

National Reference Laboratory on Salmonella in Denmark

A collaboration between the public food control laboratory and university

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NRL collaboration between Danish Veterinary and Food Administration and the National Food Institute (DTU Food)

(Shared responsibility)

DTU-Food activity comprise four target areas in microbiological food safety to support food authorities:

Reference laboratory responsibility and food crisis support

Counselling in microbiological food safety

Surveillance and data exchange

Research and general improvement of competences.

NRL collaboration between Danish Veterinary and Food Administration and the National Food Institute (DTU Food)

DTU Food is appointed as NRL for Salmonella according to the EU regulation 882/2004, article 32.

The obligation as reference laboratory is shared with the public DVFA food control laboratory, Ringsted, DK – (anchored in a common history)

Accreditation according to ISO/IEC17025 and EURL proficiency testings are covered by the collaboration with the DVFA food control laboratory.

Audit of proficiency testing in private laboratories is covered by DANAK

The DVFA Food control laboratory, Ringsted

The DVFA Food control laboratory Ringsted covers the sections for:

Microbiology in food and feed

Food contaminants

Food chemistry

Plant health

Accredited by DANAK

All food control activity physical located the same place from 1st of January 2020.

The DVFA Food control laboratory, Ringsted

- NRL lab function on **Salmonella**, Campylobacter, Staphylococcus aureus, Listeria, STEC, Antibiotic resistance and virus
- Accredited Salmonella methods: ISO 6579, NMKL71, NMKL187 (MSRV), BAX-PCR
- WGS serotyping on Salmonella is accredited
- ST typing (Sequence typing not accredited)

Participation in proficiency testing 2018-19

	Matrix	Method	Result	Notes
SVA 2018	Faeces from pork	ISO 6579 (MSRV)	Good performance	23 samples
EURL 2018	Feed (chicken)	ISO 6579	Good performance	18 samples
EURL 2018	Isolates	WGS serotyping	Good performance	21 samples
EURL 2018	Boot socks with chicken faeces	ISO 6579 (MSRV)	Good performance	18 samples
EURL 2019	Flax seeds	ISO 6579	Good performance	18 samples
SVA 2019	Faeces from Bovine	ISO 6579/NMKL187	Good performance	23 samples

- SVA: Statens Veterinærmedicinska Anstalt (Sweden)
- DVFA also participated in PT from EURL/CEFAS/PHE on bivalves with good performance
- WGS serotyping was performed by using Miseq from Illumina and bioinformatics from Center for Genomic Epidemiology

DTU Food activity - Research based counselling to DVFA

DTU Food provides qualitative and quantitative risk assessments on food borne hazards.

Advice concentrates particularly on the biology of microorganisms (e.g. growth potential, inactivation parameters and disease potential, techniques for detection, and risk modelling).

The counselling focus in particular on **Salmonella**, *Campylobacter*, *Listeria*, *Yersinia*, VTEC og vira, and antibiotic resistance (e.g. ESBL og MRSA).

Counselling also deals with e.g food safety associated with food process hygiene e.g reuse of water in food processes.

DTU Food activity - surveillance and monitoring

Contribution to surveillance for microbiological hazards to provide data for qualitative and quantitative risk assessments.

Provision of statistical and epidemiological data management.

Participation in outbreak investigation of zoonotic diseases.

Coordination and publishing of the Annual Report on Zoonoses and the annual report on antibiotic resistance and consumption (DANMAP).

Contribution to reporting to EFSA and to national surveillance projects launched by the authorities.

Hosting a national strain collection from food, which is central in outbreak investigations and source tracking.

DTU Food activity - Research related to DVFA needs:

Development of detection methods for food borne bacteria, antibiotic resistance, and vira. (support to infrastructure in NRL lab)

Emerging antibiotic resistance in animal production, defining possible zoonotic link.

Development of platforms for source attribution

Support of routine WGS analysis at NRL laboratory, metagenome analysis and bioinformatic (Centre for Genomic Epidemiology)

Developing of modelling approaches to support of e.g setting of microbiological criteria, exposure assessments, and alternative heating and cooling regimens.

DTU Food activity – other EU og International activities

- DTU Food is EU-reference laboratory for antibiotic resistance and is WHO Collaborating Centre for antibiotic resistance and genomics in food borne pathogens.
- Participation in EFSA working groups and in the BioHaz panel and provides information to DVFA from this work
- EFSA Focal Point for Denmark and links to DVFA
- Supports to DVFA in Codex Alimentarius working groups

Thank You