NMKL Newsletter
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March 2005

# Newsletter for
# The Nordic Committee on Food Analysis

Content:



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## NMKL is arranging courses in SAMPLING of foods and feeds in all the Nordic countries

The courses are intended for sampling personnel, food inspectors and others involved in sampling of foods and feeds.

**Contents:**
The courses in sampling of foods and feeds include definitions, directives concerning sampling, sampling plans, pragmatic sampling, guidance in use of sampling equipment, accreditation of sampling procedures etc. Vendors of sampling equipment are invited to exhibit their products. In Denmark, Iceland, Norway and Sweden the course will run over 2 days. You may attend only one day, but in order to receive the course certificate, you need to attend the entire course and also to complete a questionnaire regarding sampling. In Finland, one-day courses are arranged in connection with "regional education" days arranged by the National Food Agency of Finland. NMKL Procedure No 12 (2002) "Guide on Sampling of Analysis of Foods" will be essential in the courses.

**Time and place:**
Sweden: 12 – 13 April 2005, National Food Administration, Uppsala
Denmark: 19 – 20 April 2005, Munkebjerg Hotel, Vejle
Norway: 26 – 27 April 2005, Rica Hotel Gardermoen
Iceland: 10 - 11 Mai 2005, Hotel Loftleiðir, Reykjavik
Finland: 19 September, 21 October and 18 November

**Languages:**
In Sweden, Denmark and Norway the courses will be held in Scandinavian languages. In Iceland the language will be English. In Finland the courses will be held in Finnish.

**Course programme and registration:**
For information on the programme and registration for the English speaking course (in Iceland), see page 4. The National Food Agency of Finland will provide information about the courses in Finland, and information about the Scandinavian courses are available on the NMKL home page.

**Organiser:**
The courses are arranged as an NMKL project with financial support from the Nordic Committee of Senior Officials for Food Issues (EK-Livs). The following persons have participated in the project:

Denmark: Niels Ladefoged Nielsen, Danish Veterinary and Food Administration
Finland: Raija Törma-Oksanen, National Food Agency
Iceland: Laufey Karlsdóttir, Syni Laboratory Service
Norway: Astrid Nordbotten, Norwegian Food Control Authority, Gudrun Q. Rognerud
Sweden: Göran Engström, Per Norberg (project leader), National Food Administration
NMKL Secretary General: Hilde Skår Norli

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

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# New NMKL methods

## NMKL method No. 179, 2005:
## pH. Determination in foods.

Karl Olav Gjerstad, previously employed at the Municipal Food Control Authority of Midt-Rogaland (Norway), has elaborated and arranged a collaborative study on a method for the determination of pH in foods. To assist Gjerstad the following experts were appointed by the national committees: Jan Rud Andersen, Danish Meat (Denmark), Riitta Kivikari, University of Helsingfors (Finland), Elisabet Sólbergsdóttir, University of Iceland (Iceland), Anna-Maria Thim, National Food Administration (Sweden). EK-Livs supported the project financially.

As part of the project, a number of international standards for the determination of pH in different foodstuffs were studied, retailers of pH electrodes were contacted, and experiences from several Nordic laboratories were considered. In the pH methods of interest, various recommendations were found regarding the dilution of samples with low water content, including different dilutions, degrees of dilution, as well as different recommendations for temperatures of the samples when measuring. In order to obtain more knowledge about the critical steps, the project group conducted a study with five participating Nordic laboratories. The results of this study were then considered when elaborating the final method, which was validated collaboratively.

Thirteen laboratories participated in the study which included 6 different materials presented as blind duplicates in the pH range of 3.6 – 6.3. Statistical analysis of the results shows that the method may be considered suitable for measuring pH in foodstuffs in the studied range.

NMKL would like to thank Karl Olav Gjerstad for elaborating the method and organising the collaborative study. Furthermore, NMKL would like to extend its gratitude to the other project members and to all the laboratories which participated in the study.

## Please note … An error in method No 174

Correction of NMKL method no 174, 2nd ed., 2002:
*Shigella* spp. PCR method for detection in foods.

Roland Lindqvist, National Food Administration (Sweden), who was referee of the method, has informed that the sequence for one of the PCR primers is wrong. In method No 174, 2nd ed., 2002 chap. 5.7 the following sequence is given for ipaH1:
5’ CGG CAA CAG ACT ACA GGA CT 3’

The correct sequence of ipaH 1 should be:
**5’ CGG CAA CAG ACT ACA GGA ACT A3’**

## NMKL method No. 180, 2005:
## Sodium. Determination in Foodstuffs by Flame Atomic Absorption Spectrometry after Microwave Digestion.

Limiting the intake of salt is a prioritised nutritional aim in the Nordic countries. From a nutritional point of view it is particularly the content of sodium that should be reduced/restricted. Previous projects conducted at Norwegian municipal food control laboratories on the salt content in food, revealed that a number of different analytical methods were in use, and that it was difficult to compare the obtained results. There was obviously a need for a collaboratively validated method.

A project group was established. Kåre Julshamn, National Institute of Nutrition and Seafood Research (NIFES) (Norway), was the leader/referee. The national committees appointed the following experts to assist Julshamn in this work: Jens Jørgen Sloth, Danish Institute for Food and Veterinary Research (DFVF), Riitta Kivikari, University of Helsingfors, Heida Pálmadóttir, Icelandic Fisheries Laboratories, Frank Lundby, Matforsk AS – Norwegian Food Research Institute, Martin Riebe, Swedish Nestle. EK-Livs supported the project financially.

Prior to the elaboration and collaborative study of the final method, two preliminary studies were arranged. The participants of these studies were the project members and their laboratories. In these preliminary studies the sodium content was determined in 30 sample solutions and 4 homogenised dry samples. The laboratories used their own methods. The following principles were used: Flame atomic emission spectrometry, flame atomic absorption spectrometry, ion selective electrode for sodium and inductive coupled plasma atom emission spectroscopy. According to the results, the analysis techniques did not yield different results except for the ion selective electrode, which had a higher determination limit than the other methods.

At the NMKL annual meeting in 2002, NMKL decided that the NMKL method for sodium should be based on atomic absorption spectrometry after microwave digestion. Nine laboratories participated in the collaborative study of the sodium method. The method was tested on six foodstuffs: (broccoli, carrot, bread, saithe fillet, pork, and cheese) with sodium concentrations ranging from 1480-8260 mg/kg. The materials were presented to the participants in the study as blind duplicates. The repeatability relative standard deviations ($RSD_r$) for sodium varied between 1.9% to 6.0%. The reproducibility relative standard deviations ($RSD_R$) ranged from 4.2% to 6.9%. The HorRat values varied between 0.9 and 1.6. HorRat values less than 2 indicate that the method’s performance is satisfactory.

NMKL would like to thank Kåre Julshamn and NIFES for elaborating the method and organising the collaborative study. Furthermore, NMKL would like to extend their thanks to the other project members and to all the laboratories which participated in the study.

## NMKL method No. 181, 2005:
## Fat. Determination in meat and meat products using a butyrometer according to Gerber.

Karl Olav Gjerstad, previously employed at the Municipal Food Control Authority of Midt-Rogaland (Norway), has elaborated and arranged a collaborative study on fat determination in meat and meat products using a butyrometer according to Gerber. In the elaboration Gjerstad has been assisted by the following Nordic experts: Torben Leth, DFVF (Denmark), Ingrid Aminoff, City of Helsinki, Environment Centre, (Finland), Nína Kristinsdóttir, Norðlenska (Iceland), Sören Wretling, National Food Administration (Sweden).

There was a need for a collaboratively validated method on the determination of fat in meat and meat products using a butyrometric method according to Gerber, as the principle is used in several laboratories.

Prior to the full study in 2002, a mini study was conducted in August 2001 including four laboratories. The NMKL method was followed in both studies. The lowest validated level was 3%. Thirteen Nordic laboratories participated in the study. The laboratories each analysed 10 samples consisting of meat products with fat contents ranging from 3 to 22%. Except for the lowest level, 3%, the results were satisfactory.

NMKL would again like to thank Karl Olav Gjerstad for elaborating the method and organising the collaborative study. Furthermore, NMKL would like to extend their gratitude to the other project members and to all the laboratories which participated in the study.

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## Withdrawal of NMKL methods.

The national committees of NMKL have resolved to withdraw the following methods. This means that these methods should no longer be referred to as NMKL methods.

- 112, 1985: Arsenic. Determination in foods and food additives by molybdenum blue method.
- 115, 1985: Tin. Quantitative determination of the total content in food. Spectrophotometric determination with quercetin.
- 18, 1970, 2nd Ed.: Sulphurous acid. Determination in foods.
- 89, 1974: Chloride. Determination in meat and fish products.

The methods have been excluded from the collection as newer techniques have been taken into use.

## NMKL method No. 125, 4th ed., 2005:
## Thermotolerant coliform bacteria and *Escherichia coli*. Enumeration in food and feed.

Gro S. Johannessen, National Veterinary Institute, Oslo (Norway) has revised this method. In cooperation with Marianne Økland (also from the National Veterinary Institute) Dr Johannessen has arranged the collaborative study of this method jointly with NMKL Method No. 44: ”Coliform bacteria. Determination in foods and feeds”. EK-Livs supported the project financially.

The method describes the enumeration of thermotolerant coliform bacteria in foods and feeds. After closer identification of thermotolerant coliform bacteria, the method is also applicable to the detection of *Escherichia coli*. The method is especially suitable for the detection of stressed or sublethally injured bacteria.

Fifteen laboratories participated in the study. Each laboratory analysed a total of 20 artificially contaminated samples of minced meat, cheese, lettuce, and whole grain. The results of the study show that the method may be considered suitable for its purpose. The results of the study are given in the method text.

As indicated in NMKL Newsletter No 57, this NMKL method has also been compared with the MPN technique for the determination of thermotolerant coliform bacteria in fresh and frozen seafood as described in NMKL method No. 96, 3rd ed., 2003. This comparison was carried out at the National Veterinary Institute and at the National Institute of Nutrition and Seafood Research. Each laboratory analysed 50 samples of seafood, out of which most were negative. Statistical analysis of the results could prove no significant difference between the plating method and the MPN technique in the detection of thermotolerant coliform bacteria in seafood.

NMKL would like to thank the referee Gro Johannessen, National Veterinary Institute, and the Nordic contact persons on this method: Jens Kirk Andersen, DFVF (Denmark), Tuula Johansson, EELA (Finland), Margrét Geirsdóttir, the Environment and Food Agency (Iceland) and Annelie Eklöw, Arla Foods Innovation (Sweden). NMKL would also like to thank all the laboratories which participated in the collaborative study of the method.

## New NMKL Procedure
## NMKL Procedure No 15, 2004 (English 2005)
## Temperature control in microbiological laboratories.

The procedure gives practical guidelines for the daily temperature control routines in a microbiological laboratory, independent of which type of thermometer is used, mercury or electronical. The procedure is general. It is important to emphasise that the instructions/procedures have to be adjusted to the laboratories’ own equipment and needs. The controls require use of thermometers which are traceably calibrated to SI units (ISO 17025) in accordance with the laboratories’ own documented procedures.

## Please note ..
## an error in NMKL Procedure No 5

Unfortunately there is a typing error in NMKL Procedure No. 5 regarding measurement uncertainty of chemical analysis. In the example ”Analysis method: ochratoxin A (OTA) in corn” on pages 17-24, the following concentrations are given in the text and tables for the ”analyte level” and the ”OTA content”:

< 1 ng/g
1-10 ng/g
< 10 ng/g

The latter concentration should be **> 10 ng/g (higher than 10 ng/g).**

## New NMKL Procedure:

NMKL Procedure No 14, 2004 (English 2005)

**SENSVAL: Guidelines for internal control in sensory analysis laboratories.**

This procedure describes several aspects of sensory analysis, including –

- Selecting members for sensory panels
- Control of the panels (on basic taste tests, manipulated products, ordinary projects /trials)
- Checking the performance of a sensory trial
- Control of the data
- Proficiency testing schemes

## News from NordVal

NordVal has elaborated a new protocol for the validation of test kits, describing NordVal's procedure for validation of alternative microbiological methods. The protocol is available on www.nmkl.org.

NordVal has validated and approved 23 test kits. These are listed on the home page under NordVal. Sven Qvist, DFVF is the chairman of NordVal.

# NMKL course in Sampling
# 10 – 11 May 2005 at Icelandair Hotel Loftleiðir, Reykjavík

In Iceland, the course is arranged together with Syni Laboratory Service (Rannsóknarþjónustan Sýni).

### Programme, 10 May

| | |
|---|---|
| 09.30-10.00 | Registration |
| 10.00-10.15 | Introduction (*Franklín Georgsson, IS*) |
| 10.15-10.45 | Definitions, Available Directives on Sampling (legal aspects) *(Niels Ladefoged Nielsen, DK)* |
| 10.45-11.00 | Coffee Break |
| 11.00-11.30 | Sampling Plans – Microbiology *(Mats Lindblad, SE)* |
| 11.30-12.00 | Sampling Plans – Chemistry *(Astrid Nordbotten, NO)* |
| 12.00-12.45 | Sampling of Mould and Yeast *(Flemming Lund, SE)* |
| 12.45-14.00 | Lunch/Exhibition |
| 14.00-14.20 | Sampling performed in industry I (Fish Industry,) |
| 14.20-14.40 | Sampling performed in industry II (Feed Industry, *Gústaf Hjálmarsson, IS)* |
| 14.40-15.00 | Sampling performed in industry IV (Dairy industry, *Kristín Halldórsdóttir,IS)* |
| 15.00-15.15 | Coffee Break |
| 15.15-15.45 | Sampling performed in industry III (Meat/Slaughterhouse Industry, *NN)* |
| 15.45-16.15 | Sampling for surveillance R&D-projects (*Mats Lindblad, SE)* |
| 16.15-16.45 | Accreditation of Sampling procedures |
| 16.45-16.50 | Closure |

For any questions please contact Laufey Karlsdóttir
Syni Laboratory Service (Rannsóknarþjónustan Sýni)
Tel: 354-5673040, e-mail: laufey@syni.is
or NMKL's secretariat.

### Programme, 11 May

| | |
|---|---|
| 09.00-09.45 | Practical aspects (labelling, transportation, storage) *(Per Norberg, SE)* |
| 09.45-10.15 | Demonstration of equipment *(2-3 exhibitors each 10 min)* |
| 10.15-10.45 | Coffee /Exhibition |
| 10.45-11.15 | Film/pictures of sampling |
| 11.15-12.00 | Critical points – where to sample (HACCP) - 2 cases presented by an inspector and a representative of the industry |
| 12.00-12.30 | Working groups |
| 12.30-13.30 | Lunch / Exhibition |
| 13.30-14.00 | Working Groups continue |
| 14.00-15.00 | Conclusion – Group presentation and discussion |
| 15.00-15.15 | Coffee Break |
| 15.15-16.15 | Sampling in connection with food born poisoning (*Yvonne Andersson, SE)* |
| 16.15-16.30 | Information about the questionnaire and closure of the course |

**Please register to NMKL within 15 April 2005**

**Fee:**
ISK 20 000 incl. procedure No 12 + abstracts + lunches and coffee. (For participating only the first day, ISK 15 000)

**Accommodation:**
Hotel Loftleiðir, Icelandair hotels, Tel.+354 444 4500,
e-mail olli@icehotels.is, http://www.icehotels.is
Single room ISK 9 150 incl. breakfast. When booking the room, please inform the hotel that you are participating in the course as this is a reduced price (25% off regular price).