

NORDIC COMMITTEE ON METHODS FOR FOODS

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METHOD

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NEW NMKL

TECHNICAL REPORT

Application of NIR (Near InfraRed spectroscopy) in food and feed analysis (NMKL Technical Report No. 5, 2016)

FRANKLIN GEORGSSON, THE NEW CHAIR OF NMKL

Franklin Georgsson, Matis, the new NMKL Chair, has the most extensive experience in the Nordic cooperation.

Franklin became member of the NMKL Icelandic National Committee in 1985. And only one year later, he became the Chair of the Icelandic Committee. He has also been the Chair of the Microbiological Committee of NMKL (2011-2015), and a board member of NordVal since it was established in 1999. Franklin Georgsson has been involved in other Nordic forums, such as the Nordic Working Group for Food Control, the Nordic Water Committee and the Nordic Working Group for Microbiology and Risk Assessment.

Franklin holds a Master in Food Science and Microbiology from the University of Strathclyde, Scotland (1979). For the past 35 years, Franklin has worked in several food laboratories in Iceland as a microbiologist, and from 1990 as Director of various laboratory divisions. His current position from 2007 is Director of Analysis and Consulting at Matis, Icelandic Food Research and Biotech Company Ltd.

His responsibilities include supervision of analytical services and consulting activities at Matis. The analytical services include both microbiological and chemical testing of food, pharmaceuticals and environmental samples for competent authorities and industrial companies, as well as in-house research projects at Matis. The consulting involves training of food establishment personnel in general hygiene and food handling, GMP, GHP and HACCP.

He is Associate Professor in Food Safety and Microbiology at University of Iceland.



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EVENT: SEMINAR ON MOLECULAR METHODS

TIME: Thursday 25 August 2016

PLACE: Stratos Culture and Event, Youngstorget 2a, Oslo

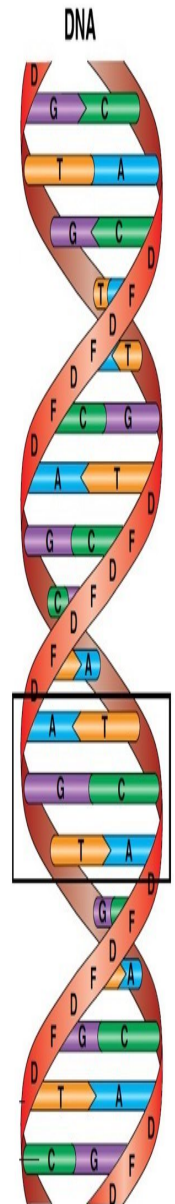
LANGUAGE: Mainly Scandinavian languages

TARGET GROUP: Food authorities, food industry and food laboratories (private and public)

BACKGROUND: It is becoming more and more common to use molecular methods (DNA methods) for the detection and characterisation of various agents, such as PCR, pulsed field gel electrophoresis (PFGE) and whole-genome sequencing. What do these methods entail? What is detected by PCR and what is the reason for the focus on whole-genome sequencing? Are there any challenges with the application of this type of methodology? How are we going to use this methodology and technology in the future? The seminar will deal with the use of molecular methods from a practical point of view, focusing on foodborne bacteria in the context of both food control and research. The aim of the seminar is to discuss the background of the methodology (technology), practical uses and challenges, and future applications.

PRELIMINARY PROGRAM (most of the presentations will be held in Norwegian):

09:00 - 10:00	Registration / Exhibition
10:00 – 10:05	Opening
10:05 – 10:45	PCR, sequencing and their future, <i>Arne Holst Jensen, NVI</i>
10:45 – 11:15	The application of PCR for detection of pathogens, <i>Gro S. Johannessen, NVI</i>
11:15 – 11:45	Characterisation of isolates, <i>Camilla Sekse, NVI</i>
11:45 – 13:00	Lunch / Exhibition
13:00 – 13:30	The use of molecular methods for tracking contamination in production, <i>Taran Skjerdal, NVI</i>
13:30 – 14:00	Salmonella PCR and use in meat control, <i>Jeffrey Hoorfar, DTU Food</i>
14:00 – 14:30	Elaboration and validation of a PCR method, <i>Saija Hallanvuo, Evira</i>
14:30 – 15:15	Coffee / Exhibition
15:15 – 15:30	Experience in the use of PCR, <i>Torunn Stalheim, Bama</i>
15:30 – 15:45	Experience in the use molecular methods (<i>from the food industry II</i>)
15:45 – 16:15	“Doodling” about the future, <i>Arne Holst Jensen & Gro S. Johannessen, NVI + others</i>
16:15 – 16:45	Presentation from exhibitors
16:45 – 17:00	Summing up



FEE: NOK 2500,-

REGISTRATION click [here](#)

Or send an email to nmkl@vetinst.no

DEADLINE: 27 June 2016

EXHIBITION / PRESENTATION

There is room for exhibition and for a couple of additional presentations.

Are you interested in exhibiting and/or giving a presentation, please contact NMKL General Secretariat on nmkl@vetinst.no.

MATIS LTD. - ICELANDIC FOOD AND BIOTECH R&D

Matis is a government-owned, independent research company, founded in 2007, following the merger of three former public research institutes. Its main activities are focused on research and development aligned to the food and biotechnology industries, as well as providing Iceland's leading analytical testing service for private companies and public authorities.



Matis employs around 100 staff in offices, laboratories or Food Innovation Centres located in cities or towns throughout Iceland. Matis' turnover in 2014 was around 11.3 million USD, of which approximately 35% came from international cooperation.

Matis' employees include many of Iceland's most competent scientists in the fields of food technology, food research and testing, as well as biotechnology; food scientists, chemists, biologists, engineers and fisheries scientists. Several employees also hold associate positions at the universities in Iceland, while many Ph.D. students and M.Sc. students conduct their research at Matis in collaboration with the industry in Iceland and abroad.

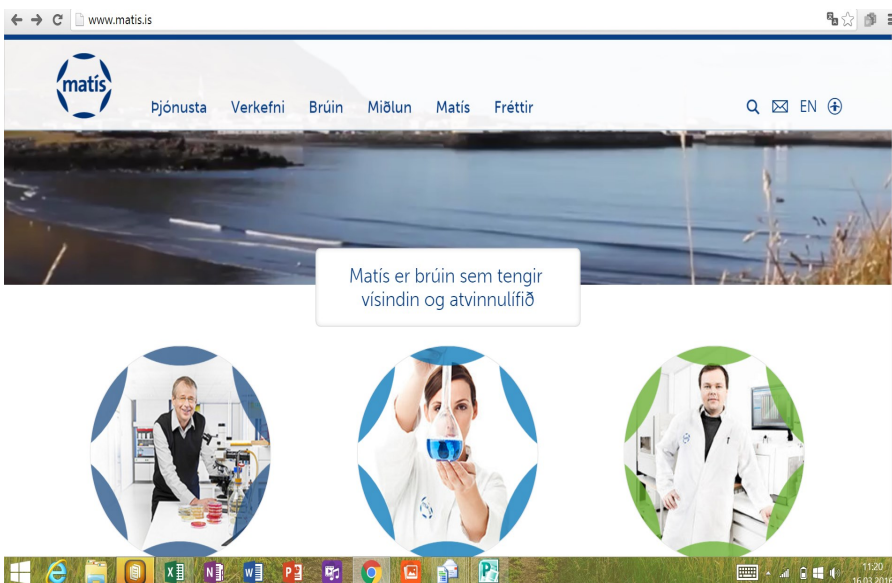


Photo: The main page of www.matis.is (to the left: Franklin Georgsson)

THE IMPORTANCE OF NMKL TO ICELAND

Iceland's participation in Nordic initiatives, such as NMKL, is very important to Iceland. This can be seen by the influence NMKL methods and quality procedures have had on Icelandic Food Laboratories. Another important aspect is how informal the communication can be between Nordic experts concerning assistance and training of individuals in Nordic laboratories. This has been of great help to a small country like Iceland in securing good laboratory practices with satisfactory validated methods.

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At the University, Franklin supervises courses that include General Microbiology, Food Microbiology, Practical Food Microbiology, Food Safety and Food Quality Management.

Franklin is actively involved internationally. In 2005-2006, he worked for the Icelandic International Development Agency (ICEIDA) as Project Manager for fisheries in Mozambique. From 2007, he lectured at the Fisheries Training Programme (FTP) of the United Nations University (UNU) in Iceland, and he has been Project Leader for workshops and seminars given in several African countries on Laboratory training, as well as Food Safety and Quality Management.

Franklin is also active nationally, and has been involved in a number of committees such as the Toxicological Committee, Food Additives Committee, Icelandic Food Council, Antibiotics and Antibiotic Resistance Committee and Advisory Committee on Genetically Modified Organisms.

EVENT: WORKSHOP ON NATIONAL REFERENCE LABORATORIES (NRL) AND THE COMING CONTROL REGULATION 882 REGARDING NRL

Date: 8 November 2016

Place: Norwegian Veterinary Institute/
Norwegian Food Safety Authority

Language: English

Registration to nmkl@vetinst.no

The workshop is sponsored by EK-FJLS (Livs) and is therefore free of charge.

Aim of the workshop

To discuss the organisation of NRL, and the duties and requirements imposed by the current and the new Control Regulation 882 on NRL and food analyses.

Experiences from NRL - How fulfil the requirements and perform the tasks in an effective way? As the number of laboratories has decreased, and the scopes of the NRL are about to be widened, cooperation will be increasingly important. How can we facilitate Nordic cooperation and networking in these areas?

Target group

Nordic food authorities and NRL representatives.

Project group

Denmark: Arne Højgaard Jensen (arho@fvst.dk)

Finland: Mirja Hokkanen (Mirja.Hokkanen@evira.fi)

Iceland: Hrönn Ólína Jörundsdóttir (hronn@matis.is)

Norway: Ingveig Olberg

(ingveig.olberg@mattilsynet.no),

Hilde Skår Norli (hilde.skaar-norli@vetinst.no)

Sweden: Anna Tornkvist (anna.tornkvist@slv.se)

Draft Program

10:00 - 10:10 Welcome – introduction (incl. Golden Standard) *Hilde Skår Norli, NMKL /NVI*

10:10- 10:40 Main changes in the Control Directive 882 regarding NRL - What are the consequences for the authorities regarding NRL, and what are the implications for the NRL?
Keren Bar-Yaacov, NFSA

10:40 - 12:00 Designation and funding of NRL, experience with NRL (pros and cons), national network and supervision of NRL

(approx. 5 x 15 min) Presentations from representatives of the food control authorities in the Nordic countries

12:00 - 13:00 Lunch

13:00 - 13:30 Experiences from NRL – How to perform the tasks in an effective way? *Frans Ulberth, JRC, EU Commissions Laboratory*

13:30 - 13:40 Introduction to working groups

13:40 - 13:50 Coffee break and division into working groups – microbiology / chemistry /administrative

13:50 - 15:15 Working groups:

Info from a couple of NRL from each country – their experiences, pros and cons

Experience from NRL - How to fulfil requirements and perform tasks in an effective way?

What are the future challenges in food analysis?

Exchanging ideas and information

Is there a need for a Nordic network?

Is there a need for cooperation for instance on PT schemes, method development?

If needed, how can we facilitate cooperation?

Is there a need for a “Golden Standard”?

15:15 – 16:00 Conclusions of the working groups

16:00 – 16:15 Summing up and closure

NEW NMKL METHOD: *SALMONELLA*. DETECTION IN FOODS, ANIMAL FAECES AND ENVIRONMENTAL MATERIALS FROM PRIMARY ANIMAL PRODUCTION USING MSR.V.

(NMKL 187, 2. ED., 2016)

This method describes the detection of motile *Salmonella* in foods, animal faeces and other environmental materials from primary animal production. The method is applicable to all kinds of foods.

For the most efficient detection of *Salmonella*, four separate steps are required; pre-enrichment, selective enrichment, plating out and confirmation. These steps are necessary because *Salmonella* often occurs in low numbers, sometimes sublethally injured, and often in the presence of high numbers of other bacteria of the *Enterobacteriaceae* family.

The method differs from NMKL Method No. 71, in that the selective enrichment broth (Rappaport-Vassiliadis soy peptone broth) has been substituted by a semi-solid enrichment media: Modified Semi-solid Rappaport-Vassiliadis, MSR.V. This medium is intended for the detection of motile *Salmonella*, and is less appropriate for the detection of non-motile *Salmonella*. If (from experience) non-motile *Salmonella* or *Salmonella* exhibiting poor motility are expected, it is advised to analyse the non-swarming growth on MSR.V further, and/or to use a liquid-selective enrichment in addition to MSR.V.

The method has been updated to include information about faecal samples and materials from primary animal production.

The title and scope of the method have been changed from “*Salmonella*. Detection in foods, faeces and materials from primary animal production using MSR.V” to “*Salmonella*. Detection in foods, **animal** faeces and **environmental** materials from primary animal production using MSR.V”.

The main changes in the procedure of the method, are:

- Clarification of plating on a second selective plate complementary to XLD agar.
- Information about the final concentration of Novobiocin in the MSR.V medium.
- New paragraphs on pre-enrichment for environmental samples from primary animal production, faecal samples and swab samples
- Changes in incubation times
- The list of references is updated.



Vala Friðriksdóttir, Institute for Experimental Pathology, University of Iceland, has elaborated this edition of NMKL 187.

She has got assistance from the following contact persons:

Denmark: Marianne Halberg Larsen

Finland: Tuula Johansson

Norway: Kirsti Sæbø and

Gro S. Johannessen

Sweden: Lise-Lotte Fernström

CORRECTION TO NMKL NEWSLETTER No. 91, 2015

In the previous issue of the NMKL Newsletter, the NMKL Procedure “**Control charts and control materials in internal quality control in food chemical laboratories**” was announced as NMKL Procedure No. 3, 2015. However, the procedure was not ready before 2016, and hence is published as NMKL Procedure No. 3, 2016.

NEW NMKL TECHNICAL REPORT: APPLICATION OF NIR (NEAR INFRARED SPECTROSCOPY) IN FOOD AND FEED ANALYSIS (NMKL TECHNICAL REPORT NO. 5, 2016)

NIR is a powerful technique which has won lots of appreciation during the last 50 years. Not least in the field of food and feed analysis, and quality control. NIR applied to these fields is normally a secondary method dependent on reliable (wet) analyses and advanced application of chemometrics. And, obviously, the success of NIR is accompanied by the development and accessibility of inexpensive computational power. This report is aimed at the industry and other interested parties considering a possible investment in NIR technique. It focusses on a few key issues that have to be addressed in the process of making this decision. The report does not cover detailed descriptions on how to use the technique, but rather on which questions that ask when introducing NIR in a new field of application. All instruments come with more or less advanced software packages for calibration and validation. The NMKL report points out important issues to be considered and dealt with. We have also included some references to literature which we found to be of great value.

For the working group.
Björg, Elina & Erik

NMKL Technical Reports are available
free of charge at www.nmkl.org
under "Publications".



Erik Nordkvist

The report is elaborated by

- Erik Nordkvist, National Veterinary Institute, Sweden (Project Leader),
- Björg Narum, Nofima AS, Norway and
- Elina Sievilainen, Evira, Finland

PRICE LIST NMKL PUBLICATIONS

Online subscription (access to the publications at any time) for 1-3 users per lab unit:

- NMKL Methods: NOK 2500 / EUR 300 (First-time access to the compiled collection: NOK 5000 / EUR 600)
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- NMKL Procedures: NOK 400 / EUR 50 (≤ 30 pages) and NOK 600 / EUR 70 (> 30 pages)

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Discounts

- For educational purposes; 25% discount.

Publications may be ordered on NMKL's Web page or by e-mail to nmkl@vetinst.no

Available NMKL Procedures

- No 1, 2nd. Ed. 2005 Calibration and performance checking of laboratory balances
- No 3, 2nd. Ed., 2016 Control charts and control materials in internal quality control in food chemical laboratories
- No 4, 3rd. Ed., 2009 Validation of chemical analytical methods
- No 5, 2nd. Ed. 2003 Estimation and expression of measurement uncertainty in chemical analysis
- No 6, 1998, (Adm 2002, Adm 2006) Generelle retningslinier for kvalitetssikring af sensoriske laboratorier (only available in Danish and Finnish)
- No 7, 1998 Checking of UV/VIS spectrophotometers
- No 8, 4th. Ed. 2008 Measurement of uncertainty in quantitative microbiological examination of foods
- No 9, 2nd. Ed., 2007 Evaluation of method bias using certified reference materials
- No 10, 2001 Control of microbiological media
- No 11, 2nd. Ed. 2010 Procedure for sensory analysis of drinking water
- No 12, 2nd. Ed., 2014 Guide on sampling for analysis of foods
- No 13, 2003 Volumetric control
- No 14, 2004 SENSVAL: Guidelines for internal control in sensory analysis laboratories
- No 16, 2005 (2007) Sensory quality control
- No 17, 2006 Guidelines for requirement specifications for food analyses
- No 18, 2006 The use of reference materials, reference strains and control charts in a food microbiological laboratory
- No 19, 2007 Guidelines for sensorial Analysis of Food containers/packages
- No 20, 2007 Evaluation of results from qualitative methods
- No 21, 2008 Guide for sensory analysis of fish and shellfish
- No 22, 2008 Considerations regarding evaluation of immunochemical test kits for food analysis
- No 23, 2008 Guide on quality assurance in microbiological laboratories
- No 24, 2010 Guidelines for quality assurance for food chemical laboratories
- No 25, 2014 Recovery information in analytical measurement
- No 26, 2012 Control and internal calibration of thermometers and temperature control on microbiological laboratories
- No 27, 2013 Measurement uncertainty in sensory analysis
- No 28, 2014 Guidelines for reporting sensory data
- No 29, 2014 Guidelines for sensory analysis of meat and meat products
- No 30, 2014 Statistical evaluation of results from quantitative microbiological methods