

Towards the harmonisation of analytical methods for monitoring food quality and safety in the food supply chain

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International Association for Cereal Science and Technology

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Progress

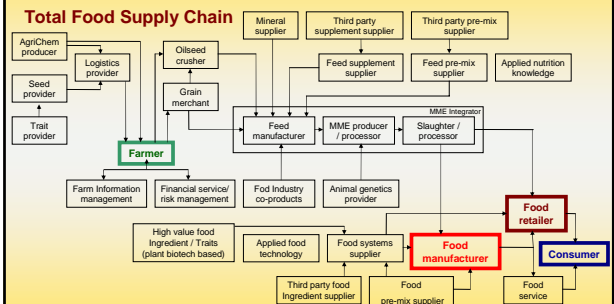
June 2005	Submission Deadline for Stage 1
December 2005	Positive Evaluation Stage 1
February 2006	Submission Deadline Stage 2
May/June 2006	Positive Evaluation Stage 2
June 2006	Invitation to Start Negotiations
October 2006	Acceptance of Technical Annex
November 2006	Invitation to sign the Contract with the EC
15 January 2007	Contract was signed by the EC
1 February 2007	Start of MoniQA NoE

Timetable

24 November 2006	First WP Leader Meeting, Vienna, Austria
December 2006	First Draft of Consortium Agreement by email
Nov. 2006 – Jan. 2007	Small WP Meetings with key contributors to structure work and establish smaller working groups
1 February 2007	Start of MoniQA
1+2 February 2007	Second WP Leader Meeting, Vienna, Austria Discussing Consortium Agreement
20-22 March 2007	MoniQA Kick-off Meeting; Vienna, Austria

Background



- **New EU Regulations**
(e.g. food allergens, mycotoxins, other food contaminants)
- **Fragmentation of research and standardisation**
(e.g. little or no communication between research centers and standardisation bodies, duplication of work, more collaboration, decreasing costs...)
- **Limited validity of standardisation/validation certificates**
- **Lack of appropriate validation protocols for new and rapid methods**
- **Lack of reference methods and reference materials for some analytes**



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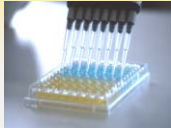

Need for rapid methods

- **Fast results for rapid intervention**
 - Control and inspection of in-coming raw material
 - Fast screening for decision making
 - Short storage and release/distribution times
 - Required traceability, liability, documentation
- **Low cost equipment**
- **Low qualification of operator required**
- **Low or high throughput**
- **HACCP, quality control**



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Rapid method format

- **Immunochemical detection methods**
 - ELISA
 - Dipstick Assay/Lateral Flow Device (LFD)
 - Fluorescence Polarisation
 - Biosensors/Lab on a chip
- **DNA-based methods**
 - PCR + gel electrophoresis
 - PCR-ELISA
 - Real-Time PCR
 - Biosensors/Lab on a chip



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Method Validation

Aim:
 Demonstration "fit-for-purpose"
 Setting standards

- **Internal laboratory validation**
 - In-house validation
- **External third party validation**
 - Inter-laboratory validation
 - Ring trial
- **Proficiency testing**

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Standardisation

Method

⇒

Single Lab
Validation
Provider

⇒

Third Party
Validation
Provider or
ICC, AACC, etc.

⇒



Approved
Standard
ICC, AACC, etc.

Idea Research	Company Performance tested First results Repeatability	Performance data Fit for purpose Ring trial Min. 8 laboratories Repeatability Reproducibility	Official protocol Legal value National law International trade
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⇒

ISO/CEN
Standard

⇒

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Need for Standardisation

- **Increasing product quality**
- **Reproducible quality**
- **Improving communication**
e.g. between breeders/millers/bakers
- **(Inter)National trade**
- **Laboratory Accreditation (ISO)**
- **Demonstrated "fit-for-purpose"**
- **Reliable/reproducible (quantitative) results**

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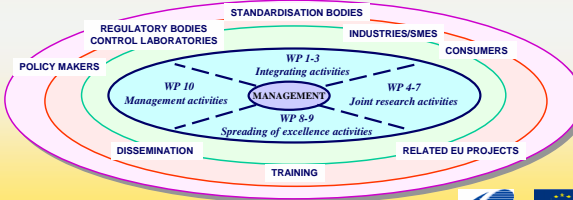
FP6-2005-FOOD-4-A



MoniQA NoE

Towards the harmonisation of analytical methods for monitoring food quality and safety in the food supply chain

Countries Involved:
 AT, BE, BG, DE, ES, FIN, GR, HU, IT, NL, NO, PL, TR, UK
 China, Egypt, Indonesia, Israel, New Zealand, Vietnam

EU funding: 12.3 M €



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Strategic Objective

Durable integration and merging research activities, personnel and infrastructure.

Priority T5.4.5.1
Quality and safety control strategies for food (NoE) with *INCO* participation

Workshop 1 (M1-M18) Harmonisation vision Resource inventories Knowledge mapping Assess best practice	Workshop 2 (M19-36) Full integrative concept Plan common HR mgmt Sustainability strategies Joint education concept	Workshop 3 (M37-M54) Joint research agenda Shared infrastructure Mobilised personnel Launch global concepts	Workshop 4 (M55-M60) Sustainable Network Harmonised methods & Standards Stakeholder confirmation
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MoniQA Network of Excellence

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Work Packages

WP1	Coordinating and merging research portfolios
WP2	Personnel exchange and mobility
WP3	Achieving sustainability
WP4	Harmonisation and standardisation of analytical methods
WP5	Advanced process and ICT technologies
WP6	Development of database for food safety hazards
WP7	Economical impact and cost efficiency
WP8	Dissemination and Communication Management
WP9	Joint education programmes, training tools and supervisory bodies
WP10	Consortium Management

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I. For Durable Integration (VTT, FIN, and CER, BE)

- Merge partner strengths** through shared use of infrastructure into a portfolio of synergetic research to meet emerging food quality and safety challenges on global scale.
- Establish a mobility programme** to promote the exchange of personnel for both short term secondments and full relocation within the network of participant institutions.
- Achieve a sustainable network** to ensure durable integration of international research institutions through development of joint economic models, research programmes and intellectual property.

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II. For Joint Research (CSL, UK, and Eurofins, DE)

- Develop harmonisation guidelines** for risk assessment and standardisation of detection methods and technologies in food safety and quality.
- Assess implications of advanced processing and monitoring technologies** implemented in modern HACCP systems. Identify and prioritise gaps and needs for future food quality and safety research.
- Develop a database** of food quality and safety issues and corresponding analytical tools for food production and supply chain including information on the validation level and a thesaurus of terms and definitions used in standardisation/validation of analytical methods.

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II. For Joint Research (CSL, UK, and Eurofins, DE) Cont'd

- Analyse new EU food quality and safety regulations** with respect to industry, control and regulatory bodies and **regarding their socio-economic** impacts in terms of efficiency, effectiveness and consistency, their administrative costs and their impact on international trade.

WP 7A macro level = regulatory and trade level (ICCR)

WP 7A micro level = industry level (Uni-Bonn)

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III. For Spreading of Excellence (Q-Plan, GR, and BOKU, AT)

- Facilitate knowledge sharing** within the network and dissemination to food production and supply chain and other relevant stakeholder groups for harmonisation of, and compliance with food quality and safety standards.
- Define requirements for, and **set up training programmes** to achieve harmonised levels of know-how and skills, along with mutual recognition of academic and industrial qualifications.

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IV. For Consortium Management (ICC, AT, and CCOA, CN)

1. **Establish an efficient management structure** with quality assurance that can be sustained beyond the EC funding.

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Key Deliverables

1. The MoniQA global food quality and safety **research network**
2. A fully functional **mobility programme**
3. **A sustainability programme** and related activities
4. **Harmonisation guidelines** for analytical methods and emerging technologies
5. Report of **modernisation potential** (advanced on-line technology, research agenda 2010 – 2020).

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Key Deliverables



6. **Database** of food quality and safety issues and corresponding analytical tools
7. **Socio-Economic impact** analysis of new regulations and implementation of (new) HACCP systems
8. **Knowledge management platform and culture; dissemination activities**
9. **International curricula** of recognised training courses (including e-learning)
10. An efficient and quality assured **network management scheme** that can be sustained beyond the EC funding.

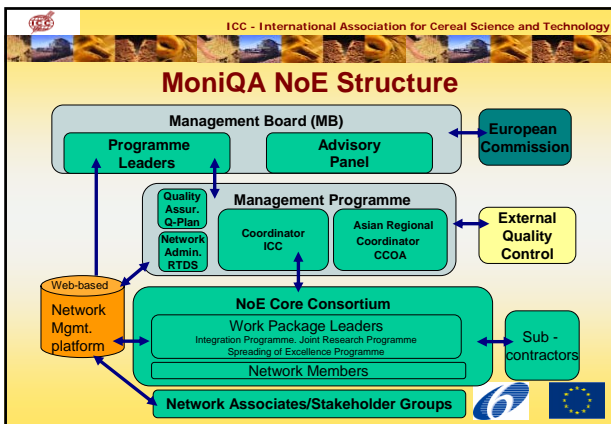
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Topics

- > **HACCP**
- > **Sampling**
- > **Use and validation of rapid methods** (DNA-based methods, ELISA-based methods, spectroscopy-based methods, advanced technologies)
- > **Availability and use of Reference Materials**
- > **Shelf life and storage of food products**
- > **Traceability of food products and components**
- > **Food safety issues** (biotoxins, food allergens, microbiological contaminants, banned and toxic ingredients, animal feed residues, plant production residues, industrial residues)
- > **Food quality issues** (authenticity of raw materials and food products, indicators for processing and storage history, shelf life quality indicators, packaging/contact materials, chemical indicators)
- > **Social and legal aspects**
- > **Economical impact**

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Advisory Panel

Substantial input for direction by Advisory Panel:

IHCP-JRC-EC, Italy	JIFSAN, USA
CEN TC 275, Germany	CIAA, Belgium
CEN Research, Belgium	BEUC, Belgium
ILSI, Belgium	AOCS, USA
ISO, Switzerland	IAM, Hungary/UK
EFSA, Italy	Codex Alimentarius Commission, Hungary
HC, Canada	FAO, Italy

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Partners

- 1 ICC - International Association for Cereal Science and Technology (Coordinator), *AT*
- 2 BOKU - Universität für Bodenkultur Wien, *AT*
- 3 Ain Shams University, *Egypt*
- 4 Campden and Chorleywood Food Research Association, *UK*
- 5 Centre d'Economie Rurale (CER Groupe), *BE*
- 6 Eurofins Analytik GmbH, *DE*
- 7 Centro Tecnológico Gaiker, *ES*
- 8 Central Science Laboratory, *UK*
- 9 Q-Plan - International Quality and Environment Services S.A., *GR*
- 10 Tübitak Marmara Research Center, *TR*
- 11 University of Food Technologies, *BG*
- 12 VocalTag Ltd., *Israel*
- 13 VTT Technical Research Centre of Finland, *FIN*
- 14 University of Naples Federico II, *IT*
- 15 Norwegian Food Research Institute, *NO*
- 16 National Technical University of Athens, *GR*
- 17 National Institute for Public Health and the Environment, *MoniQA*

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Partners cont'd

- 18 Sichuan University, *China*
- 19 Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione, *IT*
- 20 Budapest University of Technology and Economics, *HU*
- 21 Institute of Environmental Science and Research, *New Zealand*
- 23 National Food and Nutrition Institute, *PL*
- 24 Hacettepe University, *TR*
- 25 CCOA - Chinese Cereals and Oils Association, *China*
- 26 Institut Pertanian Bogor, *Indonesia*
- 27 Hanoi University of Technology, *Vietnam*
- 28 Institute of Food Research, *UK*
- 29 National Research Council, *IT*
- 30 RTD Services, *AT*
- 31 JRC- Joint Research Centre, *BE*
- 32 Rheinische Friedrich-Wilhelms Universität Bonn, *DE*
- 33 ICCR - Interdisciplinary Centre for Comparative Research in the Social Sciences, *AT*
- 34 University of Bologna, *IT*

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Related EU Projects

Logos for MoniQA and the European Union

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How to get involved?

e.g. As Associated Partner

The rights and roles of Associated Partners have been defined as following:

- No direct participation in the joint research programme,
- Voluntary participation in the "Integration" and "Dissemination" programmes,
- No participation in the Management Programme,
- No signing of a consortium agreement, just a letter of interest and a non-disclosure agreement,
- Favourable conditions for participation in MONIQA events
- Favourable conditions for MONIQA results of commercial value
- Simplified promotion to full membership if desired.

Application procedure, terms and conditions
...to be finalised by the MoniQA consortium

Expression of interest ...please complete the form!

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MoniQA Expected Results

Expected Result	Main beneficiaries outside of the Network
<i>Durable integration</i>	Authorities, standardisation bodies, industry / SMEs, consumers
<i>Workshops, conferences</i>	Associates, industry, SMEs, interest groups, consumers
<i>Mobility programme</i>	Researchers, PhD students, academic teaching personnel especially INCO and Third countries
<i>Guidelines for validation and presentation of results</i>	Associates, standardisation bodies, authorities, providers of analytical methods and technologies, SMEs
<i>Database for food safety and quality analytical methods</i>	Associates, food manufacturers, control laboratories, authorities, providers of methods, SMEs
<i>Follow up research projects</i>	Research institutions, SMEs,
<i>Better Regulations</i>	European Commission, Food Manufacturers, Consumer
<i>Research Agenda 2010</i>	Research institutions, SMEs, European Commission

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MoniQA Network of Excellence

Coordinator: Roland Ernest Poms, ICC

33 member institutions from 20 countries.

A total of **155 researchers including 40 doctoral students** are planned for integration into the network.

Duration: **5 years**

Proposed budget: **14.2 M €**
EU funding: **12.3 M €**

4 Programmes and 10 work packages



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Thank you for your attention!

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