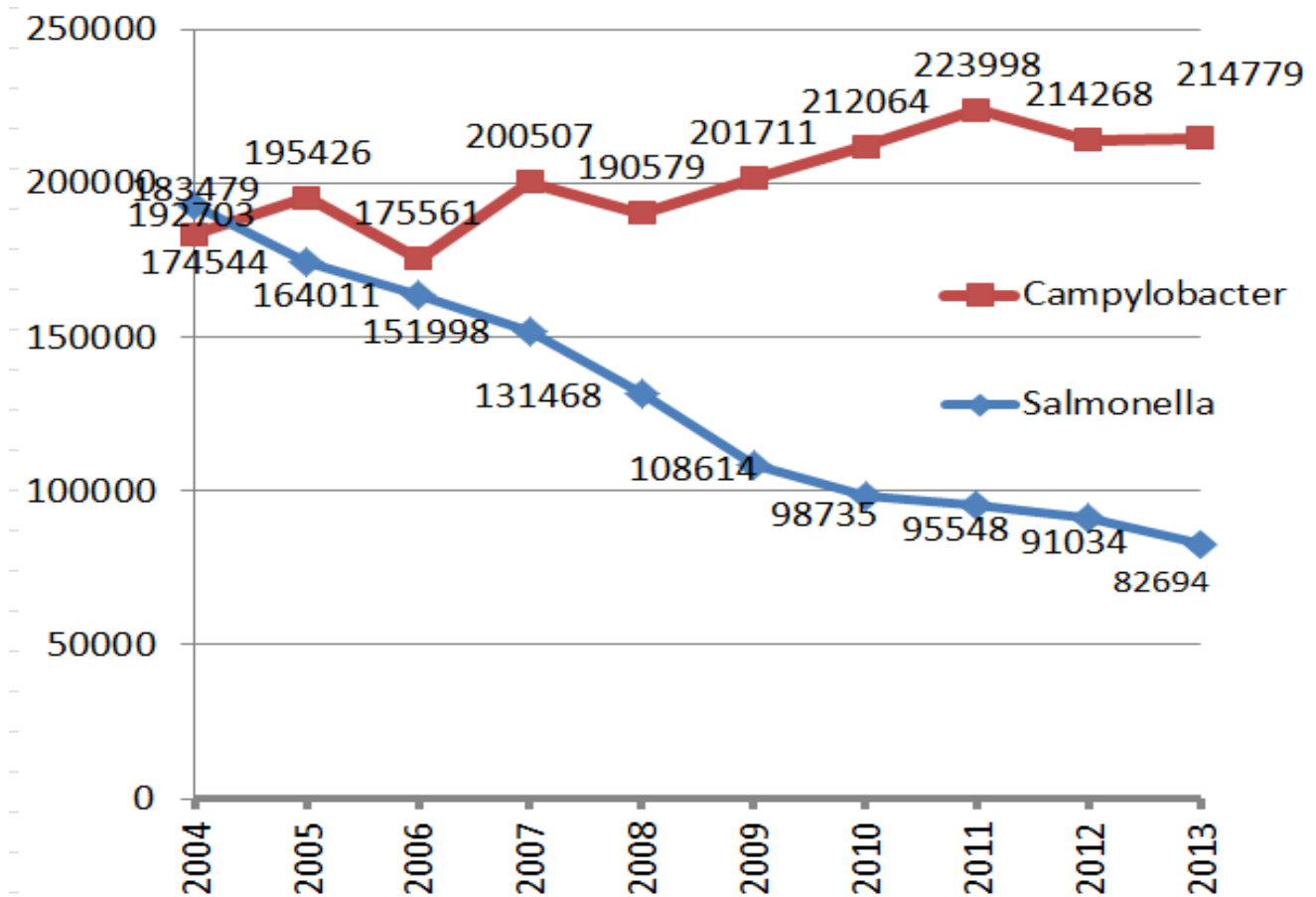
Overview

- Hygiene at the slaughter of poultry
- Cost-benefit of selected control options
- Conclusions from an EC workshop
- Status-quo

Introduction statements

- *Campylobacteriosis is causing a **high burden of human disease** in the EU, both in terms of numbers of human cases and in DALY's.*
- *The consumption of **poultry meat is directly linked to 20-30 %** of the human cases and indirectly to 50-80 % to the poultry reservoir.*

Evolution of poultry-linked hazards in the EU



Source:
EFSA/ECDC
report on zoonoses
(reported human cases per year)

Risk factors for *Campylobacter*

Positive flock results 30x more probable in a positive carcass

Positive flock results in higher contamination of carcass

Contamination risk differs within MSs and between slaughterhouses

Control measures at slaughter

- *100% risk reduction by reduction of carcass concentration by $> 6 \log_{10}$ units*
 - achieved by irradiation/cooking
- *More than 90% risk reduction by reduction of carcass concentrations by $> 2 \log_{10}$ units,*
 - be achieved by freezing for 2-3 weeks or reduction of the concentration in intestines at slaughter by $> 3 \log$;
- *50-90% risk reduction by reduction of carcass concentrations by 1-2 \log_{10} units,*
 - which can be achieved by freezing for 2-3 days, hot water or chemical carcass decontamination with lactic acid, acidified sodium chlorite or trisodium phosphate

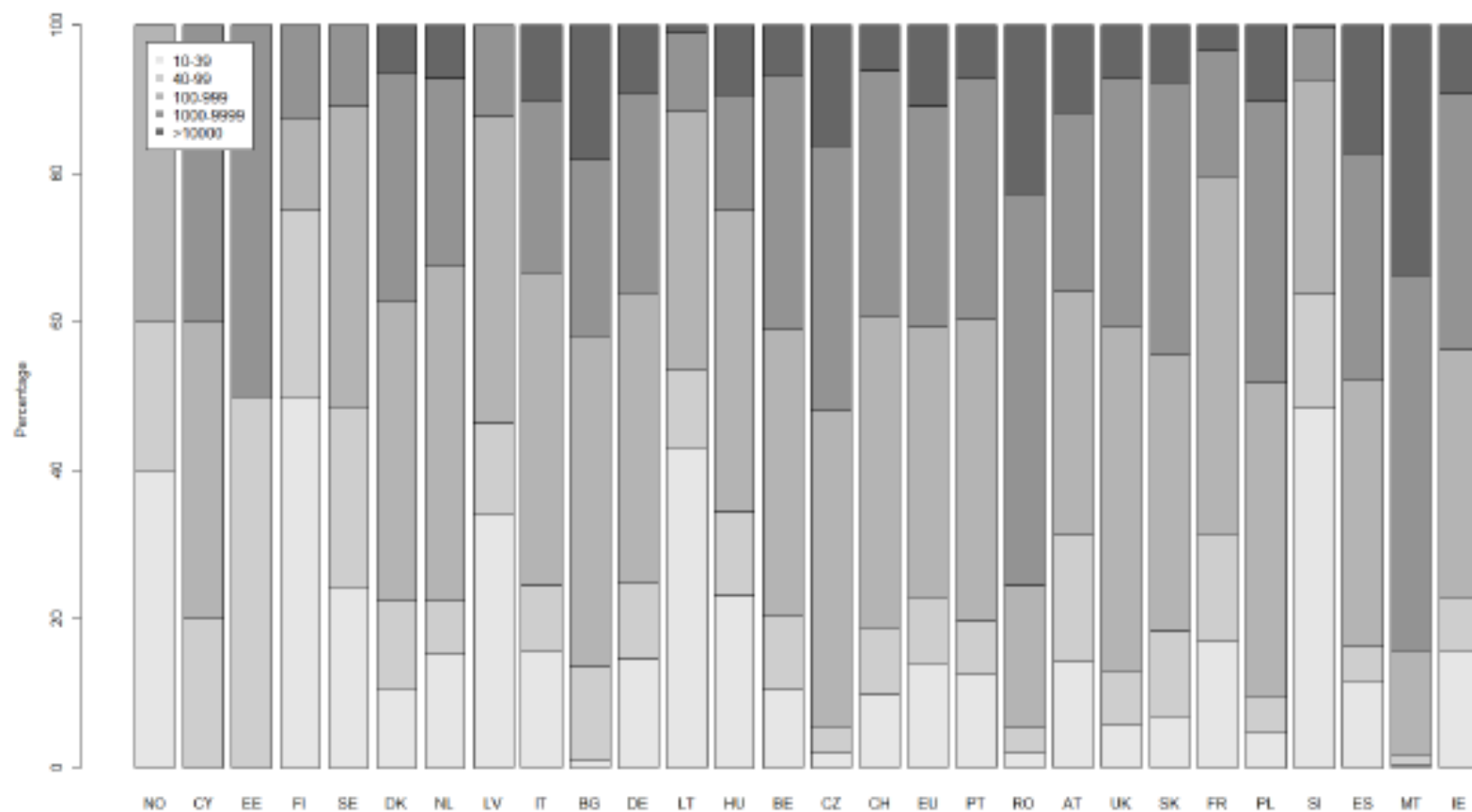
Food safety criterion

- Purpose: to define the acceptability of a product or a batch of foodstuff applicable to products placed on the market;
- Point in the food chain: e.g. products placed on the market during their shelf-life
- Matrix: e.g. fresh poultry meat

Process hygiene criterion

- Purpose: to indicate the acceptable functioning of the production process and to set an indicative contamination value above which corrective actions are required.
- Point in the food chain – e.g. broiler chicken carcasses after chilling
- Matrix: e.g. neck skin (used for *Salmonella*)

Campylobacter counts on broiler carcasses, BS 2008



Barplot of the distribution of *Campylobacter* counts on broiler carcasses, by country
- excluding counts <10 cfu/g neck and breast skin :
- five categories; 10-39; 40-99; 100-999; 1,000-9,999; >10,000 cfu/g neck and breast skin

Impact of microbiological criteria

< 1000 resp. < 500 cfu/g skin

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>50% resp. >90% risk reduction

EU-wide 15 / 45% of all slaughter batches would not conform (baseline data)

Cost/benefit analyses

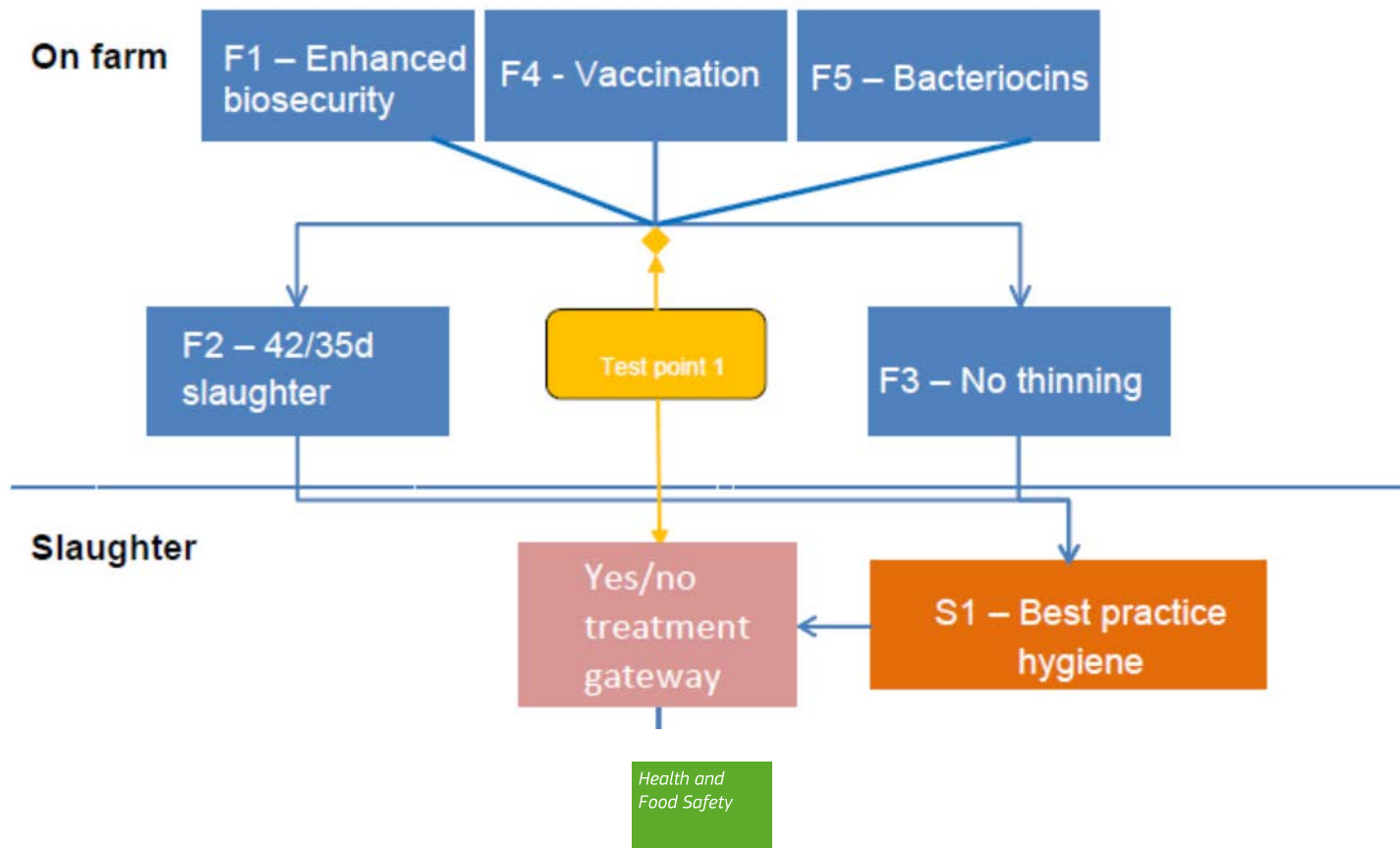
- *Analysis of the costs and benefits of setting certain control measures for reduction of Campylobacter in broiler meat at different stages of the food chain*
- *A report for DG SANCO of the EC carried out by ADAS UK Ltd.*
- *Link:*

http://ec.europa.eu/food/food/biosafety/salmonella/other_act_en.htm



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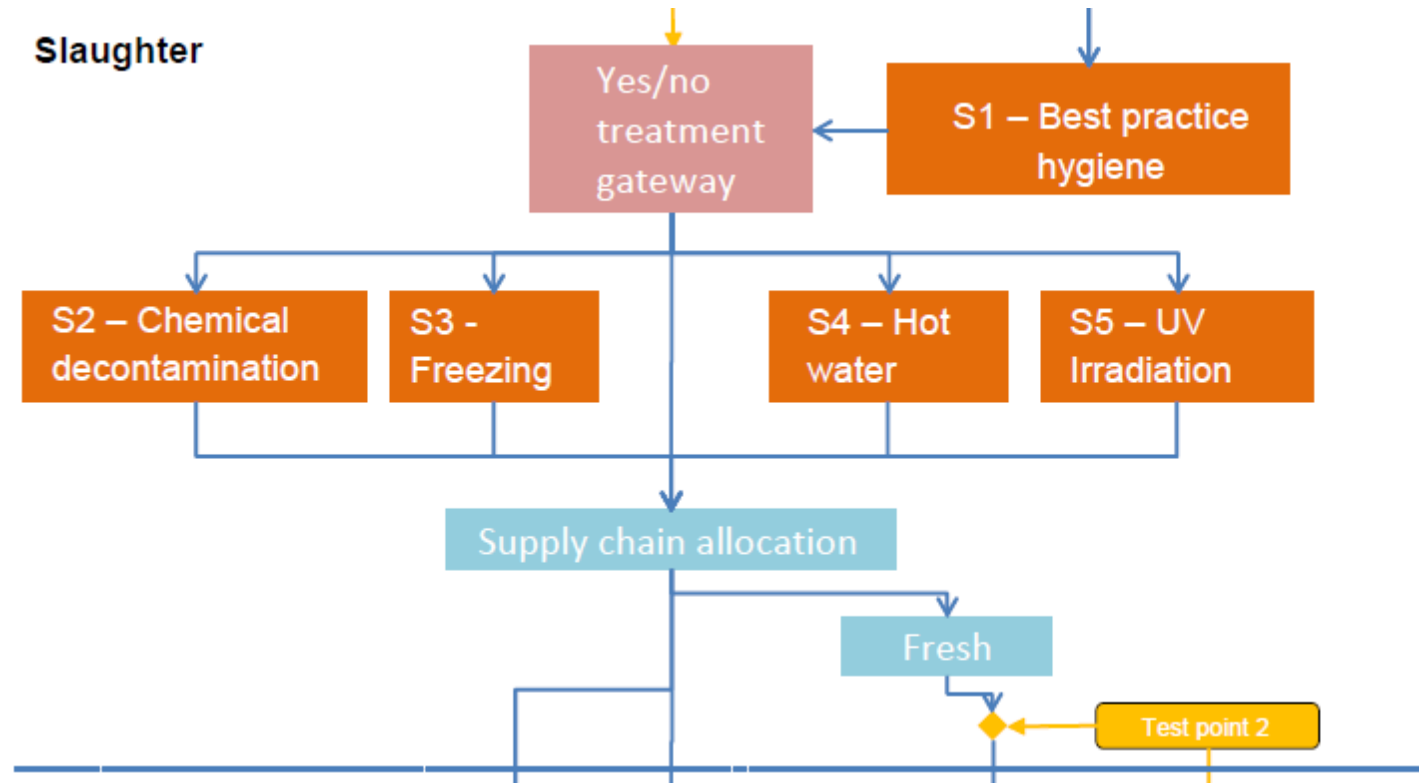
Control measures – on farm





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Control measures – at slaughter





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Cost-effectiveness of individual controls

ID	Name	Reduction in incidence (%)	EU cost of control € million	EU cost of illness saved € million	EU Net cost per DALY averted €
F1	Enhanced Biosecurity	44%	36.7	333.8	-6,102
F2	Early Slaughter	15%	288.1	116.1	10,154
F3	No Thinning	12%	43.6	87.4	-3,438
F4	Vaccination	64%	297.7	478.8	-2,594
F5	Bacteriocins	64%	297.7	478.8	-2,594
S1	Best practice hygiene	23%	54.0	166.1	-4,626
S2	Chemical Decontamination	60%	116.1	442.9	-5,060
S3	Freezing (2-3 weeks)	93%	346.5	682.9	-3,377
S4	Hot Water	70%	272.2	516.8	-3,245
S5	UV Irradiation	100%	341.3	738.2	-3,687



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Control strategies – 50% reduction

*When the **upper range** efficacy values are used, only the **farm biosecurity** control F1 is selected. This is the most cost-effective option.*

Table 8.4 Summary costs of *Campylobacter* control strategy CS1b

Control name and (efficacy %)	Reduction in EU incidence (%)	Annual cost per DALY avoided		Availability	Industry impact	Consumer impact
		Lower estimate	Upper estimate			
F1 Enhanced Biosecurity (70%)	56%	€581	€872			
T1 On-farm Testing						
T2 Post slaughter Testing						

Control strategies – 50% reduction

*When the **lower range** efficacy values are used, **chemical decontamination S2** is selected.*

Control name and (efficacy %)	Reduction in EU incidence (%)	Annual cost per DALY avoided		Availability	Industry impact	Consumer impact
		Lower estimate	Upper estimate			
F1 Enhanced Biosecurity (40%)	59%	€1412	€2118			
T1 On-farm Testing						
S2 Chemical Decontamination (40%)						
T2 Post slaughter Testing						

Control strategies – 90% reduction

*With lower range values for control efficacy for all controls the model selects Enhanced Biosecurity (F1) and **Freezing** (S3); S3 comes in because of its relatively high efficacy value. This may have significant consumer impacts.*

Control name and (efficacy %)	Reduction in EU incidence (%)	Annual cost per DALY avoided		Availability	Industry impact	Consumer impact
		Lower estimate	Upper estimate			
F1 Enhanced Biosecurity (40%)	93%	€1589	€2383			
T1 On-farm Testing						
S3 Freezing (2-3 weeks) (90%)						
T2 Post slaughter Testing						

Cost/benefit conclusion

- *All control measures (except the early-slaughter of birds) calculated in the **cost-benefit analysis**, **turn out positive**, which means that the necessary investments are weighted out by the gained public health costs.*
- *The **commitment of all stakeholders** along the food chain of poultry meat is required to ensure an integrated control approach.*

Conclusions from the ECs workshop (1)

- ***Biosecurity at farm level is key, however will not lead to success as a stand-alone measure.***
- ***Improved monitoring of the hygiene in the slaughter process by implementing a process hygiene criterion on Campylobacter is among the most cost-beneficial control options, is already available and has rather low impact on the industry and consumers.***

Conclusions from the ECs workshop (2)

- ***Additional measures** such as washing of carcasses with water or decontamination are seen as supplements depending on specific situations e.g. outdoor birds or highly contaminated batches.*
- ***Harmonising performance targets** is better than harmonising measures on the EU level.*

Conclusions from the ECs workshop (3)

- ***EU market to benefit*** in principal from harmonised measures and the level of the protection for the consumers should be equal in all MSs
- ***Awareness raising*** e.g. by campaigns on the avoidable risks of foodborne pathogens and on good cooking practises could empower the partial responsibility of the consumer.

Conclusions from the ECs workshop (4)

- *Dedicated enforcement actions by competent authorities are needed for strengthening the implementation of current and future hygiene provisions.*
- *More **research** is needed on the epidemiology of Campylobacter both on farm and in the infectious pathways to the consumer. Also further studies on the seroprevalence and the source attribution of Campylobacter can be recommended.*

Conclusions from the ECs workshop (5)

- *Interesting **new control options** such as crust chilling or fly nets are on the horizon, however not yet fully assessed and/or available*
- ***Other sources** of campylobacteriosis such as cattle or the environment could be relevant under specific circumstances, however on the EU-level a focus should be given to foodborne campylobacteriosis deriving from poultry meat.*
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Status-quo *Campylobacter*

- Poultry meat as most important source
- EFSA opinion on the hygiene of poultry slaughter published – identifies *Campylobacter* and *Salmonella* as main risks
- Chemical decontamination currently for poultry meat not allowed
- Several Member States have implemented *Campylobacter* control



Thank you for your attention!