



NMKL Annual Report 2021

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Mandate

Nordic Committee on Food Analysis, NMKL, was established in 1947 and consists of chemists, microbiologists, sensory analysts, and statisticians from the five Nordic countries: Denmark, Finland, Iceland, Norway, and Sweden. NordVal International, which reviews and certifies proprietary methods, was incorporated in NMKL in 2007. Currently, NMKL has 61 members. Organizationally, NMKL is linked to the Nordic Council of Ministers through EK-FJLS Food. The NMKL general secretariat is located at the Institute of Marine Research in Norway since Nov 2020.

NMKL's objectives are to

- be a network of expert in food analysis
- provide reliable methods for foods and feeds
- offer NordVal certified methods for feed, food and environmental samples
- develop guidelines for laboratories and users of analytical results
- organize relevant training courses, workshops and seminars
- promote Nordic interests internationally on topics relating to food methodology

To achieve our objectives, we

- coordinate a synergistic collaboration of Nordic experts in microbiological-, chemical- and sensory food analysis
- ensure continuous availability of reliable methods & procedures fit for purpose to analyze feed and food under Nordic conditions
- extend to stakeholders world-wide and through international organizations; 27 methods CODEX endorsed
- assist in guidance on good laboratory practices and standard operation procedures through workshops and procedures
- support Nordic food safety authorities and contributes to safe food trade in accordance with legislations
- provide updated lists of Nordic Reference Laboratories and a Nordic interpretation of the EU Control Regulation
- are connected to the Nordic Council of Ministers and strives to support 'Our Vision 2030' in reaching UN sustainability goals and the EK-FJLS's Co-operation Programme 2021-24
- are prepared to address the analytical needs in the Nordic food industry related to food fraud, use of side streams and new food products

Annual meeting 2021 and NMKL organization

The first joint physical (Thorbjørnrud hotel, Jevnaker) and virtual annual meeting was held with 11 physical and 28 virtual attendees. This year the focus was on how to show EK-FJLS Food that NMKL provide a Nordic added value by 1) review the structural organization of NMKL, 2) Workplan for 2022 including budget and to preparing for the EK-FJLS Food Autumn meeting 6 October and 3)

revitalization. The work from the first half of 2021 is summarized in the NMKL annual meeting 2021 minutes report which was published Sept 2021.

NMKL decided to remove the national committees as a formal part of NMKL, giving more strength to the Nordic subcommittees (2022: using the name “group” instead of subcommittee is suggested), with a contact person from each subcommittee in each country. A national contact persons in each country will be appointed, instead of national committees (no more mandatory national meetings). The subcommittees should have 2-3 meetings, most likely virtual, per year. A chair period for 2 years after 2 years of vice-chair was decided. English was decided as the only written language for NMKL communications, templates were updated (**Fig. 1**), and the new NMKL.org will be in English only.


NORDIC COMMITTEE ON FOOD ANALYSIS		METHOD
		No. XXX Ver. 20XX
Title of the method (Calibri Bold 16)		
The title should be precise and concise, starting with the analytes/ <u>agens</u> , the principle and matrices.		
Examples:		
Bacterial count. Determination by direct <u>epifluorescent filter technique</u> (DEFT) in raw minced meat.		
Tin (Sn). Determination in foods by inductively coupled plasma mass spectrometry (ICPMS).		
NMKL methods are available for purchase at www.nmkl.org . NMKL invites all readers and users of the method to submit comments and considerations on its contents to the NMKL secretariat at post@nmkl.org .		
©NMKL. This publication is copyright-protected by NMKL. Neither the publication nor any extract from this may be reproduced, stored in a retrieval system or transmitted to others in any form or by any means, electronically, as a photocopy, a recording or otherwise, without prior written permission being secured. Reproduction may be subject to royalty payments. Violators may be prosecuted.		
This NMKL method has been validated in a collaborative study.		
If the study has been conducted by another organisation than NMKL that should be stated here. The name(s) of the study organiser(s) and institute should be stated under Referee (clause 14).		
<i>If a collaborative study has not been carried out, this clause is not to be included.</i>		
1. INTRODUCTION		
(The text is to be written in Calibri font size 11)		

Figure 1. New NMKL template for Methods.

A project group consisting of the administrative group in NMKL has further worked on suggesting improvements to the structural organization (**Fig. 2**) and revising the steering documents. A more efficient way of working is the goal and allowing for inviting Baltic countries in 2022.

NMKL has in total 61 members participating in the 4 groups as follows: Microbiology, 26; Chemistry, 24. Sensory, 7; NordVal International, 8.



Figure 2. New NMKL organization up for decision 2022.

Publications and deliverables

It was decided that NMKL will not adopt or create methods where a similar standard is already existing but supplement them, when needed, with adaptations and additions for Nordic conditions. When methods have been reassessed (5y for non-validated and 10y for validated) info about that will be given on the NMKL.org homepage.

Methods and procedures

- NMKL method 67. 8th Ed. 2021. “Presumptive *Bacillus cereus*. Determination in foods.” was published Apr 2021.
- Three NMKL methods were endorsed in Codex Stan 234 at CCMAS 41:
 - NMKL 179 pH, Noni-juice, Type II
 - NMKL 173 ASH, dairy permeate powders, Type I
 - NMKL 158 Peroxide value, Fats and oils, Type I

Documents

- Updated list of Nordic National Reference laboratories (NRL's) document published.
- Nordic interpretation of the EU Control Regulation for NRL's and Official Laboratories document published.
- NordVal International holds certificates for 23 microbiological and 4 chemical methods that are valid for 2 years at a time (**Table 1**). In total, 14 certificates were up for renewal in 2021 whereof 4 were extended to new matrices. Two new methods were certified in 2021 (NordVal 054 and 055). NordVal International currently works with certification of 10 new methods and 3 suppliers that are in the assessment phase.

Aerobic microorganisms	2
Campylobacter	2
Coliforms, <i>E. coli</i> & <i>E. coli</i> 0157	3
<i>Enterobacteriaceae</i>	1
<i>Enterococci</i>	1
<i>Listeria</i>	4
<i>Salmonella</i>	6
<i>Staphylococcus</i>	2
Yeast and mold	2
Chemical methods	4

Table 1. NordVal International certificates in different areas.

- The NordVal International Protocol No. 1 was updated in 2021 and published in Jan 2022.
- NMKL Newsletter published in new format and distributed using MailChimp allowing for monitoring the emailing and reading activity (**Fig. 3**).



Figure 3. NMKL News in Microsoft Sway.

Collaboration

- NMKL intranet on SharePoint to adapt to the more electronic way of working (Fig. 4).
 - more functional and accessibility for members/project members to work interactive and simultaneously on documents.
 - IntraNews published bi-annually by the NMKL general secretariat to inform about such as
 - free NMKL publications to members and grants for attending virtual conferences.

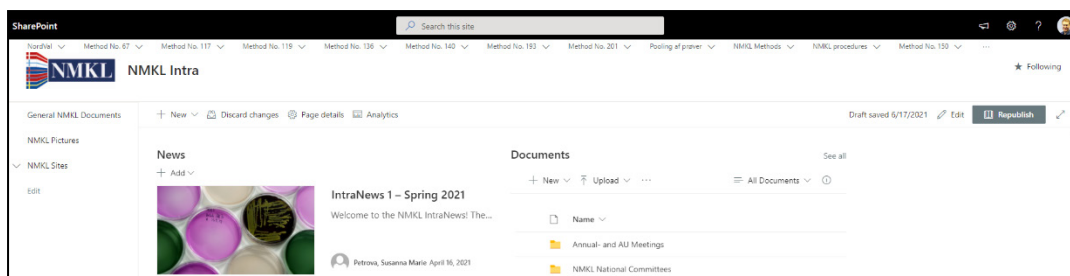


Figure 4. NMKL Intra intranet on SharePoint

- Eurachem and NMKL signed Memorandum of Understanding to collaborate on projects and sharing information.
 - NMKL liaison A with ISO/TC 34/SC9 “Microbiology” and liaison B status with SC 12, “sensory”.
 - Secretary General and Jette Jakobsen are members of ISO/TC 34/WG 14 “Vitamins, carotenoids and other nutrients” through national standardization body.
 - The NMKL Secretary General was appointed a member of the AOAC Europe Board.
- NMKL.org new homepage in compliance with rules for requirements of universal web design (Fig. 5). Vendor for creating new NMKL homepage was chosen by tender and much of the work finished in 2021, the product will be launched in Feb/Mar 2022.

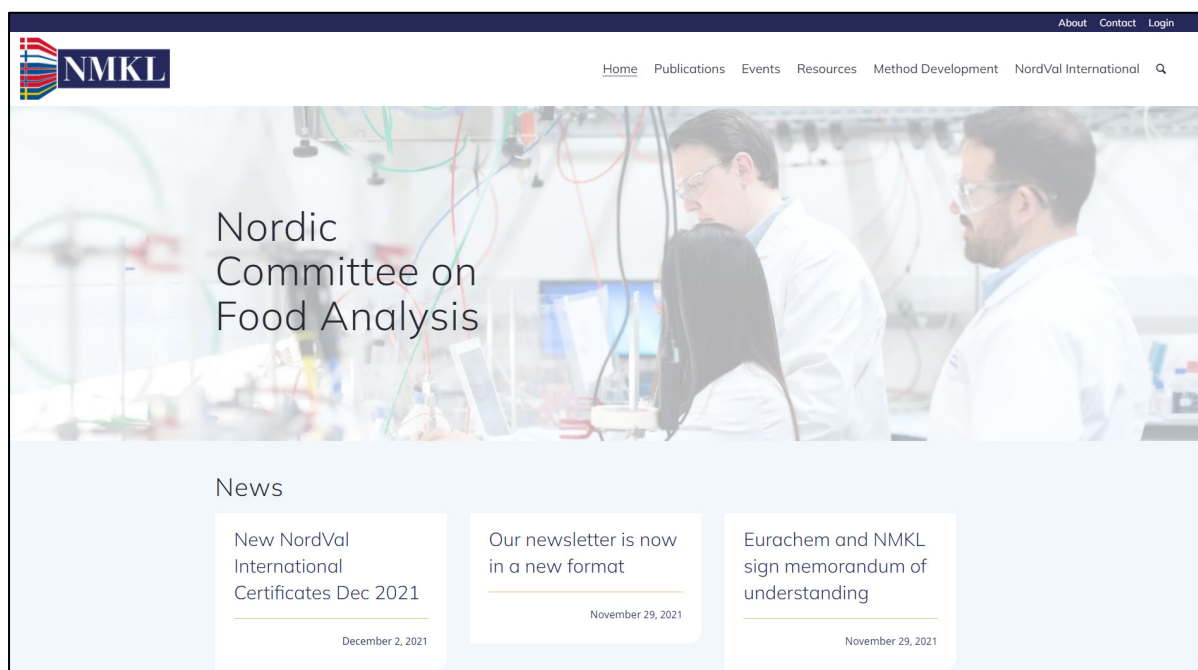


Figure 5. Draft of new NMKL.org homepage to be launched early 2022.

Secretary General represented NMKL

- NMR: Nordic Innovation Strategies for Sustainable Food Systems, Jan 2021
- EK-FJLS Food Work Groups Meeting, Apr 2021
- Inter-Agency Meeting, 10 May 2021
- CODEX CCMAS 41, 17-21 May 2021
- Eurachem GA-37, 20-21 May 2021
- AOAC Europe – SwissFoodchem: Food Symposium on Trends and Challenges, July 2021
- NMR: From Science and Guidelines to Food System Transformation, 2 Sept 2021
- EK-FJLS Food Meeting Autumn 2021 (workplan 2022 delivered – not participation)
- Vitamin Conference Copenhagen, 21-24 Sept 2021 [physical meeting with poster]

Projects ongoing in 2021 – our workplan 2022

Many projects (33) of different nature are ongoing in the 4 scientific groups. Several are to elaborating new, and reassessing old versions of, NMKL methods and procedures. These revised versions will be published and made available for purchase on our webpage consecutively.

	Common projects	Type	Responsible
1*	Side-streams and sustainability in the green transition. Evaluation of methods and procedures for the use of waste products from food processes. Are the procedures of sampling and analytical methods the same for chemistry, microbiology and sensory analyses?	Project	Eystein Oveland (NO), start-up lead
2	Characterize analytical needs in the EK-FJLS Food focus areas.	Project	Eystein Oveland (NO)
3	How could NMKL support authorities in controlling food authenticity?	Project	Eystein Oveland (NO)
4	Procedure No. 17, 2006, Guidelines for requirement specifications for food analyses.	Procedure Revision	Hilde S. Norli (NO)
5	Update list of Nordic Reference Laboratories (NRL's).	Project	Susanna Petrova (NO) with help from contact persons in each Nordic country

	Microbiology projects	Type	Responsible
1	NMKL 71, 1999, 5th Ed. Salmonella. Detection in foods. Method will be updated with the references in mind and harmonize the format and instructions to the more recently updated NMKL No. 187. Draft ready Nov 2021.	Method Revision	Gro S. Johannesen (NO), Vala Friðriksdóttir (IS)
2	<i>Yersinia pseudotuberculosis</i> . Detection in foods (to be NMKL 193).	Method Revision	Saija Hallanvuo (FI)
3*	User-network in MALDI-TOF for identification or confirmation in microbiology.	Network	Bjørn Tore Lunestad (NO)

4	New NMKL procedure on quality assurance of PCR analyses, draft is ready Nov 2021.	Procedure New	Saija Hallanvuori (FI)
5	NMKL 140, 2007, 2nd Ed. Lactic acid bacteria. Determination in food in association with food spoilage.	Method Revision	Jørgen Leisner (DK)
6	NMKL 136, 2010, 5, Ed. Listeria monocytogenes. Detection in foods and feeding stuffs and enumeration in foods.	Method Revision	Project group needs new designated lead
7	NMKL 125, 2005, 4 Ed. Thermotolerant coliform bacteria and Escherichia coli. Enumeration in food and feed.	Method Revision	Anna Hold (FI)
8	NMKL 150, 2004, 3 Ed. Mesophilic Aeromonas species. Determination in foods and feeds.	Method Revision	Sunniva Hoel (NO)
9	NMKL 119, 2007, 3 Ed. Thermotolerant Campylobacter. Detection, semi-quantitative and quantitative determination in foods and drinking water.	Method Revision	Project group needs new designated lead
10	NMKL 156, 1997. Pathogenic Vibrio species. Detection and enumeration in foods.	Method Revision	Jógvan Páll Fjallsbak (DK)
11	Methods reassessed at annual meeting 2021 that were decided to review closer: NMKL 5, NMKL 68, NMKL 80, NMKL 154, NMKL 184. Procedures: NMKL Pros 30.	Method Reassess.	Subcommittee 2

	Chemistry projects	Type	Responsible
1	Determination of heavy metals in foods (if PVM is accepted regarding testing and validation).	Method New	Stig Valdersnes (NO), Eystein Oveland (NO)
2	Determination of PAH using GC/MS.	Method New	Stig Valdersnes (NO), Eystein Oveland (NO)
3	Determination of fluorescent compounds.	Method New	Stig Valdersnes (NO), Eystein Oveland (NO)
4*	Determination of vitamers and total vitamin activity in foods. Nordic extension to the ISO/TR 23304:2021 - Guidance on how to express vitamins and their vitamers content.	Procedure New	Jette Jakobsen (DK)
5	Amino acid composition of different foodstuffs and the effect on proteins: follow progress and technical aspects.	Project	Jette Jakobsen (DK)
6	Procedure No. 4, 2009, 3 Ed. Validation of chemical analytical methods.	Procedure Revision	Dag Grønningen (NO)
7	Methods fit for purpose for new feed and food ingredients. Arrange small Nordic trials with side-streams and micro- and macroalgae.	Project	Eystein Oveland (NO), Jette Jakobsen (DK)
8	Methods reassessed at annual meeting 2021 that were decided to review closer: NMKL 38, NMKL 100, NMKL 139, NMKL 168, NMKL 23, NMKL 55, NMKL 107, NMKL 138.	Method Reassess.	Jette Jakobsen (DK), Dag Grønningen (NO), Natasa Desnica (IS), Rune Ellegaard Lyngsø (DK), Stig Valdersnes

	Sensory projects	Type	Responsible
1	Guidelines for sensory evaluation of Nordic berries.	Procedure New	Mari Sandell (FI)
2	Referent guidelines for sensory methods.	Procedure New	Sara Jonsson (SE)
3*	Sensory quality control of beer.	Procedure New	Gunnþórunn Einarsdóttir (IS), Tuomo Tupasela (FI)
4	NMKL 201, 2017. Quality control test - Sensory evaluation of marine oils.	Method Revision	Wenche E. Larssen (NO)
5	Sensory analyses of side-streams.	Project	TBA
6	Procedures reassessed at annual meeting 2021 that were decided to review closer: Pros No 6, No 16, No 21, No 28. No 31 was reassessed and do not need revision.	Method Reassess.	Grethe Hyldig (DK), Tiina Ritvanen (FI), Tuomo Tupasela (FI), Gunnþórunn Einarsdóttir (IS), Hilde Kraggerud (NO), Liv Bente Strandos (NO), Linda Andersson (SE)

	NordVal International	Type	Responsible
1	NordVal International certifies microbiological methods according to the EU regulation (EC 2073/2005). In the new directive on drinking water (EC 2020/2184), alternative methods might be used if assessed for equivalence to methods given in the regulation. The assessment shall be carried out according to specified protocols. NordVal International is the only organization in Europe that also performs a third-party evaluation of test-kits for chemical methods.	Procedure New	Natasa Desnica and Subcommittee 5
2*	Evaluation and certification of 7 new methods with 2 new potential customers on allergens (chemical) and Listeria (microbiology).	Method Review	Subcommittee 5
3*	Bi-annual review of the 26 existing certificates with potential extensions to new matrices.	Method Review	Subcommittee 5

*, Financial support is available, allocated from NMKL.

Accounting 2021

NMKL had 104 subscribers that were active during parts of 2021, and fewer renewals throughout 2021 than previous years. NMKL had the following single sales in 2021: 87 single sales of methods and 19 single sales of procedures. NMKL will launch a new website in 2022 and aim to increase the number of subscribers as some were lost during 2021; we will introduce one subscription covering both methods and procedures for a lower price. The accounting in DKK for 2021 is presented below.

NMKL-HI driftsregnskap 1.01.21 - 31.12.21 (DKK)

Omregnet NOK til DKK med gjennomsnitts kurs 01.11.20 - 31.12.2020: 0,72

	Note	Initielt budsjett 2021	Revidert budsjett 2021	Regnskap 01.01.21 - 31.12.21
Inntekter				
Øvrige inntekter	1	573 840	396 000	593 432
Agio gevinst				775
Prosjektmidler fra NMR til sekretariatet		500 000	500 000	400 985
Sum inntekter		1 073 840	896 000	995 193
Utgifter				
Personale utgifter		846 205	846 204	945 210
Varer og tjenester	2	439 200	155 520	54 144
Avgift Stripe				1 692
Agio tap				6 938
Sum utgifter		1 285 405	1 001 724	1 007 984
Årets resultat		-211 565	-127 325	-12 792

Balanse pr. 30.12.2021 (DKK)

		31.12.2020	31.12.2021
Aktiver (eiendeler)			
Debitorfordringer (kundefordringer)	3	38 070	239 560
Prosjektfordringer (andre utestående fordringer)		-	-
Mellomværende HI		1 331 775	1 816 698
Aktiver i alt		1 369 845	2 056 257
Passiver (egenkapital og gjeld)			
Kortsiktig gjeld		-	-
Overførte midler fra tidligere sekretariat		1559412	2 258 616
Overførte midler, primo (innskutt kapital)		-	-
Overførte midler, regnskap tidligere år		-	-189 567
Overført resultat, regnskapsår		-189 567	-12 792
Passiver i alt		1 369 845	2 056 257

Noter til driftsregnskap pr. 31.12.2021 (DKK)

	Initielt budsjett 2021	Revidert budsjett 2021	Regnskap 01.01.21 - 31.12.21
Note 1: Øvrige inntekter			
Løssalg	36 000	36 000	63 990
Abonnement (44 aktive)	271 440	93 600	49 363
NordVal sertifikater	252 000	252 000	480 079
Kurs	14 400	14 400	-
Sum	573 840	396 000	593 432

	Initielt budsjett 2021	Revidert budsjett 2021	Regnskap 01.01.21 - 31.12.21
Note 2: Varer og tjenester			
Reiseutgifter	144 000	14 400	35 360
Honorar - oversettelse	57 600		-
Årsmøte		7 200	-
Interne projekter	36 000		-
Kontor artikler + div	14 400	14 400	6 085
WEB + PC	72 000	86 400	12 079
NordVal International	43 200	18 000	-
Rekruttering	36 000		-
Stipend (AOAC virtuell konferanse)	14 400	720	620
Kurs	21 600	14 400	-
Sum	439 200	155 520	54 144

	Initielt budsjett 2021	Revidert budsjett 2021	Regnskap 01.01.21 - 31.12.21
Note 3: Debitorfordringer			
Løssalg mv.			-
Sum			-