



## NORDIC COMMITTEE ON FOOD ANALYSIS

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- NORDVAL 029: 3M PETRIFILM ENTEROBACTERIACEAE COUNT PLATE

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## NMKL / EURACHEM WORKSHOP ON MEASUREMENT UNCERTAINTY

### 29 - 30 SEPTEMBER 2014 AT IDA CONFERENCE CENTER IN COPENHAGEN, DENMARK

*NMKL and Eurachem are arranging a joint workshop on measurement uncertainty (MU) for chemical food and feed analysis. The relation between MU and bias, target MU, MU in sampling, MU in non-destructive analytical methods and in multicomponent analytical methods will be discussed. The workshop will be held in English.*

#### PROGRAM

##### 29 SEPTEMBER

- 13.00 - 13.30 Registration / coffee
- 13.30 - 13.45 Opening remarks
- 13.45 - 14.15 What is MU, and what is the relation between MU, bias and precision? General aspects.  
*Joakim Engman, National Food Agency, Sweden*
- 14.15 - 15.00 MU and bias *Bertil Magnusson, SP, Sweden*
- 15.00 - 15.30 Coffee/tea break
- 16.30 - 16.00 MU in sampling *Astrid Nordbotten, National Food Authority, Norway*
- 16.00 - 16.30 MU in multi component methods *Joakim Engman, National Food Agency, Sweden*
- 16.30 - 17.00 Target MU, determining fitness for purpose – setting Standard Method Performance Requirements *Roger Wood, UK*
- 19.00 Dinner

##### 30 SEPTEMBER

- 09.00 - 09.15 Uncertainty estimation from QC and validation data using the free software MUKit  
*Bertil Magnusson, SP, Sweden*
- 09.15 – 10.15 Practical examples on the following topics as introduction to round-table discussions on:  
a) MU including bias, b) MU in sampling
- 10.15 - 10.30 Coffee/Tea break
- 10.30 - 11.45 Round-table discussions
- 11.45 - 12.30 A sum up of the discussions
- 12.30 - 13.30 Lunch
- 13.30 - 14.00 MU in non-destructive analytical methods such as NIR, IR *Wolfhard Wegscheider, University of Leoben, Austria*
- 14.00 - 14.30 On-line course "Estimation of MU in chemical analysis" *Ivo Leito, University of Tartu, Estonia*
- 14.30 - 14:45 Coffee /tea
- 14.45 - 15.15 Decision making (compliance assessment) based on results with MU  
*Lorens Sibbesen LabQuality International, Denmark*
- 15.15 - 15.45 Summing up

Registration fee:

NOK 4000

Registration to:

[nmkl@vetinst.no](mailto:nmkl@vetinst.no)

Deadline:

20 Aug.

## NORDIC COURSES FOR LABORATORY PERSONNEL AT MICROBIOLOGICAL LABORATORIES

The courses are aimed at laboratory personnel at microbiological food and feed laboratories.

The course will give an introduction to different analytical techniques, sample preparation, control of equipment, validation and verification of methods.

### When and where

- 20 Nov. 2014 Matis, Iceland
- 24 Nov. 2014 Finnish Food Safety Authority, Evira, Finland
- 25 Nov. 2014 National Food Agency, Uppsala, Sweden
- 27 Nov. 2014 Norwegian Veterinary Institute, Norway
- 27 Nov. 2014 Danish Veterinary and Food Administration, Denmark

### Language

The courses will be held in the language of the respective country. The power-point presentations will be in English in all the countries.

### Preliminary Program

09:30 - 10:00 Registration

10:00 - 10:15 Introduction

10:15 - 10:45 Why analyse, the purpose of analysis; screening, detection of pathogens, disease detection, risk assessment

10:45 - 11:15 Choice of analytical methods

11:15 - 11:45 Sampling / sample preparation

11:45 - 12:15 Pitfalls

12:15 - 13:00 Lunch

13:00 - 13:30 Control of equipment and procedures

13:30 - 14:00 Media/Substrates/Reagents

14:00 - 14:30 Safety /Biosafety

14:30 - 15:00 Method Lesson (validation, verification, understanding test-kit certificates)

15:00 - 15:30 Coffee break

15:30 - 16:30 Group discussion/ lab demonstrations

16:30 - 17:00 Summing up and Closure

*Any specific topic  
you would like to  
discuss?*

*Suggestions can  
be forwarded to  
nmkl@vetinst.no.*

**Registration fee: NOK 2000 (EUR 250)**

Registration to NMKL (nmkl@vetinst.no) before **10 October 2014**.



## FOOD LABS IN A CRYSTAL BALL FUTURE CHALLENGES IN FOOD ANALYSIS

AOAC Europe - NMKL - NordVal International, Symposium 2015

21 - 22 MAY 2015 IN STOCKHOLM, SWEDEN

### Topics

- The future of laboratories; consequences of centralising laboratories
- Lab preparedness
- New and future instrumentation, emerging technologies
- Food adulteration / food authenticity
- Nanotechnology
- Multicomponent methods
- Rapid methods
- Validation and verification of methods
- Sampling and sample preparation
- Vendor seminar



We welcome abstracts on relevant topics for

- oral presentations, before 15 December 2014
- posters before 15 March 2015 (max 150 words)

AOAC Europe has a Best Poster Award, where the winner will be granted free attendance to the 2016 AOAC Europe Workshop including travel expenses.

### EXHIBITORS/ SPONSORS/ CONTRIBUTORS

We encourage manufacturers, suppliers of test-kits and instruments to take part in the symposium, with exhibitions, oral presentations and posters.

### Target audience:

Chemists, microbiologists, sensory analysts, lab managers, SDOs, stakeholders.

There will be parallel sessions.

**Please send ideas and contributions to [nmkl@vetinst.no](mailto:nmkl@vetinst.no)**

## NEW TECHNIQUE FOR IDENTIFICATION OF BACTERIA!

### MALDI-TOF MS ANALYSIS IN FOODS

A workshop on MALDI-TOF MS was arranged at the National Veterinary Institute, SVA, in Uppsala, Sweden on 27 May 2014. Professor Ulf Bondesson, Head of the Department of Chemistry, environmental and feed safety (SVA) organised the workshop.

MALDI-TOF MS is a matrix-assisted laser desorption/ionisation time-of-flight mass spectrometry, which offers the possibility of accurate, rapid, and inexpensive identification of isolated bacteria.

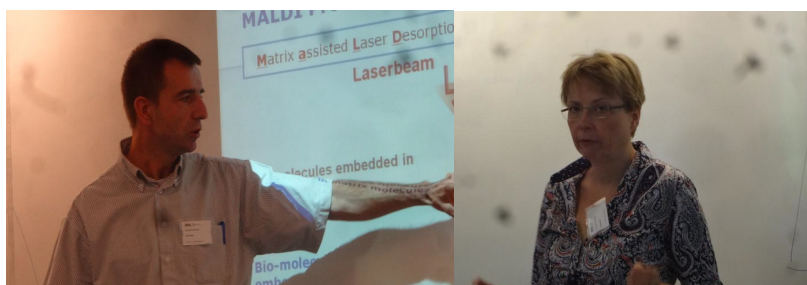
At the workshop we learned about how MALDI-TOF MS works, the impact of this technique on food safety, and experiences in the use of MALDI-TOF MS in different areas. We learned that the technique is very sensitive, fast (results after a few minutes), and that up to 96 samples can be done in a single run. Further, the technique is robust, the method is reproducible and easy to use. The technique works for bacteria, yeast and fungi, depending on the reference library.

Bruker informed that their library contains more than 120.000 spectra, 5.700 different strains, 2.500 different species and more than 450 different genera.

The workshop was a success, and several laboratories will probably take this new this technique into routine use very soon.



*Professor Ulf Bondesson, at SVA, - the organiser of the workshop*



*To the left: Gerold Schwarz, Bruker, Germany*

*To the right: Susanne Nielsen, Eurofins, Denmark*

*Photo: Ulf Bondesson*



*Christine Wind, BWL, Germany*

*Photo: Ulf Bondesson*



## **NEW NMKL PROCEDURE:**

### **GUIDELINES FOR REPORTING SENSORY DATA**

#### **NMKL PROCEDURE No. 28, 2014**

By sensory data we mean data collected using human senses (sight, smell, taste, touch, and hearing). The present procedure covers profiling data as well as data consisting of comparisons or preferences. In profiling, assessors evaluate sensory attributes or variables on a scale ranging from being completely absent to heavily present. The terms attribute and variable will both be used in the following; they do, however, denote exactly the same thing. The data are given as numbers, either indirectly, by the assessor marking a position on a straight line on paper or on a computer, or directly as a number, either on paper or digitally. It is important to note that a panel of assessors is considered to give objective answers, in the sense that the assessors evaluate and score sensory attributes, as opposed to giving their opinions to which degree they like the samples. The latter type of analysis falls under the heading of consumer testing and is performed by consumers not trained in evaluating food.

Basically, there are two ways of presenting the data: either as numbers (a complete listing of all the data points, or a summary in the form of the mean and standard deviation, or other appropriate measures), or using graphics (bar charts, line plots, loadings/scores from Principal Components Analysis (PCA), or any fancy method of presentation that might occur to the analyst).



*Per Lea, Project Leader and main author*

This procedure has been prepared by a project group consisting of:

- Per Lea, (Project Leader) Nofima – Norwegian Institute of Food, Fisheries and Aquaculture
- Gunnar Forsgren, Iggesund Paperboard, Sweden
- Grethe Hyldig, DTU Food, National Food Institute, Technical University of Denmark
- Päivi Kähkönen, FINAS, Finnish accreditation body
- Aðalheiður Ólafsdóttir, Matís – Icelandic Food Research
- Steffen Solem, Eurofins, Norway and the Norwegian Wine Monopoly
- Kolbrún Sveinsdóttir, Matís – Icelandic Food Research

## REVISED NMKL PROCEDURE

### RECOVERY INFORMATION IN ANALYTICAL MEASUREMENT

NMKL Procedure No. 25, 2nd version, 2014

Recovery is used to denote the yield after an analytical process where the analyte is transferred from a complex matrix into a much simpler solution after an extraction procedure. Such procedures are hardly ever 100% efficient, therefore the method efficiency, the recovery, must be established. Normally, the recovery is estimated in the validation procedure. The spike value must be close to the concentration of the analyte in the sample, or related to a defined concentration, e.g. a maximum limit. Since the recovery may be both matrix and concentration dependent, the documentation should show the recovery for different combinations. Furthermore, the recovery test must be repeated over time in order to monitor changes between runs. In the daily work, it is important to choose a spike level close to the level in the samples, and in subsequent routine runs, analyse the material in the exact same way as the sample.

The purpose of this guideline is to provide information on recovery in analytical measurement, to outline where recovery is applicable and where it is not, and to explain how to use recovery information for quality control purposes. The term Apparent Recovery is presented, and its practical applicability is explained.

The revision of this procedure has been carried out by Lars Jorhem (Sweden) assisted by Tone Normann Asp (Norway), Arne Højgård Jensen (Denmark), Eija-Riitta Venäläinen (Finland), Håkan Johnsson and Joakim Engman (Sweden). The new version contains several corrections and further clarifications.



Lars Jorhem, Sweden



**www.nmkl.org**  
has new Web design,  
check it out!



### Withdrawal of NMKL Method

NMKL 103, 1984: "Benzoic acid and sorbic acid in foods. Quantitative determination by gas chromatography" is withdrawn due to use of hazardous solvent.

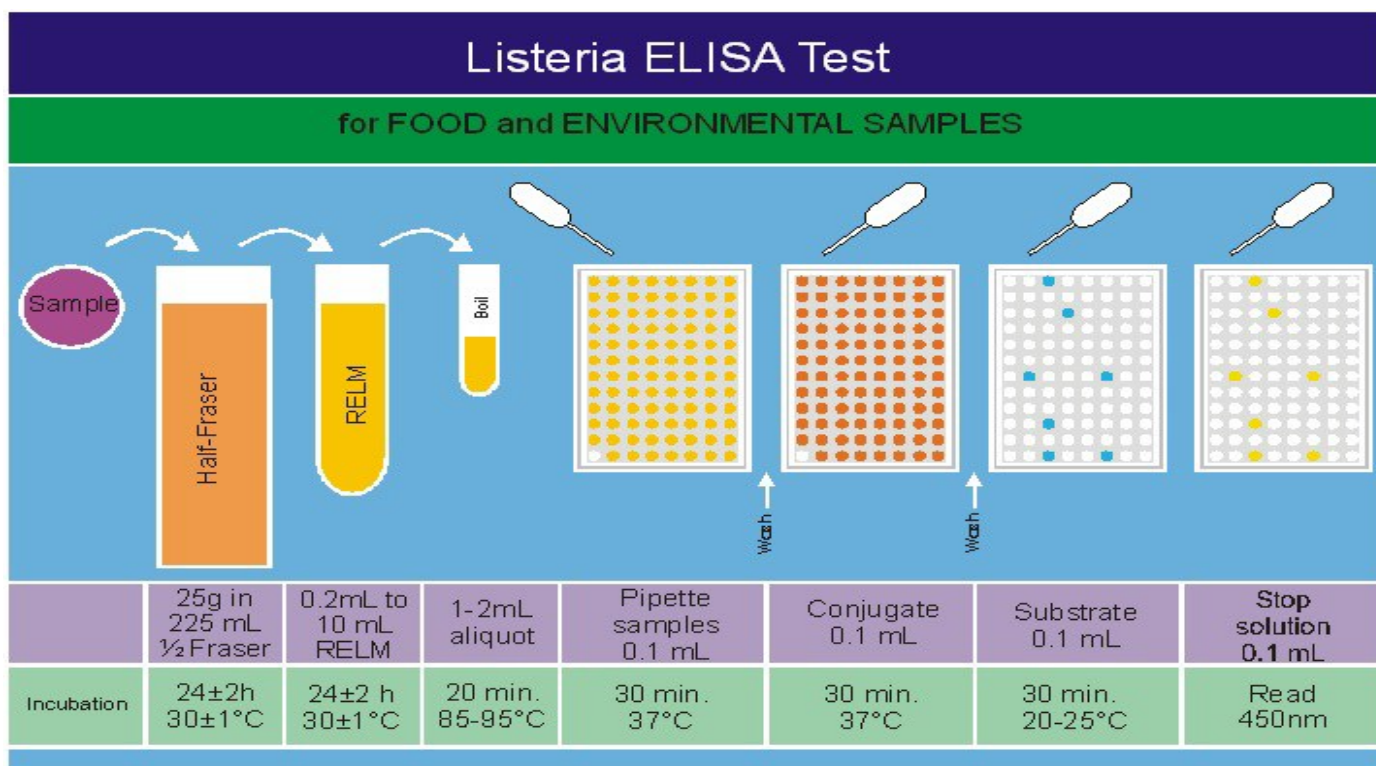
Benzoic acid and sorbic acid are isolated from food by extraction with ether and successive partitioning into sodium hydroxide solution and dichloromethane. Acids are converted to trimethylsilyl (TMS) esters and determined by GC.

**For determination of benzoic and sorbic acids in foods, NMKL recommends to use NMKL 124.**

**NEW METHOD CERTIFIED BY NORDVAL INTERNATIONAL:**  
**NORDVAL 046: LISTERIA ELISA TEST**



Diatek AG Listeria ELISA test is a two-step, sandwich-type ELISA (Enzyme Linked Immuno Sorbent Assay) using a microtitre plate coated with specific antibodies directed against Listeria antigens, and ready-to-use reagents. The test allows the detection of *Listeria* spp. After enrichment steps, a heat shock releases *Listeria* antigens that might be present in the sample. The reading of the micro plate is carried out with a spectrophotometer at 450 nm.



NordVal International has reviewed the results obtained in the validations conducted in accordance to ISO 16140:2003 (Validation Protocol). The extensive validations (comparison and inter-laboratory study) were carried out by the expert laboratory IPL Santé Environnement Durables Nord, in 2010.

NordVal International could conclude that it has been satisfactorily demonstrated that the Listeria ELISA Test provides equivalent results compared to the reference method, EN ISO 11290- 1: 1996/Amd 1:2004.

Listeria ELISA test is manufactured and supplied by Diatek AG, Switzerland.

The certificates are available at [www.nmkl.org](http://www.nmkl.org) under “NordVal” and “NordVal Certificates”.

The certificates include the results of the validation studies; selectivity (inclusivity/exclusivity) and the reliability of the method; accuracy, sensitivity, specificity, as well as agreement between the reference method and the alternative method.





## RENEWED AND EXTENDED CERTIFICATE: NORDVAL 032: RAPID'SALMONELLA TEST

RAPID'Salmonella is a chromogenic agar medium, the principle of which relies on demonstration of two enzymatic activities. The RAPID'Salmonella test methods approved by NordVal International are:

### RAPID'Salmonella method - Short protocol:

- selective enrichment in Buffered Peptone Water and RAPID'Salmonella supplement at  $41.5^{\circ}\text{C} \pm 1^{\circ}\text{C}$  for  $18\text{h} \pm 2\text{h}$
- plating out on RAPID'Salmonella
- selective isolation incubation at  $37^{\circ}\text{C} \pm 1^{\circ}\text{C}$  for  $24\text{h} \pm 2\text{h}$

### RAPID'Salmonella method – Double enrichment protocol:

- pre-enrichment in Buffered Peptone Water at  $37^{\circ}\text{C} \pm 1^{\circ}\text{C}$  for  $18\text{h} \pm 2\text{h}$
- selective enrichment in RVS for at  $41,5^{\circ}\text{C} \pm 1^{\circ}\text{C}$  for  $24\text{h} \pm 2\text{h}$
- plating out on RAPID'Salmonella
- selective isolation by incubation at  $37^{\circ}\text{C} \pm 1^{\circ}\text{C}$  for  $24\text{h} \pm 2\text{h}$ .

Rapid'Salmonella is manufactured and supplied by Bio-Rad Laboratories, France.

NordVal International has evaluated the method and the results obtained in the validations conducted in accordance with ISO 16140:2003 (Validation Protocol) against the reference method for *Salmonella* (ISO 6579:2002). The RAPID'Salmonella method - short protocol, and RAPID'Salmonella method - double enrichment protocol are applicable to foods, animal feeds and environmental samples. For the double enrichment protocol there are several false positives for samples of meat, seafood and ovo products. As many as 20% of the samples were false positives, hence confirmation is necessary.

The results are given in NordVal Certificate 032, which is available at [www.nmkl.org](http://www.nmkl.org).

The methods that are certified by NordVal International can be used according to the Commission Regulation (EC) 2073/2005 of 15 November 2005 on microbiological criteria for foodstuffs.

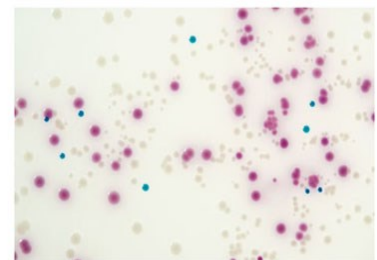


Photo: [www.bio-rad.com](http://www.bio-rad.com)

*Salmonella spp* present appear as typical magenta colonies.

Confirmation of presumptive colonies can be performed by Oxoid Salmonella Latex test or conventional tests described in reference methods.



## RENEWED CERTIFICATE

### NORDVAL 002: LISTERIA TRANSIA® PLATE - *LISTERIA SPP.*

TRANSIA® PLATE *Listeria spp* is a sandwich enzyme immunoassay, where highly specific proprietary antibodies ensure the detection of the entire *Listeria* genus (*L.monocytogenes*, *L. ivanovii*, *L. innocua*, *L. seeligeri*, *L. welshimeri* and *L. grayi*) in all foods and environmental samples.

The method describes:

- enrichment on Demi-Fraser Broth for 20-26 h at 30°C ± 1°C, then
- inoculation of 0.25 mL of the Demi-Fraser Broth in 10 mL Fraser Broth, incubated for 22-26 h at 30°C ± 1°C, followed by
- TRANSIA® PLATE *Listeria* test after heating of 1 to 2 mL of the Fraser Broth enrichment at 95-100°C (boiling water) for 20 minutes.

The reading of the microtitre plate is carried out using a spectrophotometer at a wavelength of 450 nm.

Positive and Negative controls are supplied with the kit.

Extensive studies have been carried out according to ISO 16140:2003. The method was compared against the ISO 11290-1:2004: Horizontal method for the detection and enumeration of *Listeria monocytogenes* -- Part 1: Detection method.

NordVal International could conclude that the studies had been performed satisfactorily, and that the method provides results that are equivalent to those of the reference method. For further information see NordVal Certificate 002.

The manufacturer and supplier of the TRANSIA® PLATE *Listeria spp* is BioControl Systems, [www.biocontrolsys.com](http://www.biocontrolsys.com).



Photo:

[www.biocontrolsys.com](http://www.biocontrolsys.com)



## RENEWED CERTIFICATE

### NORDVAL 028: SALMONELLA ELISA TEST SELECTA/ RAYAL SALMONELLA SELECTA

Salmonella ELISA Test SELECTA / RayAl Salmonella SELECTA is an immuno-enzymatic test using a microtiter plate coated with specific antibodies directed against Salmonella, and ready-to-use reagents.

The test allows the detection of Salmonella, after

- enrichment in buffered peptone for 6 - 10 h at  $37\text{ °C} \pm 1\text{ °C}$ , and then
- incubation in SELECTA broth for 18 - 24 h at  $41.5\text{ °C} \pm 0.5\text{ °C}$  followed by an
- immuno-enzymatic test after heating of an aliquot of SELECTA broth.

Confirmation of positive samples is not necessary, unless it is required according to legislation.

The method has been tested on food and animal feed in extensive studies performed according to the ISO 16140:2003 validation protocol, and compared against the ISO 6579:2002 standard for detection of *Salmonella* spp.

The Salmonella ELISA Test SELECTA is manufactured by Diatek AG (previously Biotek) Switzerland, and supplied by Diatek AG and RayAl Ltd, United Kingdom.

NordVal International has reviewed the test and the validation results, and concluded that it has been satisfactorily demonstrated that the method provides equivalent results to those obtained by the reference method.

#### Expired NordVal Certificates:

- NORDVAL 027: 3M PETRIFILM SELECT E.COLI COUNT PLATE
- NORDVAL 029: 3M PETRIFILM ENTEROBACTERIACEAE COUNT PLATE

3M has chosen not to renew the NordVal Certificates for Select *E.coli* count plate and *Enterobacteriaceae* count plate. Please note that these certificate should no longer be referred to, and they will no longer be available on the web-page. However, there are other recommendable methods for these microorganisms certified by NordVal International.

NEW NMKL WEBSITE: [www.nmkl.org](http://www.nmkl.org)



We would like to introduce our new homepage.

It should be possible to search on all publications, so if you are looking for something specific, please use the search function on the top of the page.

The reason for creating the new web page was to make the site more efficient. For streamlining the work at the secretariat we would also like to **offer those of you with a NMKL method subscription in hardcopies and pdf-files to change the subscription to an online subscription without any additional costs.** With an online subscription you get a username and password, allowing you access to all methods at any time. You will be notified when new methods are published. If you would like such a subscription, please contact us at [nmkl@vetinst.no](mailto:nmkl@vetinst.no). The price for a method subscription (1-3 users) is NOK 2500 (EUR 340).



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## COLLABORATION?

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*Do you need a new or improved analytical method? Would you like to contribute in the elaboration and validation process?*

*Please do not hesitate to contact NMKL.*

## 68th NMKL Annual meeting, 2014

23 – 26 August 2014, the Icelandic National Committee of NMKL welcomes the members of NMKL to hold the 68th NMKL Annual meeting in Iceland.

The meeting will be held at hotel Stykkisholmur (photo below) in Stykkisholmur, a municipality situated in the western part of Iceland. The NMKL members are appointed experts from Denmark, Finland, Iceland, Norway and Sweden. During the Annual Meeting the sub committees will discuss all the subjects on the working program. There will also be time for networking.

