



Since last newsletter

UPDATED NMKL METHODS

- No. 174 (3rd ed. 2016)
Shigella spp. and Enteroinvasive Escherichia coli (EIEC). Detection with real-time PCR in food
- No. 139 (3rd ed. 2016)
Metals. Determination by atomic absorption spectrophotometry in foodstuffs

NEW NMKL PROCEDURE

- Verification of microbiological methods, PAGE 2

UPDATED NMKL PROCEDURES

- No. 21 (2nd ed. 2016)
Guide for sensory analysis of fish and shellfish
- No. 6 (2nd ed. 2016)
General guidelines for quality assurance of sensoric laboratories (Danish)

EVENTS PAGE 3

- Verification of microbiological methods
- Seminar on molecular methods
- Workshop on NRL
- NMKL's 70th annual meeting

NEWS FROM NORDVAL-INTERNATIONAL

NEW NORDVAL CERTIFICATES

- No. 047
HyServe Compact Dry ETC Method for the Enumeration of Enterococci in Food and Water intended for Human Consumption

RENEWED NORDVAL CERTIFICATES

Seven certificates have been renewed, PAGE 6.

AVAILABLE NMKL PROCEDURES PAGE 7

What has happened since the last newsletter?

Following NMKL's annual meeting on 24 August 2016, the NMKL general secretariat was moved from Norway to Denmark.

We are very happy to have been awarded the exciting job to run the secretariat in future.

Quite some time has passed since the last newsletter was issued, and we have been very busy establishing the secretariat. Work at NMKL has absolutely not been idle in the meantime.

NMKL has published and updated several methods.

NordVal International certificates have been renewed and comply with the new ISO 16140-2:2016 standard.

Furthermore, we have established a network group for MALDI-ToF with a focus on microbiological methods. We plan to run a workshop in near future.

Finally, we plan to hold a seminar on verification of microbiological methods at the end of 2017.

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NEW NMKL PROCEDURE:

VERIFICATION OF MICROBIOLOGICAL METHODS

(NMKL PROCEDURE No. 32, 2017)

Before an analytical method is taken into use, e.g. for routine testing, a laboratory must verify that it is capable of performing the analytical method. This includes evaluation of relevant performance characteristics to ensure that the method is fit for purpose within the laboratory.

This procedure provides guidelines on how

- a laboratory may verify that it is capable of performing an analytical method which has previously been externally validated
- a laboratory can evaluate the possibility of analysing additional matrices not covered by the primary validation, or include new matrices in the scope of an already verified method
- a laboratory should plan a verification and elaborate a verification report

The procedure is applicable to the verification of methods already validated properly in an interlaboratory study, and also to well-recognised standardised methods without validation and specified performance characteristics.

The procedure also describes how measurement uncertainty could be established while verifying the method, as the data obtained in the verification can be used in the evaluation thereof.

Please go to the NMKL homepage, www.nmkl.org., to download it or contact the secretariat, nmkl@food.dtu.dk, for a copy.

The procedure describes how you can verify the different performance characteristics and was prepared by:

- Charlotta Engdahl Axelsson, Eurofins, Sweden (project leader)
- Majbritt Moos, Akzo Nobel Salt A/S, Denmark
- Sven Qvist, Denmark
- Saija Hallanvuori, Evira, Livsmedelssäkerhetsverket, Finland
- Margrét Geirsdóttir, Matis, Iceland
- Hege Johnsrud, Eurofins, Norway
- Hilde Skår Norli, Veterinærinstituttet/ NMKL, Norway



*Charlotta Engdahl Axelsson,
Eurofins*

SEMINAR ON VERIFICATION OF MICROBIOLOGICAL METHODS

In connection with the publication of the method "Verification of microbiological methods" we plan to run a course in Helsinki in November.

More information will follow.

NMKL PROCEDURE NO. 8 ON MEASUREMENT UNCERTAINTY IN CONNECTION WITH QUANTITATIVE METHODS IN MICROBIOLOGY

The procedure will be presented by Hilde Skår Norli at the workshop organised by Eurachem and the European Section of AOAC International on "Uncertainty in Qualitative and Quantitative Analysis" on 29-30 May 2017 at the University of Cyprus, Nicosia.

SEMINAR ON MOLECULAR METHODS, OSLO, AUGUST 2016

The use of molecular methods (DNA methods) for detecting and characterising different agents becomes more and more common. Examples include PCR, Pulsed field gel electrophoresis (PFGE) and whole-genome sequencing. The seminar shed light on the use of molecular methods from a practical point of view, with a focus on foodborne bacteria, in the context of both food control and research. Discussions pivoted around the background of the methodology (technology), practical uses and challenges, and future application of the technology.

WORKSHOP ON NRL, OSLO, NOVEMBER 2016

Members of the national reference laboratories in the Nordic countries met at this workshop. Control Regulation 882 was introduced, and each of the participating countries gave a presentation. Discussions followed, including the exchange of experience. The way work is organised in different countries differs considerably. The participants gained a lot by becoming aware of these differences; they inspired each other and got ideas about how to proceed.

NMKL'S 70TH ANNUAL MEETING

NMKL's 70th annual meeting was held in historic surroundings in the mining town of Røros, Norway, on 21-24 August 2016.

For Franklin Georgsson, chairman of NMKL, it was his first time to lead the annual meeting. The former chairmen and secretaries-general had been invited to this anniversary meeting. Secretary-general Hilde Skår Norli had prepared an anniversary publication with the history of NMKL.

NMKL was praised as not only a well-established organisation but also a modern one which moves with the times and is looking forwards and outwards.

The participants at NMKL's annual meeting represented Nordic food laboratories, authorities and research environments. Members of NMKL consist of highly regarded experts, and the running of NMKL depends on their commitment and active contribution. Many of them are long-time members.

Gratitude was expressed to the following persons in connection with their 10-year anniversary: Steffen Solem (NNK), Carsten Theisen Pedersen (SNK), Guðjón Atli Auðunsson (INK), Veli Hietaniemi (FNK), Carola Ranta (FNK) and Marjaana Hakkinen (FNK).

In addition, a big thank you was given to Hilde Skår Norli, outgoing secretary-general, and Nina Bakkeland, outgoing secretary, for their excellent work.



*Hilde Skår Norli,
NMKL's outgoing
secretary-general,
gave an anniversary
speech*



*Røros Mining Town was built on
the exploration of copper*



Work in the microbiological sub-committee Photo: Ulf Bondesson

NORDVAL INTERNATIONAL PROTOCOL FOR THE VALIDATION OF MICROBIOLOGICAL ALTERNATIVE (PROPRIETARY) METHODS AGAINST A REFERENCE METHOD



The new protocol ISO 16140-2:2016 (the validation protocol) and NordVal International's revised protocol have become effective as from June 2016. As we receive many enquiries regarding these validations we repeat the requirements for validation.

The new protocol and lists on recommended matrices for different agents are available at www.nmkl.org under "NordVal".

The ISO standard and the NordVal protocol describe validation of an alternative method against a reference method. The main part of the work is carried out at an expert laboratory. The laboratory also organises collaborative validation.

The biggest difference from the previous version concerns quantitative determination and statistical analysis of the data. One of the advantages of the new ISO standard is that it describes the acceptance level, i.e. guidelines are provided for when the alternative method should be considered satisfactory.

NUMBER OF SAMPLES REQUIRED ACCORDING TO THE NEW PROTOCOL

QUALITATIVE METHODS

Step 1: Comparison undertaken by the expert lab.

For a broad range of foods, at least five food categories must be tested. The following number of samples is required for determination of:

- Sensitivity, specificity, relative accuracy and consistency between the methods: five food categories and 60 samples per category (approx. 50 % of these being positive), i.e. $5 \times 60 = 300$ analyses using both the alternative and the reference method.
- Selectivity: 50 target organisms (100 for *Salmonella*) as a measure of inclusivity + 30 non-target organisms as a measure of exclusivity.
- Relative level of detection: 1 matrix per category; three levels for each matrix; blind, low level (25 % -75 % recovery) and a somewhat higher level. The number of replicates for the low level should be at least 20, and five for the other two levels.

Step 2: Collaborative testing organised by the expert lab.

The results should come from at least ten cooperation partners from at least five different laboratories. A maximum of three data set may come from the same laboratory. The cooperation partners analyse a matrix with four levels and eight replicates by using both the alternative and the reference method.

QUANTITATIVE METHODS

Step 1: Comparison undertaken by the expert lab.

For a broad range of foods, at least five food categories must be tested. The following number of samples is required for determination of:

- Relative trueness: five replicates of three food types from five categories, i.e. 75 samples analysed by using both methods.
- Accuracy profile: three levels per category with two different replicates and five parallels, i.e. 150 samples per method.
- Selectivity: 50 target organisms for inclusivity and 30 non-target organisms for exclusivity.

Step 2: Collaborative testing organised by the expert lab.

You should get results from at least eight cooperation partners from at least four different laboratories. A maximum of three data set may come from the same laboratory. The cooperation partners analyse a matrix with three levels and two replicates with both the alternative and the reference method.

NORDVAL INTERNATIONAL CERTIFICATES



Lately, NordVal International has extended and renewed several certificates.

When renewed, certificates must comply with the new protocol described on the previous page.

The following certificates have been extended

- HyServe Compact Dry ETC Method for the Enumeration of Enterococci in Food and Water intended for Human Consumption (No. 047).
Certificate No. 047 has been extended and now covers determination of Enterococci in both food and water products intended for human consumption. Extensive studies have been carried out on the Compact Dry ETC method on food in accordance with the new ISO 16140-2:2016 standard. Furthermore, the results obtained for the Compact Dry ETC method on water have been recalculated according to this new ISO standard .
- RAPID' Salmonella method, short protocol RAPID' Salmonella method, double enrichment protocol (No. 032).
The NordVal certificate for RAPID' Salmonella method from Bio-Rad Laboratories in France has been renewed. RAPID' Salmonella method is a horizontal method for detection of Salmonella spp. The certificate now also includes dry milk and infant formula.

The following certificates have been renewed:

- HyServe Compact Dry TC Method for the Enumeration of Total Count (No. 033)
- HyServe Compact Dry ETB Method for the Enumeration of Enterobacteriaceae (No. 034)
- HyServe Compact Dry CF Method for the Enumeration of Total Coliforms (No. 035)
- HyServe Compact Dry EC Method for the Enumeration of Escherichia coli and coliforms (No. 036)
- Hygicult® TPC (No. 018)
- DNA Diagnostic Salmonella Velox (No. 046)
- Campylobacter real-time PCR (No. 017)

The certificates are available on the homepage, www.nmkl.org, under "NordVal".

Available NMKL procedures

- No 1, 2nd Ed. 2005 Kalibrering och kontroll av vågar på laboratorier. Calibration and performance checking of laboratory balances
- No 3, 1996 Kontrollkort och kontrollprov i den interna kvalitetskontrollen på kemiska livsmedelslaboratorier. Control charts and control materials in internal quality control in food chemical laboratories
- No 4, 3rd Ed., 2009 Validering av kemiska analysmetoder. Validation of chemical analytical methods
- No 5, 2nd Ed. 2003 Skattning och angivande av mätosäkerhet vid kemiska analyser. Estimation and expression of measurement uncertainty in chemical analysis
- No 6, 2nd Ed. 2016 Generelle retningslinier for kvalitetssikring af sensoriske laboratorier. (Yleiset ohjeet aistinvaraisten laboratorioden laadunvarmistukseen)
- No 7, 1998 Kontrol af UV/VIS spektrofotometre. Checking of UV/VIS spectrophotometers
- No 8, 4th Ed. 2008 Måleusikkerhet ved kvantitativ mikrobiologisk undersøkelse av næringsmidler. Measurement of uncertainty in quantitative microbiological examination of foods
- No 9, 2nd Ed., 2007 Utvärdering av det systematiska felet med användning av certifierade referensmaterial. Evaluation of method bias using certified reference materials.
- No 10, 2001 Kontroll av mikrobiologiske dyrkningsmedier. Control of Microbiological Media
- No 11, 2nd Ed. 2010 Sensorisk bedømmelse av drikkevann. Procedure for sensory analysis of drinking water
Juomaveden aistinvarainen arviointi.
- No 12, 2nd Ed., 2014 Håndbok i prøvetaking av næringsmidler. Guide on sampling for analysis of foods
- No 13, 2003 Volumetrisk kontrol. Volumetric control
- No 14, 2004 SENSVAL: Retningslinjer for egenkontroll i sensoriske analyselaboratorier. SENSVAL: Guidelines for internal control in sensory analysis laboratories
- No 16, 2005 (2007) Sensorisk Kvalitetskontroll. Sensory quality control. Aistinvarainen laadunvalvonta
- No 17, 2006 Kravspesifikasjoner ved kjøp av analysetjenester. Guidelines for requirement specifications for food analyses.
- No 18, 2006 Bruk av referansmaterialer, referansesammer og kontrollkort i mikrobiologiske næringsmiddellaboratorier. The use of reference materials, reference strains and control charts in a food microbiological laboratory
- No 19, 2007 Riktlinjer för sensorisk bedömning av livsmedelsförpackningar. Guideline for sensorial Analysis of Food containers/packages
- No 20, 2007 Evaluering av resultater fra kvalitative metoder. Evaluation of results from qualitative methods
- No 21, 2nd Ed. 2016 Guide for sensory analysis of fish and shellfish (available in English and Finnish)
- No 22, 2008 Anvisningar för värdering av immunokemiska testkit för livsmedelsanalys. Considerations regarding evaluation of immunochemical test kits for food analysis
- No 23, 2008 Handledning i kvalitetssäkring för mikrobiologiska laboratorier. Guide on quality assurance in microbiological laboratories
- No 24, 2010 Veiledning i kvalitetssikring for kemiske levnedsmiddellaboratorier. Guidelines for quality assurance for food chemical laboratories (also available in Finnish)
- No 25, 2014 Utbyte (Recovery) vid kemiska analytiska mätningar. Recovery information in analytical measurement
- No 26, 2nd Ed., 2015 Kontroll och intern kalibrering av termometrar och temperaturkontroll på mikrobiologiska laboratorier. Control and internal calibration of thermometers and temperature control on microbiological laboratories
- No 27, 2013 Måleusikkerhet i sensoriske analyser. 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 (English and Finnish)
- No 30, 2014 Statistical Evaluation of Results from Quantitative Microbiological Methods (English)
- No 31, 2015 Guidelines for sensory evaluation of bread
- No. 32, 2017 Verification of microbiological methods (in English)