NMKL Newsletter
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Newsletter for
The Nordic Committee on Food Analysis

Contents:

57th NMKL Annual Meeting at Marstrand, 23rd-26th of August 2003

The Swedish National Committee of NMKL, chaired by Ulla Edberg from the National Food Administration, invited the members of NMKL to the 57th Annual Meeting at Marstrand, a car-free island off the beautiful Swedish west coast. About 60 members participated. The members of NMKL are appointed experts within food analysis, representing food control authorities, the food industry and relevant R&D institutions. The members put enormous effort into elaborating useful methods and procedures. Much of the work is conducted out of office hours, and with great commitment. The annual meetings are no exception. All the working programme topics (>50) were discussed. An updated list of all topics and information on their status, is available on the NMKL web page under "Working programme".

A major part of the annual meeting took place in the following committees:
- Chemistry, chaired by Prof. Kåre Julshamn, IFES, Norway.
- Microbiology, chaired by Dr. Maija Hatakka, National Food Administration, Finland.
- Sensory Analysis, chaired by Dr. Halina Agerhem, SIK, Sweden.

In plenary, chaired by NMKL's chairman Ole Bjørn Jensen from Scanpharm AS, we received information from NMKL's cooperating partners; NordVal, CEN, IDF and EK-Livs and its working groups. In recent years, NMKL has also had the tradition of inviting a referee to inform about the work of elaborating methods and validating them collaboratively. This year's referee was Gro Johannessen, National Veterinary Institute. She has elaborated and validated several methods for NMKL, including the method for *Staphylococcus aureus,* which is described in this newsletter.

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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. 66, 4th Ed., 2003: *Staphylococcus aureus*. Enumeration in foods.

Gro S. Johannessen from the National Veterinary Institute in Oslo, Norway, has revised and collaboratively validated this NMKL method.

The method describes the revised edition of NMKL method no. 66 "*Staphylococcus aureus*. Enumeration in foods". The title is changed from "Coagulase positive staphylococci. ……" to "*Staphylococcus aureus*. ……". In addition, some changes have been made in the definition, as Rabbit Plasma Fibrinogen agar (RPF) is included as an alternative culture medium to Baird-Parker agar (BP) and blood agar. The reason for including RPF agar as an alternative, is that it is possible to read the coagulase reaction directly on this culture medium, thus saving time and work. The method has been validated collaboratively with good result. 15 laboratories participated in the study, during which the three culture media were compared. No significant statistical differences were found between the media except between RPF agar and blood agar in two cases (boiled ham and pre-cut salad with low bacteria content). However, it is not recommended that blood agar is used as the only medium as a large background flora on the plates may interfere with the reading of the plates.

The content of *S. aureus* in a sample is quantified by surface inoculation of appropriate dilutions of the test sample on BP agar and/or RPF agar and/or blood agar. After 24 and 48 hours of incubation, the colonies with typical and atypical appearance are counted. When using BP agar or blood agar, a selection of colonies have to be confirmed by the coagulase test. When using RPF agar, the production of coagulase is tested directly on the agar plate. This will occur as an opaque precipitation zone around the colony.

Gro S. Johannessen

Withdrawal of NMKL methods

Last year at the NMKL Annual Meeting of 2002, NMKL decided to withdraw the following two methods:

- ✓ Aerobic microorganisms. Enumeration at 30°C in foods by means of PetrifilmTM plates. (NMKL method No. 146, 1993)
- ✓ Coliform bacteria and *Escherichia coli* in foods. Determination by the plate count method with PetrifilmTM plates. (NMKLmethod No. 147, 1993)

These methods were withdrawn because they are based on alternative methods (test kits). When the manufacturers of the kits were informed about the resolution, they requested that we postponed the withdrawal until a NordVal approval could be accomplished. Therefore, the methods are withdrawn now, over a year after the resolution was made.

NMKL method no 175, 2003: Aflatoxin M_1 in milk and milk powder. Determination by HPLC after cleaning on an immuno affinity column.

Tord Möller from the National Food Administration in Uppsala, Sweden, has elaborated this method for NMKL. The method is originally validated by IDF in 2 studies. A small modification is made in this NMKL method, as chloroform has been replaced with acetonitrile as the solvent for the standard solutions. Lambert K. Sørensen and Helga Hansen at Steins Laboratory, Denmark, have validated the modification.

This method is based on the use of an immuno affinity column with antibodies against aflatoxin M_1. The aflatoxin M_1 in the samples are bonded to the antibodies in the column, and later eluted and analysed by reversed phase chromatography on HPLC with fluorescence detection. The method is applicable for determination in milk and milk powder.

The first study was conducted in 1992 at the State Institute for Quality Control of Agricultural Products, Wageningen, the Netherlands. 16 laboratories from 11 countries participated. The Aflatoxin M_1 level in the samples varied from 80 to 600 ng/kg milk powder. In January 1999, the EU limit of 0.05 ng/mL for Aflatoxin M_1 in liquid milk was implemented. As the lowest validated level was 0.08 ng/mL, there was a need for a new study. European Commission Standards Measurement and Testing Program for Validation determined to conduct a full collaborative study in view of the new requirements. The study was arranged by Sylviane Dragacci of AFSSA, France. 12 laboratories participated in the international study. The Aflatoxin M_1 level in the samples covered the area of 23-103 ng/L. In this study, the chloroform was also replaced by acetonitrile. Thus, the method is shown applicable for a level of 23 – 600 ng/L.

For a short period, some subscribers have received methods electronically as well as hard copies. Please let us know if you prefer a subscription to pdf files. Otherwise, you will receive hard copies only from 2004 onwards. NB! Note that the hard copy subscription is more expensive than pdf files. Please remember to let us know about any changes in your addresses.

New prices	NOK
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Complete collection of NMKL methods	**2500**
Single methods	**200**
Ring-binder	**40**
Reports (Except No. 8)	**200**
Report No. 8	**250**
Procedures	**300**

NMKL method No 68, 3rd. Ed., 2003: *Enterococcus*. Determination in foods and feeds.

Laurits Rossebø from the Municipal Food Control Authority, Haugaland, Norway, has revised this NMKL method.

The revision has mainly been editorial. However, the aim has also been to harmonize parameters such as pH value, weight, time and water bath and incubation temperatures given in this method, with the other NMKL methods.

The method describes the quantitative determination of enterococci in all kinds of foods and feeds.

The presence of enterococci may be used as an indicator of the bacteriological/hygienic quality of a food sample. The number of enterococci is determined by plating known amounts of the sample on the surface of a selective medium, enterococcus-agar prepared according to the method of *Slanetz & Bartley*.

NMKL method No. 176, 2003: Proteins. Qualitative method for detection of specific proteins (allergens) in food by immuno diffusion

Ingrid Malmheden Yman from the National Food Administration, Uppsala, Sweden, has elaborated this method and organized the collaborative study.

Proteins from milk, egg, peanut and hazelnut are common allergens for a large group of allergic individuals, both children and adults. The analytical society has been in need of a collaboratively validated method for these proteins for a long time. Now, such a method is finally available. The method is validated in laboratories in Sweden, Finland, Norway, France, the Netherlands and Germany; a total of 12 laboratories. The study was extensive, and included 17 different food samples; 5 for the analysis of casein (milk protein), 4 for ovalubmin (egg protein), 4 for corylin (hazelnut protein), and 4 for peanut protein. The method is not limited to the proteins mentioned here, but can be used for determination of any proteins to which specific antibodies have been found. The method is applicable to all kinds of food with the exception of dark chocolate, which needs special treatment for the extraction of proteins to be complete.

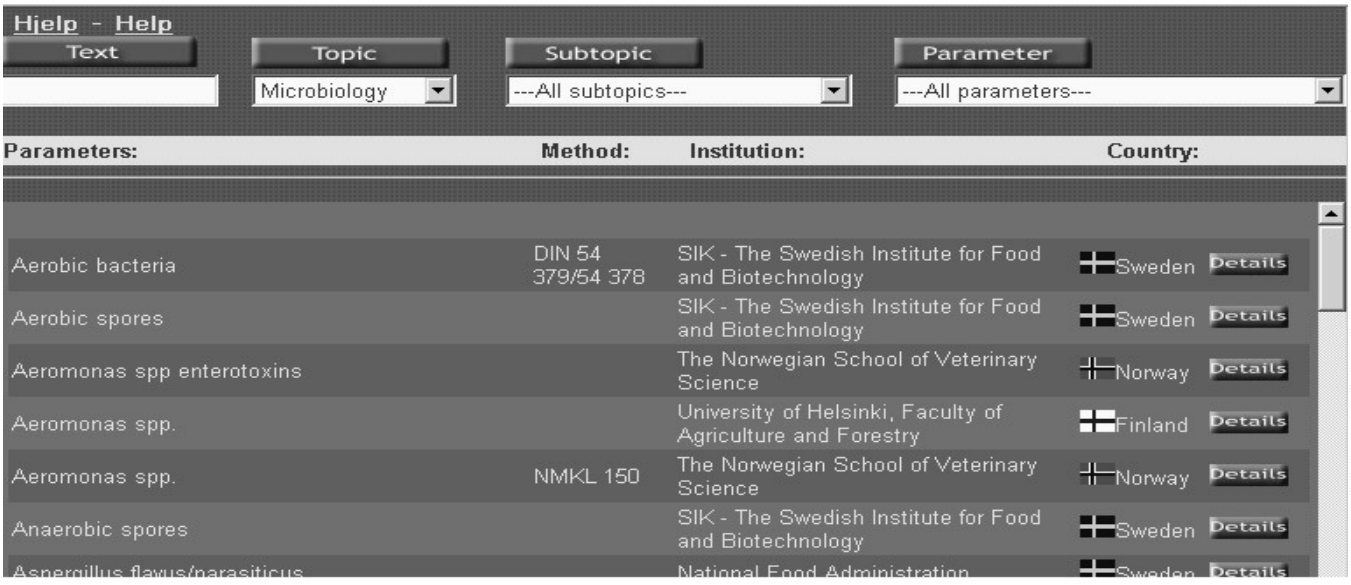
The principle of the method is that antigen and antibody are allowed to passively diffuse for 18-24 hours in an 1% agarose gel, moulded on a glass plate. Precipitate is formed when the antibody reacts with its specific antigen. The presence of a precipitate is regarded as a positive reaction.

Database on Nordic Expert Laboratories

A database on which analyses are performed by expert laboratories in the Nordic countries, is available on the NMKL web page: www.nmkl.org. This information is provided as a service for food control authorities, the food industry and laboratories, making it easier to find out who to contact for information about analyses/parameters, the performance of special analyses, guidance etc. 245 parameters are included, distributed among 19 expert laboratories. One of the requirements for a laboratory to be included in the database, is that the laboratory must have extensive R&D activities on the topic of interest. Which laboratories that are to be included in the database, are determined by a Nordic group, consisting of the following members:

Sweden (project leaders): Håkan Johnsson (hajo@slv.se), Per Norberg (per.norberg@slv.se), Halina Agerhem (ha@sik.se)
Denmark: Inge Meyland (ime@fdir.dk), Niels Ladefoged Nielsen (nln@vfd.dk)
Finland: Christina Bäckman (christina.backman@eela.fi), Tuula Prihonen (tuula.pirhonen@eela.fi)
Iceland: Kristin Olafsdóttir (stinaola@hi.is), Franklín Georgsson (franklin@ust.is),
Norway: Kåre Julshamn (kaare.julshamn@nutr.fiskeridir.no), Kofitsyo S. Cudjoe (kofitsyo.cudjoe@vetinst.no)

For any questions regarding this matter, please contact one of the project members in your country, or the secretary general of NMKL.



National Veterinary Institute

Invitation

Course for competent authorities, industry and analytical laboratories in Europe,
February 5th and 6th in Oslo

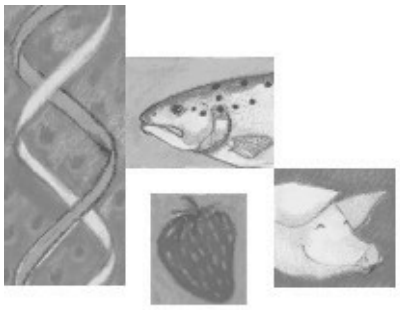
Quantitative GMO analyses

Use and abuse, possibilities and pitfalls

Aims/content: Participants will learn about typical problems connected to qualitative and quantitative GMO testing. The aim is to improve the participants' understanding of certificates and analytical results, and to improve the ability to communicate between suppliers, customers, public officials and consumers. The aim of the course is also to increase compliance with regulations in the GMO area. The course will be problem-oriented and different cases from GMO analysis and interpretation will be discussed.

The focus will be on the following issues:

- Developments in the GMO area
- European collaboration and harmonization
- Genes and DNA: properties and stability
- Basic PCR theory
- Different PCR applications
- Biology and genetics of GMOs
- Quantitative real-time PCR
- Alternative methods for GMO detection (protein, DNA-chips)
- Challenges in the GMO area
- Limits of detection and quantification for GMO
- Interpretation of analytical results of GMO analyses
- Design of certificates
- Case studies



Practical details: The duration of the course is two full days and the course language is English. The registration fee is 700 € and includes course material, lunch, dinner and refreshments. **Register by December 5th to Knut G. Berdal** (knut.berdal@vetinst.no), National Veterinary Institute, POB. 8156 Dep., 0033 Oslo, Norway. (www.vetinst.no)

NMKL Report No 20, 2003:

Guide for referees within microbiology
Elaboration of analtytical methods within NMKL.

The purpose of this report is to guide and inform the experts who elaborate and arrange the collaborative validation studies of analytical methods within mikrobiology. For the time being, the report is availble in Danish only.

This guide is elaborated by a NMKL project group consisting of:

Denmark: **Niels Skovgaard** (project leader), Birthe Jessen, Sven Qvist
Finland: Maija Hatakka, Tuula Johansson, Janne Lunden og Seppo Siväla
Iceland: Franklin Georgsson
Norway: Laurits Rossebø
Sweden: Elisabet Waak

Wanted: Laboratories for studying the following methods:

- Phosphatase activity (colorimetric determination) in milk and milk products.
- Sensory quality control of drinking water
- Fat in milk with Gerber
- Biogenic amines – HPLC method
- *Clostridium perfringens*

Please contact the NMKL Secretary General (nmkl@vetinst.no) if you would like to participate in any of these method validation studies.

NordVal

In the previous edition of this newsletter, alternative methods approved by Nordval were listed. Unfortunately, the following test kit was omitted by mistake: **Hygicult TPC for Surface Hygiene Monitoring from Orion Diagnostica, Finland.**

NordVal has also approved another alternative method: **VIDAS Immuno concentration Salmonella for detection of Salmonella in all foods.** The technique makes it possible to achieve negative results within 24 hours.

See www.nmkl.org for information about NordVal and the different methods approved by NordVal.

Have you registered on the NMKL home page, but not received any e-mails? This could be due to an error in your e-mail address – please register again. When mass distributing e-mails, the secretariat receives many "delivery failure" messages.