Netherlands Food and Consumer
Product Safety Authority
Ministry of Economic Affairs

Microbiological control at the Laboratory Food and Feed Safety

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The laboratory

- ~140 employees

- ~60 employees microbiology (3 teams)
- ~80 employees chemistry (4 teams)

Tasks:

- Routine analyses in chemical, microbiological, virology and molecular biology
- Develop new methods and techniques and maintain and support research methods

The microbiology team

- ~40 employees for **routine** analysis
  (technical school, BSc level)

- ~20 employees for **science and expertise**
  (BSc, MSc and PhD level)
  - routine support
  - method development
  - knowledge building and sharing (working groups/network)

Quality prerequisites

- Qualified and trained employees
- Validated and accredited methods (ISO 17025)
- Quality checks (ISO 17025)
  - Equipment (scales, pipettes, dilutors, incubators)
  - Intake of materials
  - Positive and negative controls
  - Proficiency testing

Microbiological research

45.000 samples annually (100% project based)

- process samples: ± 11.000
- dedicated projects: ± 19.000
- carcass testing: ± 8.000

} monitoring

- complaints/outbreaks: ± 1.000
- import/export: ± 5.000

On average 3 analyses per sample:

± 130.000 analysis/year

Microbiology methods performed at laboratory

Bacteria:

- Total viable count
- *E. coli*
- STEC
- *Salmonella*
- *Campylobacter*
- *Shigella*
- *Vibrio*
- *Bacillus cereus*
- *Staphylococcus aureus*
- *Listeria monocytogenes*

AntiMicrobialResistance:

- *E. coli*
- ESBL
- *Enterococcus*
- *Salmonella*
- *Campylobacter*

- Toxin research
  (*B. cereus* en *S. aureus*)

Virus

- Hepatitis A
- Hepatitis E
- Norovirus

Method development

ISO methods when available

- Updated/supplemented with molecular techniques
  (PCR, MALDI biotyping, molecular serotyping)

Reference method as first alternative (EU reference protocol)

Own method when necessarry (specific Dutch policy, etc.)

- Based on literature

→ Use our expertise to give input for ISO/EURL methods and to publish methods

Import projects – border control

Different routes:

Regulation (EC) No 669: feed and food of non-animal origin

Directive 97/78/EC, article 20 and 24: feed and food of animal origin

Monitoring projects: selected country/product/microorganism combinations

Projects Regulation 669

01/07/2017: Salmonella in Sesamum seeds: Nigeria (NG), Sudan (SD), Uganda (UG)

23/02/2017: Salmonella in Sesamum seeds: Uganda (UG)

01/01/2017: Salmonella in Sesamum seeds: Uganda (UG), India (IN)

→ 2017 monitoring 155 batches n= 5 → 775 samples

→ 4 batches Salmonella positive

Projects Directive 97/78/EC

- Salmonella in processed meat
- Vibrio cholerae in shrimp
- STEC in processed meat

(E.coli, Enterobacteriacea, Norovirus)

→ 2442 samples

>120 Salmonella positive (mainly serotype Heidelberg)
6 batches STEC positive → (n=5 samples)
2 samples Vibrio positive (1 V. cholerae)

Projects - Monitoring at the border:

- Fresh herbs 40 batches n=5
  (1 batch ESBL, 2 Salmonella, 0 STEC)
- Poultry meat 41 batches n=5
  (19 ESBL, 6 Salmonella)
- Aquaculture Fish 47 samples
  (5 ESBL, 0 Salmonella)

Additional projects at wholesale of imported products:

- Fresh herbs
- Red meat
- Poultry meat
- Exotic meat

Reporting the data

National Institute for Public Health and the Environment
Ministry of Health, Welfare and Sport

State of Infectious Diseases *in the Netherlands, 2016*

EFSA JOURNAL

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Scientific Report of EFSA

The European Union summary report on trends and sources of zoonoses, zoonotic agents and food-borne outbreaks in 2013

European Food Safety Authority, European Centre for Disease Prevention and Control

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ELSEVIER

Volume 257, 18 September 2017, Pages 225-231

Porcine blood used as ingredient in meat productions may serve as a vehicle for hepatitis E virus transmission

Ingeborg L.A. Boxman [a], Claudia C.C. Jansen [a], Geke Hägele [a], Ans Zwartkruis-Nahuis [a], Jeroen Cremer [b], Harry Vennema [b], Aloys S.L. Tijsma [c, 1]

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https://doi.org/10.1016/j.ijfoodmicro.2017.06.029

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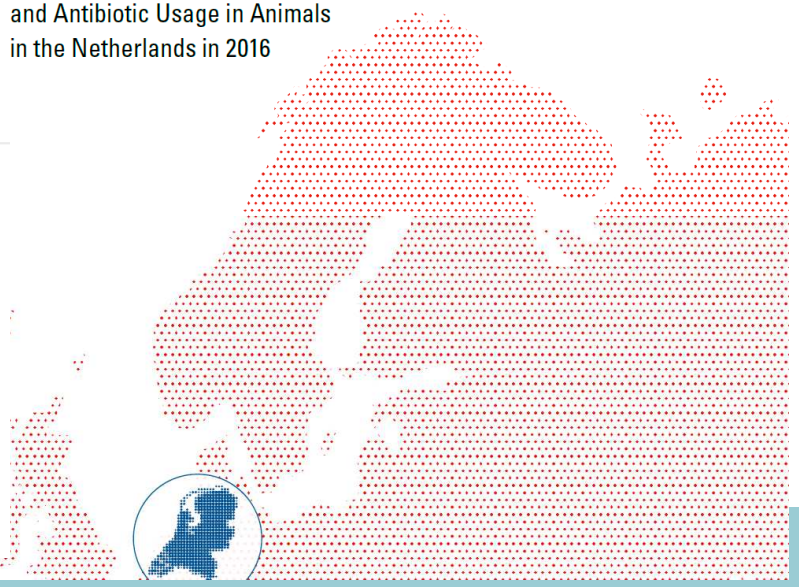
Monitoring of Antimicrobial Resistance and Antibiotic Usage in Animals in the Netherlands in 2016



Thank you!

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