



DTU Food
National Food Institute

EQAS 2014

Salmonella spp.
Campylobacter spp.

April 24th, 2015

Mia Torpdahl (mtd@ssi.dk)

Susanne Karlsmose Pedersen (suska@food.dtu.dk)



STATENS
SERUM
INSTITUT



Objective

Presentation of obtained results for the EURL-AR and the ECDC FWD network for selected strains and antimicrobials of *Salmonella* and *Campylobacter*

Testing performed by:

- The public health sector (ECDC FWD network)
- The veterinary/food sector (EURL-AR network)

Between the networks:

- Differing methods applied for determining AMR profile
- Differing criteria for categorization as S (I) R



STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

Included strains and antimicrobials

Salmonella

4 strains:

- S-9.1
- S-9.2
- S-9.7
- S-9.8

4 antimicrobials:

- Ampicillin (AMP)
- Cefotaxime (FOT)
- Ciprofloxacin (CIP) (pefloxacin for disk)
- Tetracycline (TET)

Campylobacter

4 strains:

- C-9.1
- C-9.2
- C-9.3
- C-9.7

Species ID + 3 antimicrobials:

- Species identification (coli/jejuni)
- Ciprofloxacin (CIP)
- Erythromycin (ERY)
- Tetracycline (TET)



STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

Method for performing AST and ID in the EURL-AR

Salmonella and *Campylobacter* AST

Demands set in EU/652/2013 (also listed in the protocol):

- Dilution methods (broth microdilution or agar dilution)
- List of antimicrobials (2 panels for *Salmonella*)
- Range of dilutions
- Interpretative criteria

Campylobacter species identification (*C. coli*, *C. jejuni*):

- Mandatory
- In-house methods accepted
- PCR-protocol suggested (available on the EURL-AR website)



STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

Method for performing AST and ID in the FWD-Net

Salmonella and *Campylobacter* AST

Recommended EU protocol for harmonised monitoring of antimicrobial resistance in human *Salmonella* and *Campylobacter* isolates:

- Mandatory (4 *Salmonella* and 3 *Campylobacter*) and optional antimicrobials
- Dilution methods (broth microdilution or agar dilution) and disk diffusion
- Reporting of presently used methods including breakpoints/cutoffs
- Reported values interpreted using EUCAST ECOFFs done by SSI for all participants

Campylobacter species identification (*C. coli*, *C. jejuni*):

- Mandatory
- In-house methods accepted

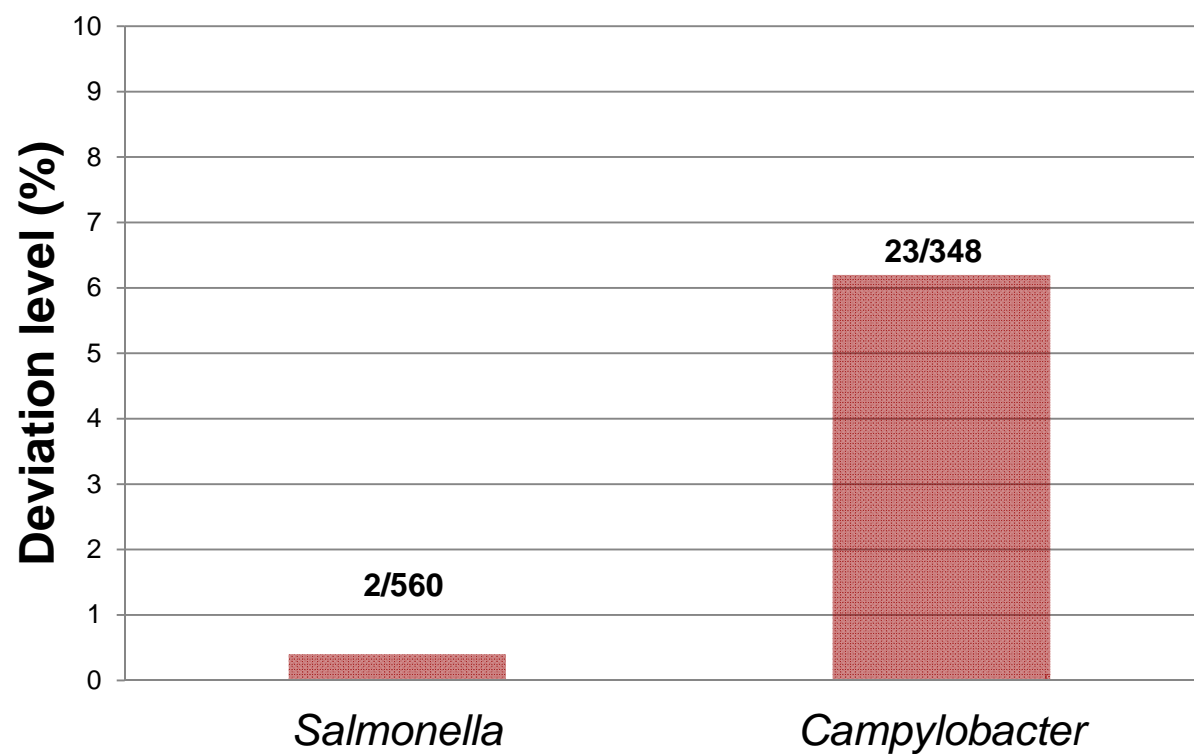


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

EURL-AR Overall results (AST)

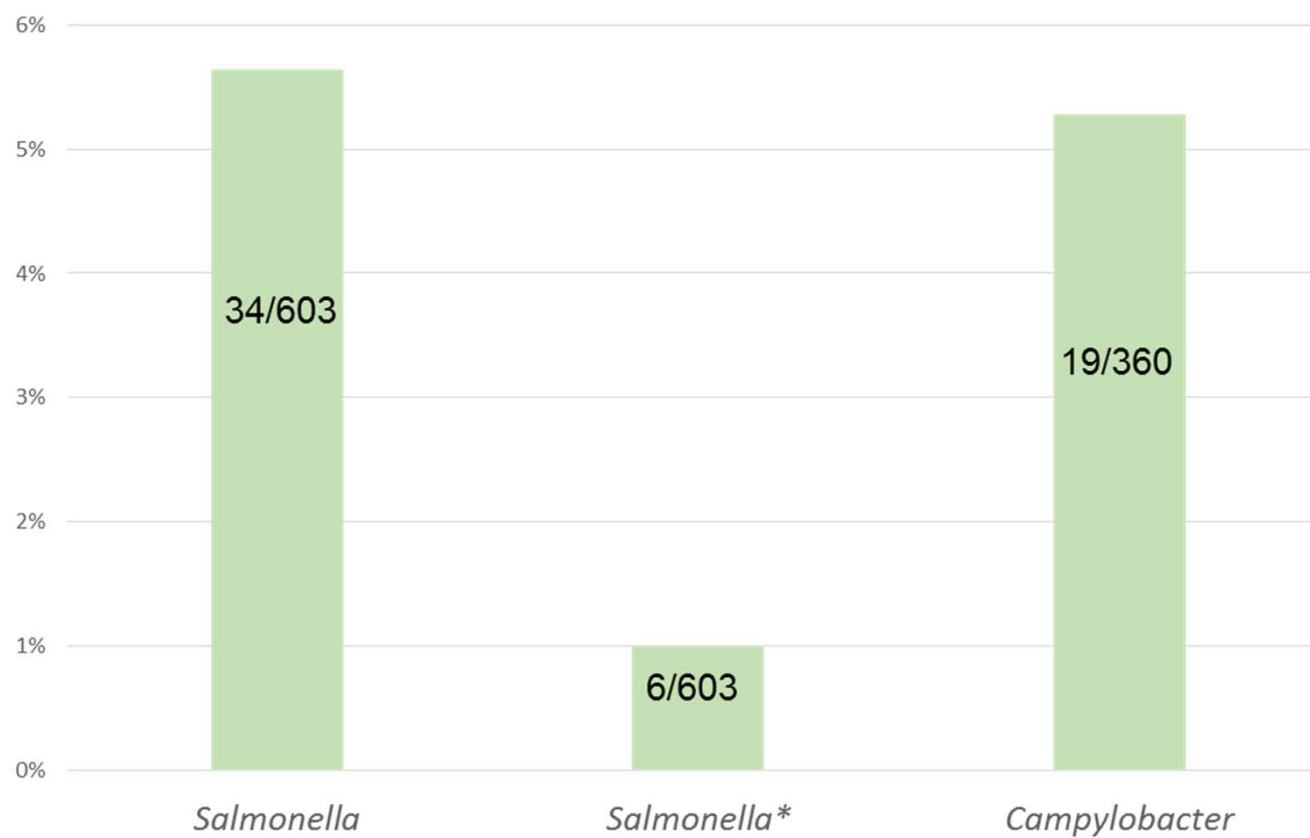


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

FWD-Net Overall results (AST)

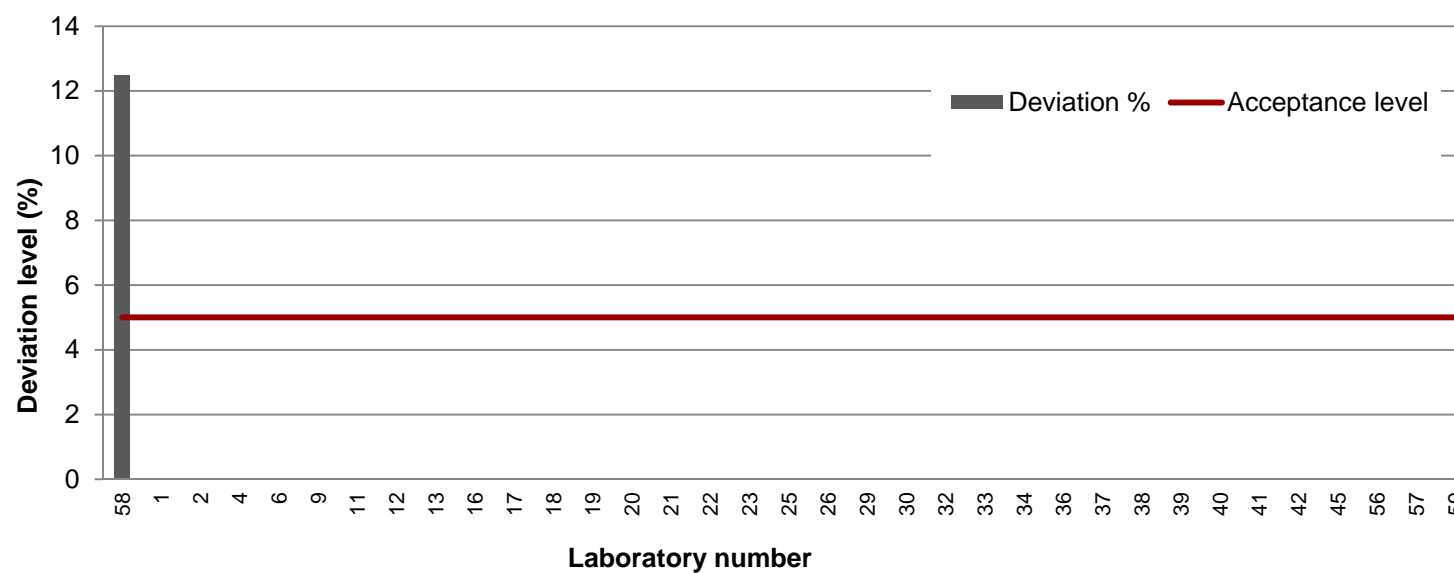


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

EURL-AR *Salmonella* results – pr. lab



Lab #58: 12.5% deviations based on 2 deviations out of 16 results

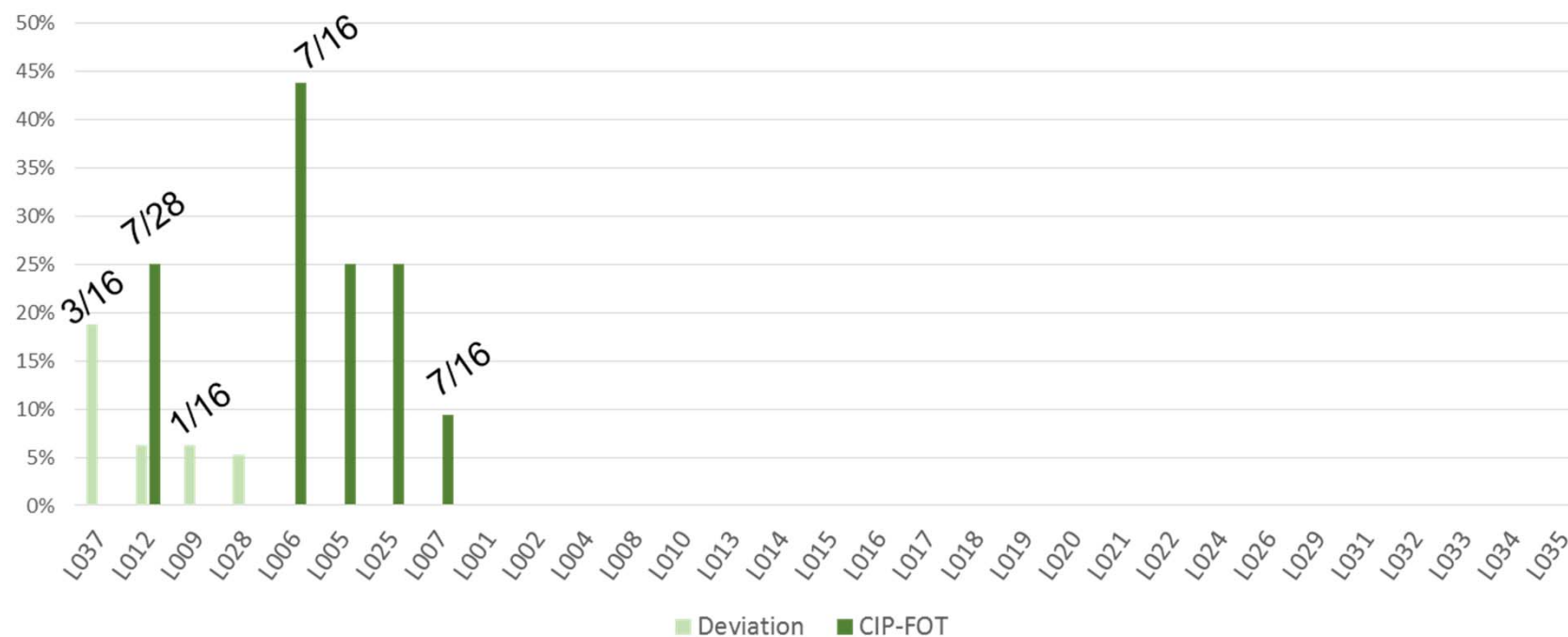


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

FWD-Net *Salmonella* results – pr. lab – 31 labs

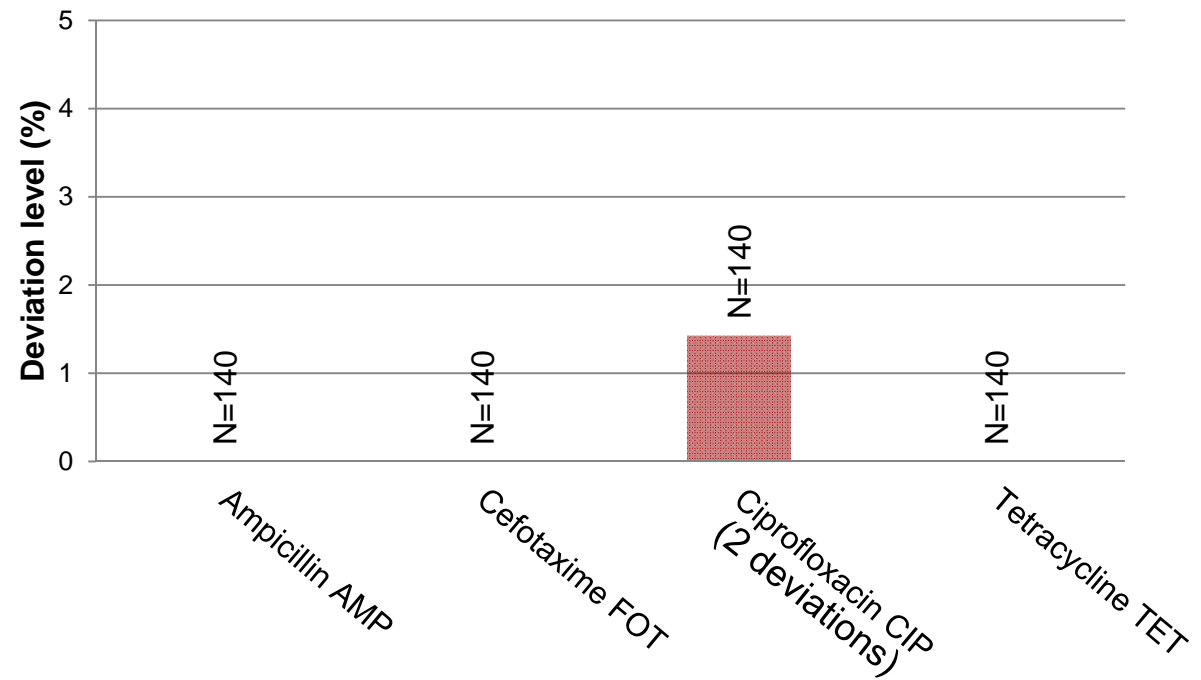


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

EURL-AR *Salmonella* results – antimicrobials

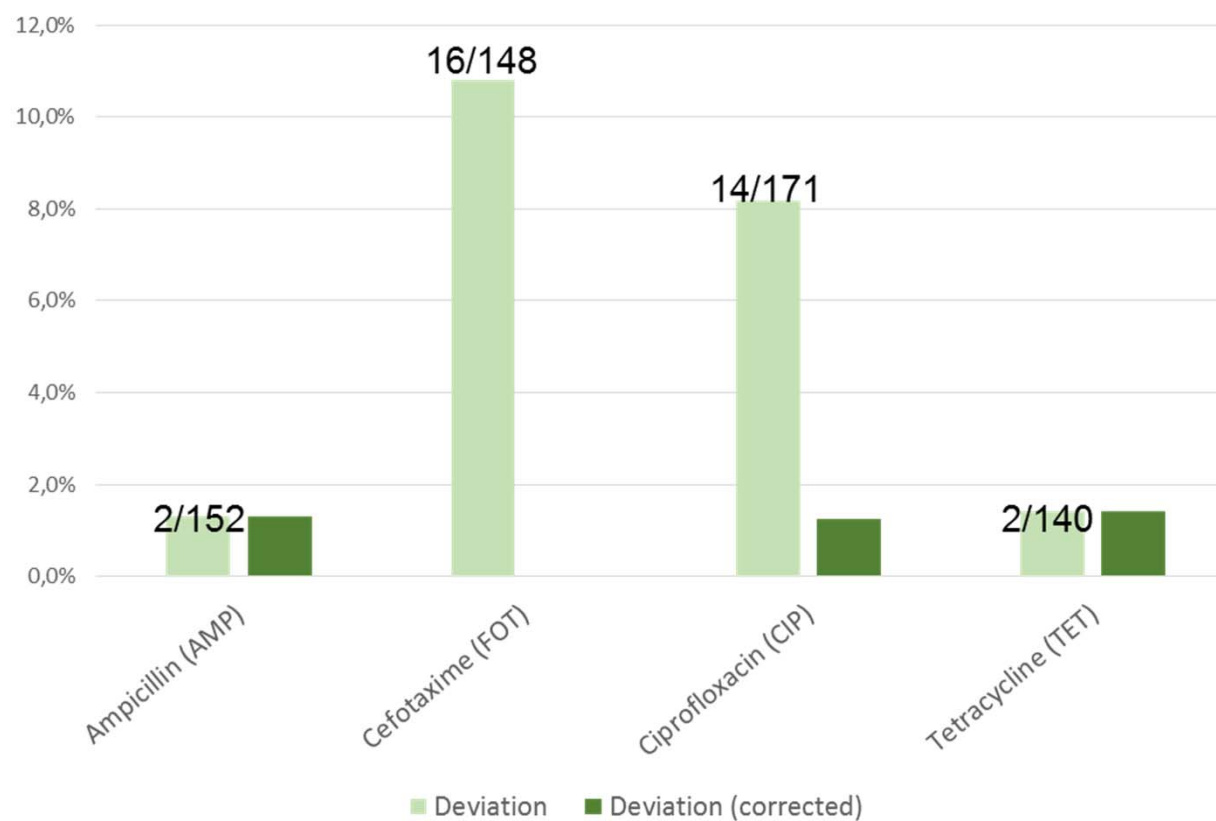


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

FWD-Net *Salmonella* results – antimicrobials

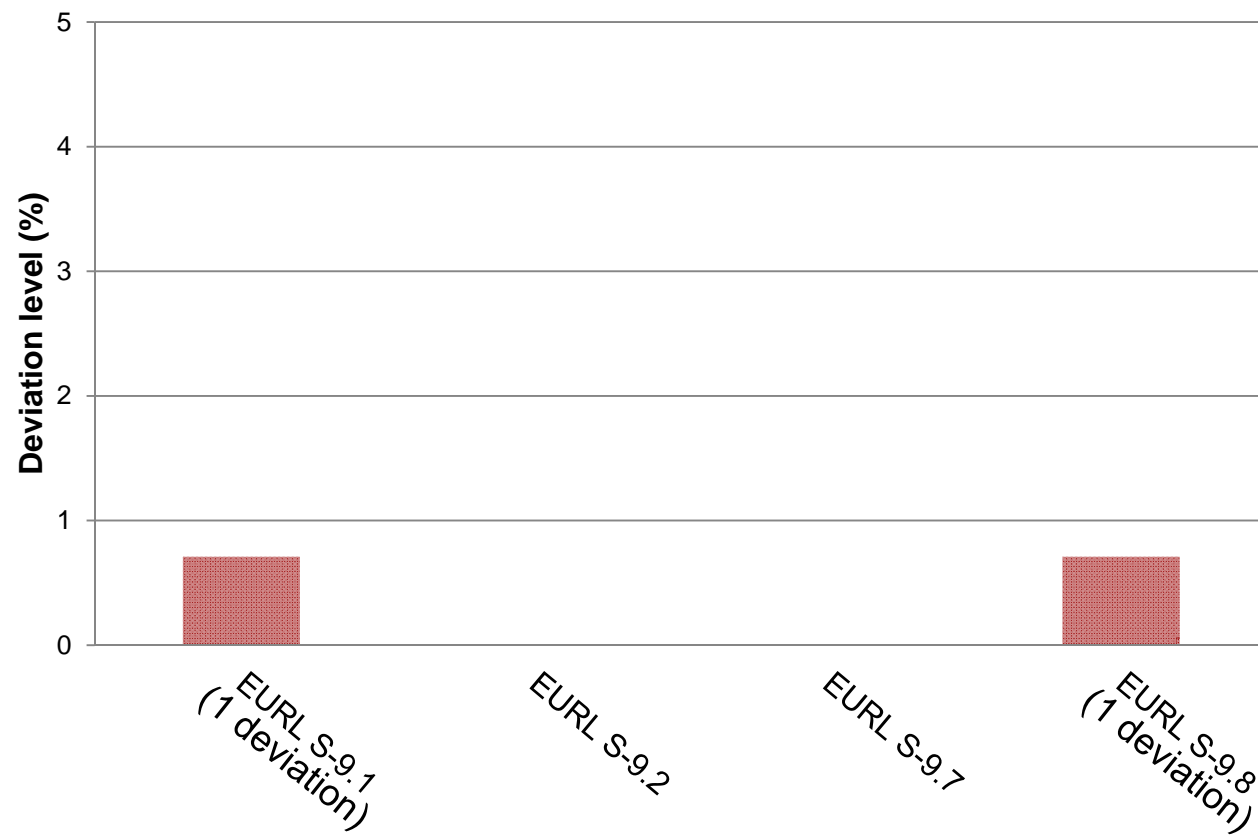


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

EURL-AR *Salmonella* results – strains

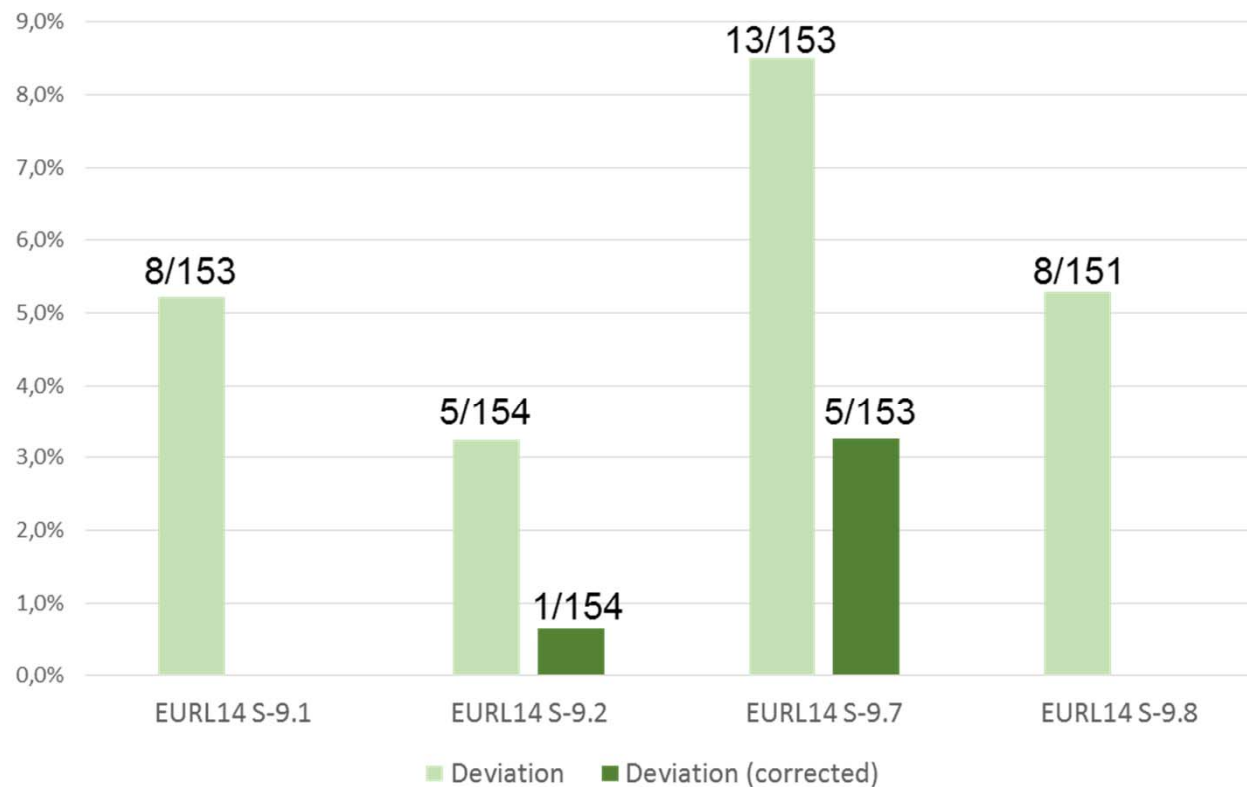


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

FWD-Net *Salmonella* results – strains

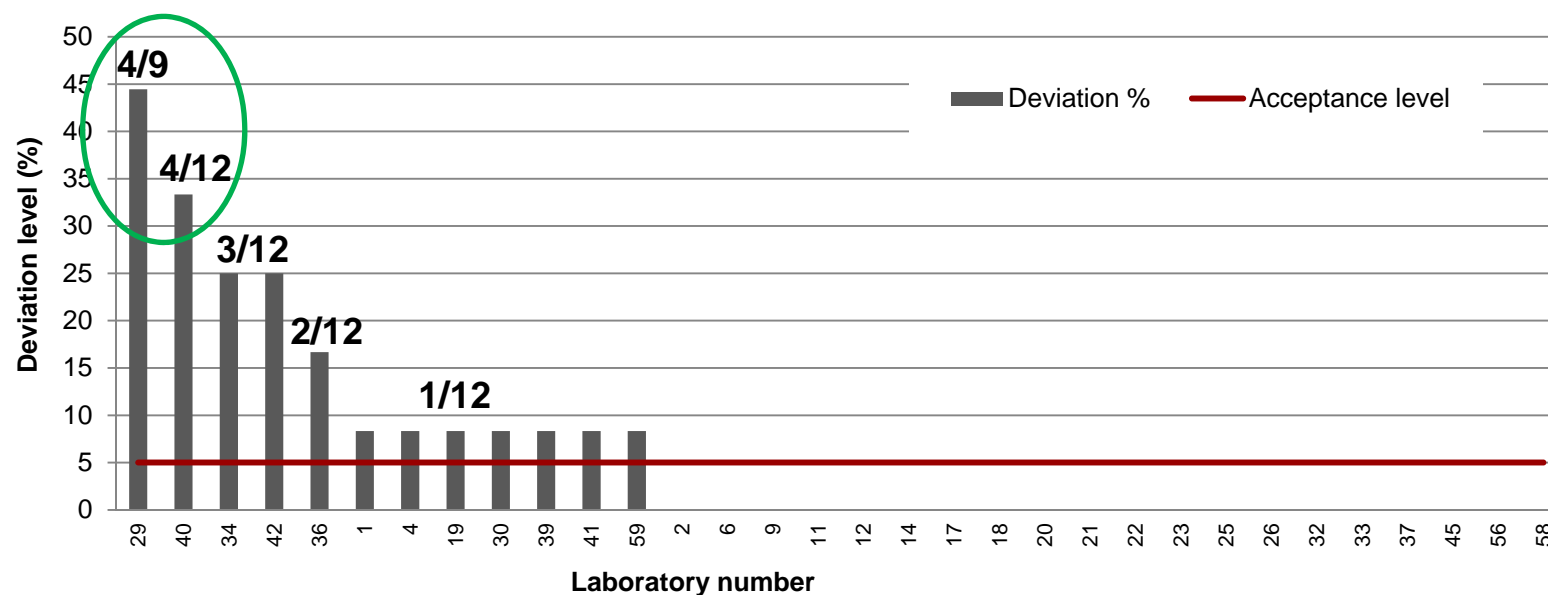


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

EURL-AR *Campylobacter* results – pr. lab



Defined as outliers (full set of results)

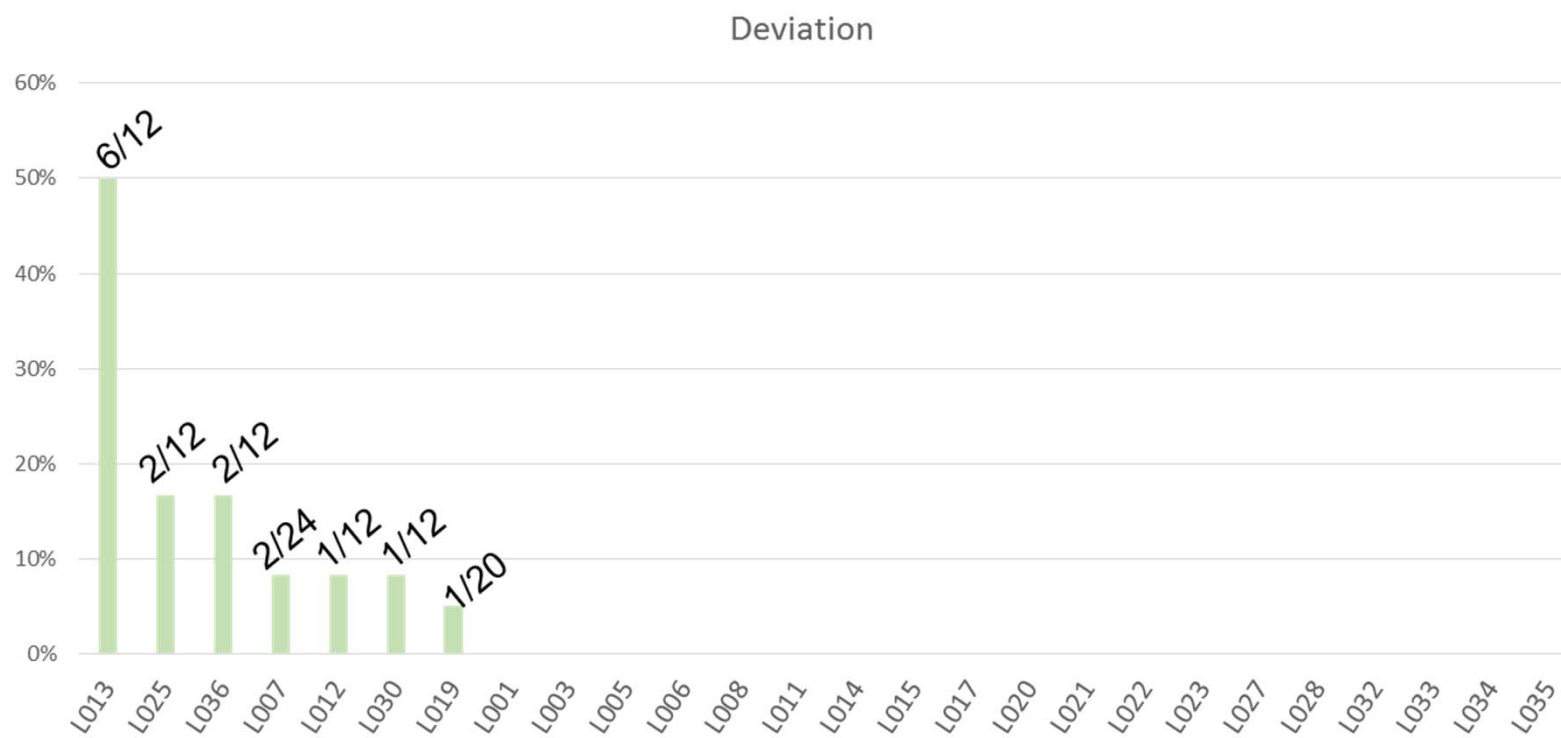


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

FWD-Net *Campylobacter* results – pr. lab – 26 labs

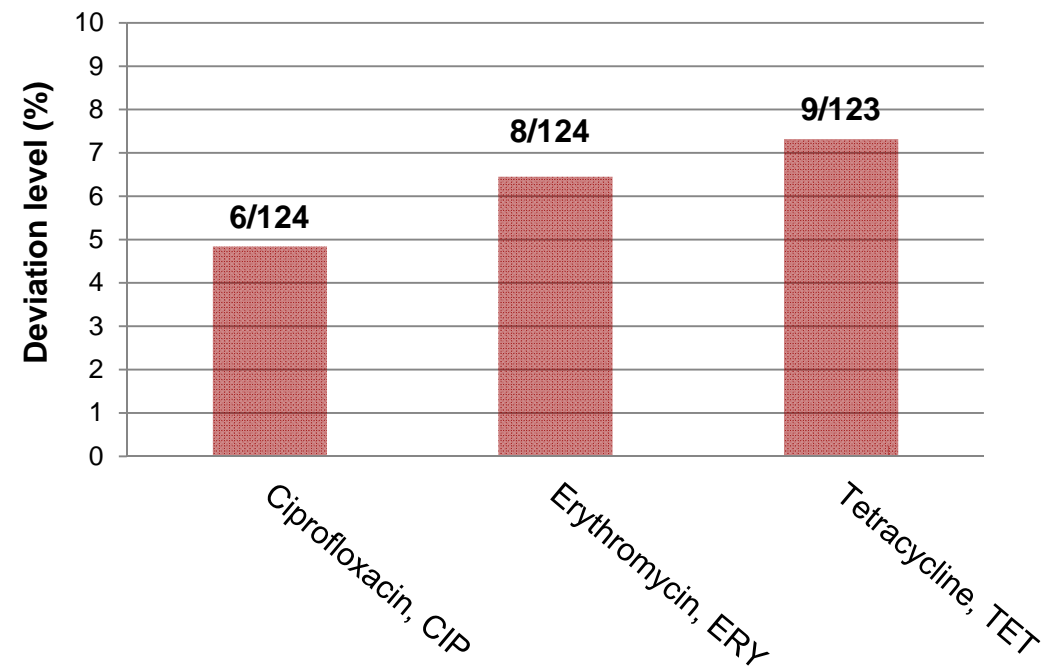


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

EURL-AR *Campylobacter* results – antimicrobials

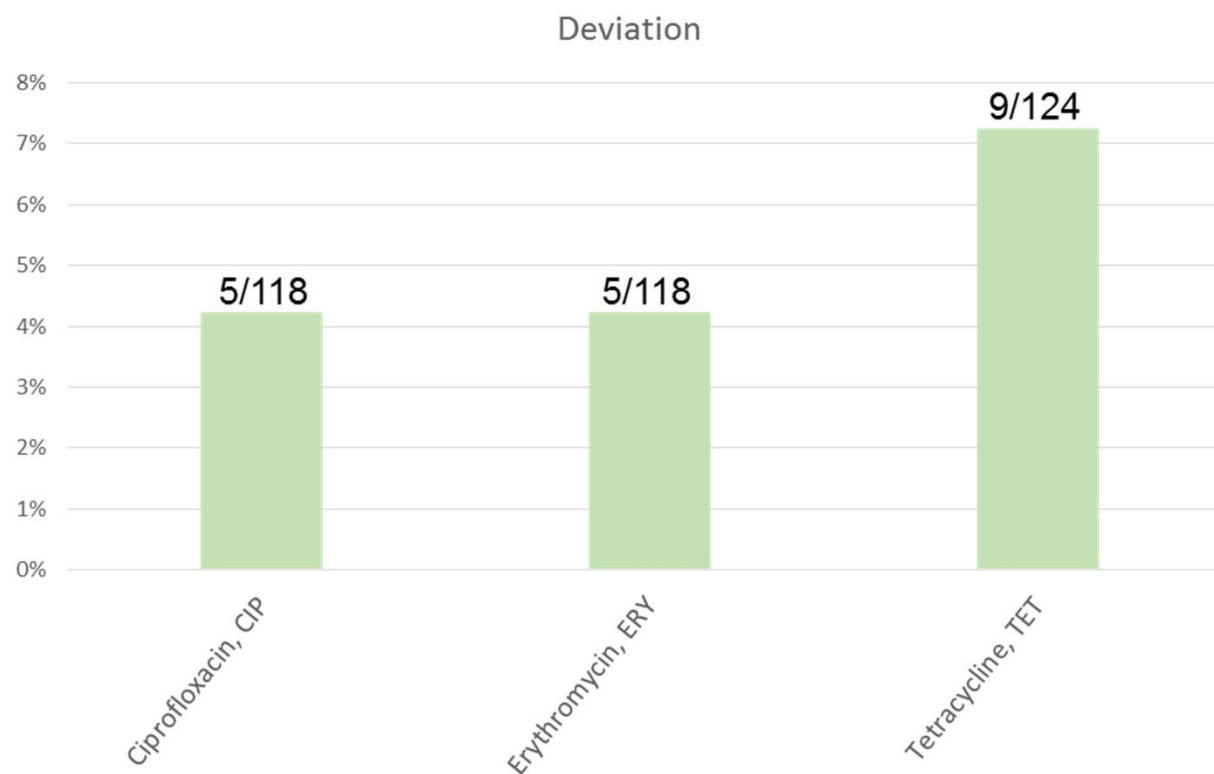


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

FWD-Net *Campylobacter* results – antimicrobials

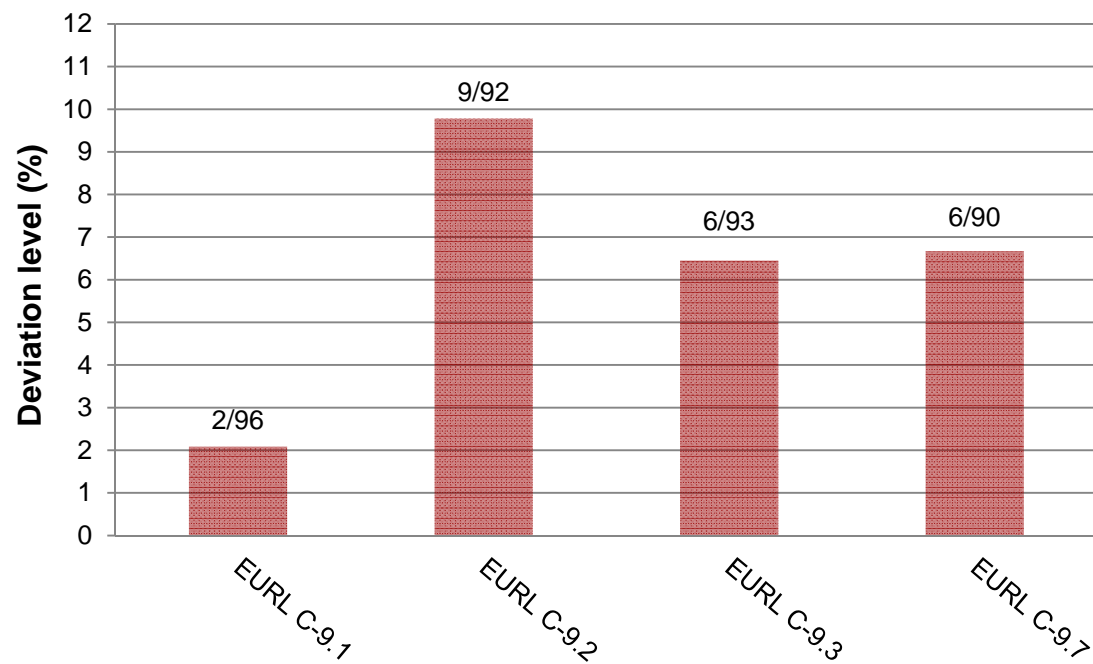


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

EURL-AR *Campylobacter* results – strains

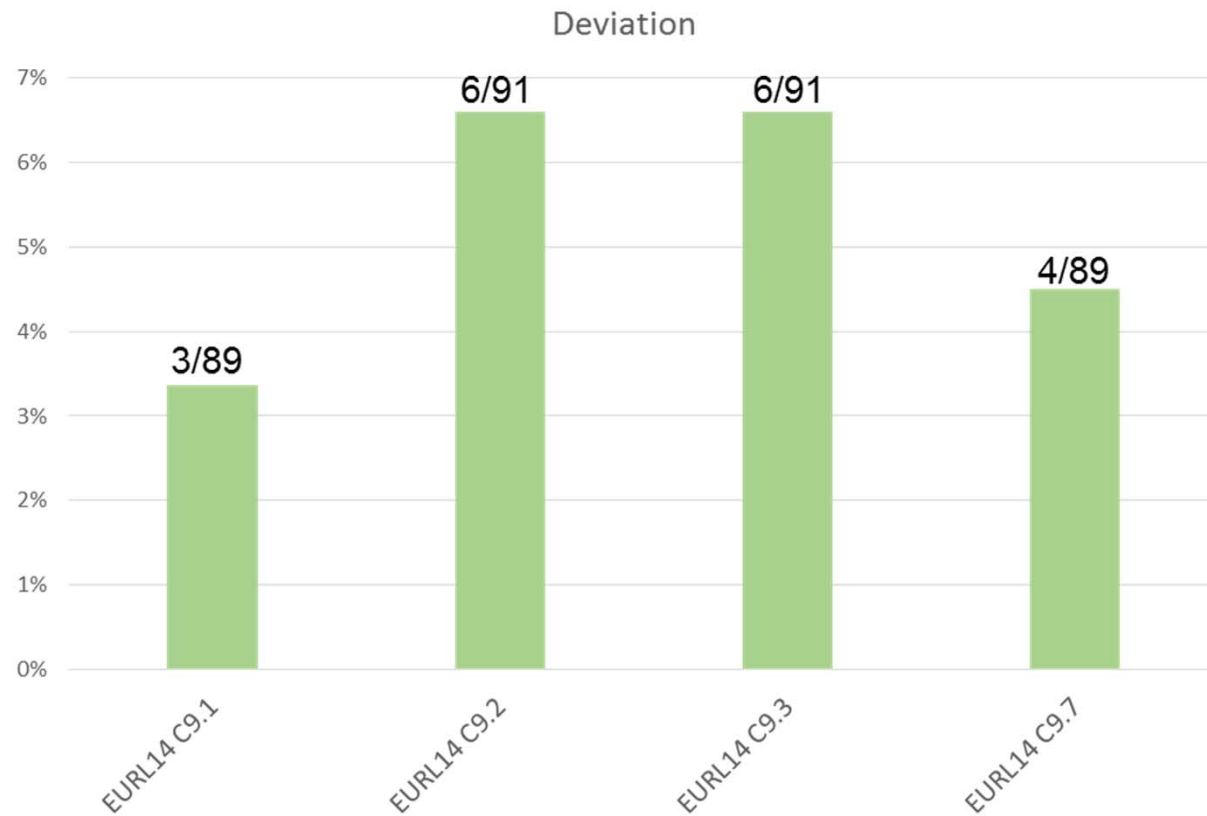


STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

FWD-Net *Campylobacter* results – strains



STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

Obtained results (species ID, *Campylobacter*)

EURL-AR

In total; 6 deviation in 128 tests (4.7% deviation)

- C-9.1 (exp. *C. jejuni*) lab #36
- C-9.2 (exp. *C. coli*) lab #40
- C-9.7 (exp. *C. jejuni*) lab #19, #36, #40, #42

FWD-Net

In total; 10 deviations in 104 tests (9,6% deviation)

- C-9.1 (exp. *C. jejuni*) L001,
- C-9.2 (exp. *C. coli*) L001, L015, L036
- C-9.3 (exp. *C. coli*) L001, L015, L022. L025
- C-9.7 (exp. *C. jejuni*) L001, L036



STATENS
SERUM
INSTITUT



DTU Food
National Food Institute

Summing up

Challenges, *Salmonella*

- Due to lack of tests in the whole range of antimicrobial dilutions, one laboratory's results were excluded from the analysis (EURL-AR)
- Due to lack of tests in the whole range of antimicrobial dilutions, several laboratory results were excluded from the analysis (FWD)

Challenges, *Campylobacter*

- Two laboratories identified as outliers (EURL-AR)
- One laboratories identified as outlier (FWD)
- Due to lack of tests in the whole range of antimicrobial dilutions, one laboratory's results were excluded from the analysis (EURL-AR)
- Species identification (EURL-AR and FWD)



STATENS
SERUM
INSTITUT



DTU Food
National Food Institute