

Newsletter for The Nordic Committee on Food Analysis

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The 58th NMKL Annual Meeting in Akureyri, Iceland, 28 - 31 August 2004

The Icelandic national committee of NMKL, chaired by Franklín Georgsson from the Environment and Food Agency of Iceland, had invited the members of NMKL to convene the 58th Annual Meeting in Akureyri – a charming city in the north of Iceland.



Franklin Georgsson, the chair of the Icelandic national committee, welcomes the members to Akureyri.

About 55 members participated. The members of NMKL are appointed experts within food analysis, who put considerable effort, both during and outside office hours, into providing useful methods of analysis and procedures.

Cooperating partners:

The Annual Meeting started off with updates on NMKL's work in the past period, as well as information from NMKL's cooperating partners: Nordic Council of Ministers (NMR), EK-Livs and its working groups, NordVal, the European Standardisation Organization, CEN, and the International Dairy Federation (IDF).



Bente Stærk, NMR



Sven Qvist, NordVal

The referee of the year:

As in previous years, NMKL had invited a referee to present his/her work at the Annual Meeting. Christina Normark of the National Food Administration, Uppsala, has made a great effort for the Nordic cooperation in arranging the collaborative study of NMKL Method No. 164 for the detection of *Escherichia coli* O157. Ms Normark presented the study, which has been successful. A new edition of the method, in which the results of the study are included, will soon be available.



The referee of the year: Christina Normark, National Food Administration, Uppsala.

A great deal of the work at the NMKL Annual Meeting is conducted in the sub committees for chemistry, microbiology and sensory analysis.

Dr. Maija Hatakka, Finland, has stepped down as the chair of the microbiological committee, as she is now working for the European commission DG-Sanco in Brussels. Laboratory Manager Lis Nielsen of the Regional Veterinary Food Control Authority, Vejle, Denmark, has taken over the chairmanship of the committee.

The chair and secretary general of NMKL, as well as the chairs of the different sub committees, are all elected for a 4 year period with the possibility of being re-elected. Halina Agerhem, was re-elected for a new 4 year period as the chair of the sensory committee.

Managing Director
Ole Bjørn Jensen,
Scanpharm AS, Denmark;
Chair of NMKL and of
sub committee 1: The
executive committee.
(End of term: 2005)



Laboratory Manager Lis
Nielsen, Regional Veteri-
nary Food Control Au-
thority, Vejle, Denmark;
Newly elected chair of
sub committee 2: Micro-
biology.
(End of term: 2008)



Prof. Kåre
Julshamn, Na-
tional Institute
of Nutrition and
Seafood Re-
search;
Chair of sub
committee 3:
Chemistry.
(End of term:
2005)



Dr. Halina Ager-
hem, Kristian-
stad University;
Chair of sub
committee 4:
Sensory analysis.
(End of term:
2008)



Hilde Skår
Norli,
National
Veterinary
Institute;
NMKL
secretary
general.
(End of
term: 2005)

NMKL's working programme - Microbiology

Drafts expected:	<ul style="list-style-type: none"> • Cryptosporidium and Giardia. Detection in drinking water. • Pathogenic <i>Vibrio</i> species. Detection and determination in foods. • Toxin-producing <i>Penicillium verrucosum</i>. Determination in foods and feeds. • Photobacterium phosphoreum. • Specific non-O157 serotypes of <i>E.coli</i>. • Aerobic microorganisms. Determination in foods. • Clostridia, sulphite-reducing. Determination in foods.
Drafts for approval in the national committees:	<ul style="list-style-type: none"> • Lactic acid bacteria. Determination in foods. • <i>Thermotolerant Campylobacter</i> in foods and drinking water.
Approved methods for collaborative studies:	<ul style="list-style-type: none"> • <i>Clostridium perfringens</i>. Determination in foods and feeds. • <i>Listeria monocytogenes</i>. Detection in foods and feeds. • <i>Yersinia enterocolitica</i>. Detection in foods and feeds.
Methods approved for publishing:	<ul style="list-style-type: none"> • Thermotolerant coliform bacteria. Determination in foods. • <i>Fusarium</i>. Determination in foods and feedstuffs. • Mould and yeasts. Determination in foods. • <i>Escherichia coli</i> O157. Detection in foods and feeds.
New topic (no referee appointed yet):	<ul style="list-style-type: none"> • Salmonella using MSRV method.
Other projects:	<ul style="list-style-type: none"> • NMKL procedure for the use of control charts and reference materials/strains within microbiological analysis. • Revision of Report No. 5: Guide on quality assurance in microbiological food laboratories.

NMKL's working programme - Chemistry

Drafts expected:	<ul style="list-style-type: none"> • Vitamin K1 and K2. Determination in foods using HPLC. • PAH. Determination in foods. • Acrylamide. Determination in foods. • Paralytic Shellfish Poisoning toxins. Determination in shellfish using HPLC. • Solids, total (water). Gravimetric determination in milk and milk products. • Acidity, titratable. Determination in milk and cream.
Approved methods for collaborative studies:	<ul style="list-style-type: none"> • Nitrite and nitrate. Determination in meat products, brines and salt mixtures. • Fat. Determination of content in milk using the Gerber method. • Nitrate/ nitrite. Enzymatic determination in dairy products.
Study report for approval:	<ul style="list-style-type: none"> • Fat. Determination in meat and meat products by Gerber. • Biogenic amines. HPLC determination in foods.
Methods approved for publishing:	<ul style="list-style-type: none"> • Ash. Gravimetric determination in foods. • pH. Determination in foods. • Salt (sodium). Determination in foods.
New topics (no ++study director appointed yet):	<ul style="list-style-type: none"> • Protein methods with lower detection limits than NMKL Method No.176. • Homogenisation of foods. • Fatty acids. Determination in foods.
Other projects:	<ul style="list-style-type: none"> • Validation of chemical methods. • Evaluation of collaborative study results of qualitative chemical methods. • Evaluation of results derived from the analysis of certified reference materials. • Calibration of NIR and IR instruments. (No project leader appointed yet.) • Guide for NMKL referees within chemistry.
Workshop /courses:	<ul style="list-style-type: none"> • Courses in estimation and expression of measurement uncertainty in chemical analysis (in Denmark, Finland, Iceland, Norway and Sweden). • Workshop on bromic flame-retardants.

NMKL's working programme - Sensory analysis

Method/procedure drafts expected:	<ul style="list-style-type: none"> • NMKL Procedure X: Guideline on sensory evaluation of food packing. • NMKL Procedure X: Sensory analysis of fish and shellfish
Drafts for approval:	<ul style="list-style-type: none"> • NMKL Method X: Method on sensory quality control.
Study report for approval:	<ul style="list-style-type: none"> • Method on sensory quality control of drinking water

NMKL's working programme - Topics of interest for all "spheres"

Procedure drafts expected:	<ul style="list-style-type: none"> • Performance check and in-house calibration of analytical balances. • Customers' specification of analysis requirements.
Courses/workshops:	<ul style="list-style-type: none"> • Courses in sampling + education of sampling personnel.
Other networks:	<ul style="list-style-type: none"> • Work / consultant group within statistics. • Nordic expert laboratory network

NMKL welcomes any input or comments on the NMKL newsletter and on NMKL's working programme.

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Tel: +46 64870046, e-post: nmkl@vetinst.no
Chairman of NMKL: Ole Bjørn Jensen, Scanpharm A/S. Denmark.

News on NMKL methods:

New edition of NMKL Method No. 68:

Enterococcus. Determination in foods and feeds.

NMKL Method No. 68, 3rd Ed.: "*Enterococcus*. Determination in foods and feed" was distributed in November 2003. However, it became evident that the national committees' comments regarding temperature intervals and safety precautions for the use of sodium azide, which were conditional for the method's approval, were not taken into consideration.

Hence, a new edition of the method is being elaborated where the temperature intervals are harmonised according to the NMKL guidelines, and the necessary safety precautions are included.

Corrections to

NMKL Method No. 96, 3rd Ed., 2003: Bacterial Examinations in Fresh and Frozen Seafood.

In March 2003, the third edition of NMKL Method No. 96 was published. Regrettably, there is an error in chap. 5.2.1.2, in the description of the preparation of the L-cysteine solution. A corrigendum is therefore distributed to the subscribers of NMKL methods, with the follow content:

The L-cysteine solution should be prepared as follows:

L-cysteine	5.0 g
Distilled water	100 ml

Dissolve the L-cysteine in water by mixing. Sterilize by filtration. In order to make the final medium, add 8 ml of the L-cysteine solution to the basic medium (final concentration of L-cysteine is 0.04%). An equivalent ready-made medium is commercially available.

The following procedures will shortly be available in English:

- NMKL Procedure No. 13: Volumetric Control.
- NMKL Procedure No. 14: SENSVAL: Guidelines for internal control in sensory analysis laboratories.
- NMKL Procedure No. 15: Temperature control in microbiological laboratories.

Comparison of NMKL Method No. 96 (MPN method) and NMKL Method No. 125 (plate method) for the detection of thermotolerant coliforms in fresh and frozen sea foods.

In December 2003, Gro Johannessen (National Veterinary Institute, NVI), Bjørn Tore Lunestad (National Institute of Nutrition and Seafood Research, NIFES), and Kofitsyo S Cudjoe (NVI) compared NMKL Method No. 96 ("Bacterial Examinations in Fresh and Frozen Seafood.") and NMKL Method No. 125 ("Thermotolerant coliform bacteria and *Escherichia coli*. Enumeration in foods and feeds. Draft, 2002") in order to check if the methods yield equivalent results for thermotolerant coliform bacteria in fresh and frozen seafood. The aim was to generate data to support and justify the inclusion of the plate method from NMKL 125 into NMKL 96, as an alternative to the MPN method.

Samples and methods

NVI and NIFES analysed a total of 100 samples (50 each), categorised as follows:

- 5 samples of frozen and fresh fish inoculated with *E. coli*.
- 5 samples of frozen and fresh fish inoculated with seawater.
- 20 samples of various fresh fish and fresh fish products.
- 20 samples of various frozen fish and frozen fish products.

All the samples were analysed for thermotolerant coliform bacteria according to the plate method (NMKL 125) and the MPN method (NMKL 96).

Results and Discussions

Theoretically, the MPN method by virtue of multiple replications and dilutions, has a better sensitivity (<3 cfu/g) than the direct plating method (<10 cfu/g). This is also reflected in this comparison. The plate assays generally give higher numbers of thermotolerant coliforms than the MPN assay (Table 1).

Three fresh natural samples were identified as positive by the MPN method, but not by the plate method. However, this observation was not surprising as the levels detected were low; from 3 - 9 cfu/g, i.e. below the detection limit of the plate assay. The results where MPN intervals correspond with direct counts, indicate a high level of agreement between the two methods (see Table 2). This is also shown statistically by Fisher's test. The test gave a *p* value <0.0001, thereby rejecting the hypotheses that the methods give significantly different results. The plate method requires more initial work, but with experience, appears to be faster and easier to perform, thus reducing the workload in the long run.

Conclusion

This limited evaluation has not detected any significant discrepancy between the use of the plate method and the MPN method for detecting thermotolerant coliforms in seafood. The study therefore supports the scope of both NMKL methods (96 and 125).

Table 1. Summary of the results of the comparison between NMKL Method No. 96 (the MPN method) and NMKL Method No. 125 (the plate method) for the determination of thermotolerant coliforms in fresh and frozen seafood. Results are given as mean bacterial count/g.

Samples	Artificial/Natural	No. of samples	Thermotolerant coliforms detected by:	
			MPN method	Plate Method
NIFES – Frozen	<i>E. coli</i>	3	>1100*	5200-6600
NIFES – Frozen	Natural	20	<3	<10
NIFES – Frozen	Seawater	3	4-7	380 – 650
NIFES – Fresh	<i>E. coli</i>	3	>1100*	6200
NIFES – Fresh	Natural	18	<3	<10
NIFES – Fresh	Seawater	3	4-7	380 – 650
NVI – Fresh	<i>E. coli</i>	2	43 –150	110 – 150
NVI – Fresh	Natural	17	<3	<10
NVI – Fresh	Natural	3	<3	<10
NVI – Fresh	Seawater	3	4	<10
NVI – Frozen	<i>E. coli</i>	2	93 –150	150
NVI – Frozen	Natural	19	<3	<10
NVI – Frozen	Natural	1	<3	20
NVI – Frozen	Seawater	3	4-9	<10

*insufficient dilution to enable full enumeration.

Table 2. The overall qualitative results on all samples tested by both methods.

	Results	MPN		Total
		+	-	
Plating	+	17	1	18
	-	4	78	82
	Total	21	79	100

NMKL presents:
Umhverfisstofnun, UST - The Environment
and Food Agency of Iceland, EFA

The Environment and Food Agency (EFA) operates under the direction of the Ministry for the Environment. The Agency began work on January 1, 2003, consolidating the duties of previous agencies in matters of health, food, the environment, nature and hunting, including the Reindeer Committee and the Wild Animal Consultancy.

The Agency operates according to Act 90 of 2002 concerning the Environment and Food Agency. Its role is to promote public welfare by helping to ensure a healthy environment, safe consumer goods, and the protection as well as sustainable use of Iceland's natural resources.

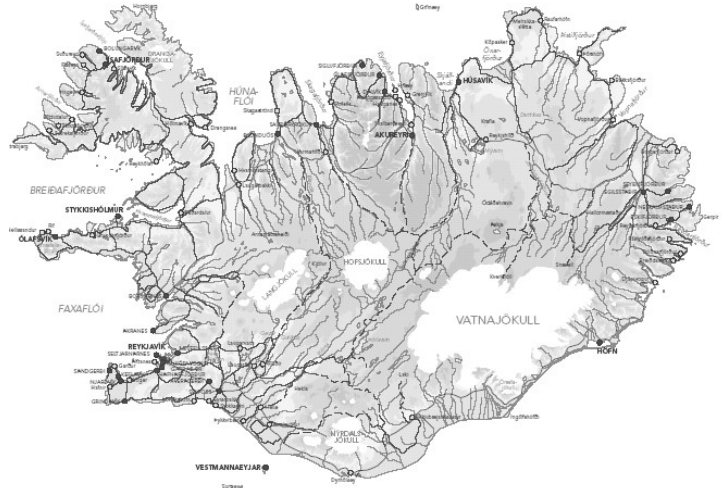


Organization

The Environment and Food Agency has 81 staff members in 7 divisions:

- Food Division
- Environmental Regulation
- Environmental Supervision
- Nature Conservation
- Finance and Human Resources
- The Laboratory
- Wildlife Management Division

The Head office and the Laboratory are situated in Reykjavik, but the Wildlife Management Division is based in Akureyri and Egilsstaðir. The agency also employs rangers who operate in nature conservation areas throughout the country.

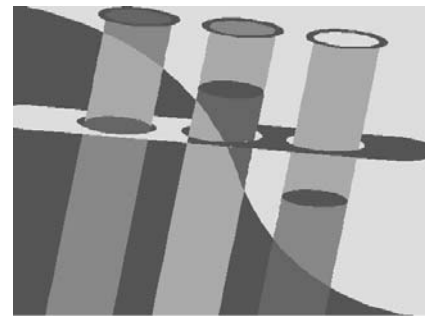


The main food related objectives are:

- To ensure safe and high quality food, and thereby protecting the consumers.
- To ensure that food companies take responsibility for the manufacture and distribution of food products.
- To ensure that consumers receive all necessary information concerning the safety and quality of food products on the market.
- To promote coordinated inspections throughout the country.

The Laboratory

The laboratory is a financially independent division of EFA. The number of employees is 12, and includes three food scientists, a biologist, a chemist, a microbiologist and 6 laboratory assistants. The principal clients are other divisions of EFA, local health and environmental authorities, The Chief Veterinary Officer of Iceland, food companies, pharmaceutical companies, private individuals and scientific research groups. The laboratory is also involved in several domestic and international research projects.



Principal objectives

- Provide accredited analytical services using validated methods tested by international organizations in the field of research & development.
- Fulfill the demands of EFA and local control authorities for analytical services
- Provide EFA and other government agencies with expert services and consultancy on matters related to analysis and risk assessment.

Main assignments

- Microbiological and chemical analysis of foods, water, pharmaceuticals, feed and environmental samples.
- Analysis of pesticides in fruit and vegetables.
- Microbiological research projects – food pathogens, fermentation, shelf life, sanitation and disinfection procedures.
- Development and collaborative testing of analytical methods.
- Maintenance of records concerning food-borne infections and intoxications.
- Provide expert opinions on legislation, regulation, microbiological criteria, risk assessment, education and information material etc.
- Participate in committee work and international cooperation.



EFA is responsible for the operation of The Icelandic National committee of NMKL. The Ministry for the Environment appoints the committee, and chairman Franklin Georgsson and secretary Margret Geirsdottir both come from The Laboratory Division of EFA.

More information on EFA can be obtained from the web page: www.ust.is

New web page on www.nmkl.org



Please visit the

- Web shop, where you can search for, read about and order methods and procedures
- Web page for information about courses /workshops and the working programme
- Links for organizers of proficiency testing schemes and for cooperating partners
- The database of Nordic expert laboratories, where it is possible to search for parameters and find out who to contact for possible questions
- NordVal site for information about approved proprietary methods /test kits
- Web page for information about how to register as an NMKL partner.

Chairpersons for the national committees:

Denmark: Managing Director Ole Bjørn Jensen, Scanpharm,
e-mail: obj@scanpharm.dk

Finland: Special planner Harriet Wallin,
National Food Agency
e-mail: harriet.wallin@nfa.fi

Iceland: Laboratory manager Franklín Georgsson, EFA, e-mail: franklin@ust.is

Norway: Associate Professor Tone Asp,
The Norwegian School of Veterinary Science, e-mail: tone.asp@veths.no

Sweden: Laboratory Manager Ulla Edberg,
National Food Administration, e-mail: uled@slv.se

Are you wondering how you can become a member of NMKL?

The members of NMKL are appointed experts. The food authorities in each of the Nordic countries appoint them. If you would like to become a member, feel free to contact the chairperson of your country's national committee (see the box on the left).

Reminder!

Courses in estimation and expression of measurement uncertainty in chemical analysis

Deadline for registration: 1 November 2004.

Dates and locations:

Monday, 15 November at the National Food Administration, Uppsala, Sweden.
Thursday, 18 November at EELA, Helsinki, Finland (to be held in English).
Monday, 22 November at the Danish Institute for Food and Veterinary Research, Søborg, Denmark.
Thursday, 25 November at the National Veterinary Institute, Oslo, Norway.
Monday, 29 November at the Environment and Food Agency, Reykjavik, Iceland (to be held in English).

Joakim Engman of the National Food Administration, Uppsala, Sweden, author NMKL Procedure No. 5: "Estimation and expression of measurement uncertainty in chemical analysis", will be the course lecturer.

Content:

Theory and practical aspects will be covered. The courses will include training in the different steps of calculating the measurement uncertainty required for accreditation according to ISO 17025 such as:

- Specifying the measures
- Identifying sources of uncertainty
- Simplifying by using existing information
- Quantifying components
- Converting all components to standard uncertainty
- Calculating standard uncertainty of repeated measurements
- Recommendations for the expression of the estimated measurement uncertainty.

Examples and exercises using basic statistics will be included. Furthermore, the use of an Excel spreadsheet for simplifying the calculations will be demonstrated. The main focus will, however, be on how to best utilize the results from validation studies in estimating the measurement uncertainty.

Course fee: NOK 1200.

Please register to the NMKL general secretariat: e-mail: nmkl@vetinst.no, Fax: +47 23216202



Marita Poulsen 1954 - 2004

It was with great sorrow that we received the tragic news that Marita Poulsen passed away in June, only 49 years old. For about a year, she had been struggling against a serious illness.

Marita was a pharmacist and worked at Heilsufrøðiliga Starvsstovan (Food, Environmental and Veterinary Administration) on the Faeroe Islands, as manager of the department for chemical laboratories. She had the main responsibility for ensuring that the administration's laboratory activities fulfilled international requirements. During the 6 years she was a member of NMKL, in her own quiet, modest and very thorough way, Marita made a significant effort in the Nordic cooperation in elaborating analytical methods and procedures within quality assurance for food laboratories.

Many members of NMKL will especially remember Marita for the annual meeting on the Faeroe Islands in 1995, where she was the main organizer. She had a plan B in every situation, ensuring that all the participants had a wonderful experience despite the awful weather. In April 2003, just before Marita received her diagnosis, she arranged a meeting for the Danish National Committee on the Faeroe Islands. Again, Marita managed to make sure the meeting was a great social and technical success.

Our warmest thoughts are with Marita's husband, their two kids and to her colleagues.
May her sole rest in peace.

NMKL's Danish National committee
