



MoniQA

The global food safety network
Annual Report 2012

www.moniqa.org

Contents

Executive Summary	3
Major Achievements 2007 - 2012	5
Sustainability: MoniQA Association	9
MoniQA Advisory Panel	13
Building a Network	14
Working Groups	15
Research Mobility and Exchange	16
Communication and Dissemination	17
Partnerships	18
Partners	19

Monitoring and Quality Assurance in the Total Food Supply Chain (MoniQA, www.moniqa.org) was a EU-funded Network of Excellence (NoE) working for safer foods by harmonising worldwide food quality and safety monitoring and control strategies. It was coordinated by ICC (International Association for Cereal Science and Technology, www.icc.or.at) and focussed on validation and setting of performance criteria for analytical methods with an emphasis on rapid methods and emerging new testing technologies, and their applicability and reliability in routine testing. At the onset in 2007, 155 scientists from 20 countries joined the consortium, which increased to more than 500 experts from some 40 countries. The consortium committed its knowledge and resources to providing reliable information and globally agreed standards, and a more rational approach to future regulation through socio-economic impact assessment. Outputs have affected existing food research, European industry and SME competitiveness, policy and trade-relations, and consumers. It will continue to impact these sectors through the MoniQA Association (www.moniqa.org), which was launched in August 2011 to advance global collaboration in food safety and quality assurance, facilitate research and consultancy, and serve stakeholders' needs globally.

Executive Summary

More and more products are traded around the world, and ensuring these are of a high quality and safe to eat demands robust food analysis techniques. However, with different countries using different approaches, and local problems (e.g. melamine) quickly becoming global food crises, MoniQA (Monitoring and Quality Assurance in the Total Food Supply Chain) – an EU-funded Network of Excellence (2007-2012) – has supported international collaboration through exchange of information, training, and guidelines for monitoring and control of current and emerging food safety issues.

To make the food chain safer, the primary aim of MoniQA was to harmonise criteria for methods and their application in food for safety and quality analyses. Researchers formed a virtual laboratory focused on food safety analyses, and helped establish common strategies for new standards in food quality and safety assessment – particularly new technologies – along the whole food supply chain. Through a joint research programme, and staff and student exchanges, MoniQA developed or supported the implementation of solutions that are acceptable to all including consumers, manufacturers and regulatory bodies. MoniQA also developed or refined mechanisms to coordinate and merge research activities, exchange personnel, and share infrastructure, resulting in harmonised analytical strategies, new resources, and training opportunities, which extend globally.

Drivers for MoniQA included:

- Absence of reference methods and materials for some analytes (e.g. food allergens)
- Fragmentation of research and standardisation
- Growing demand for rapid methods applied by non-expert technicians outside the laboratory
- Inadequate tools for quantitative assessment of the financial impact of quality assurance schemes
- Lack of appropriate validation protocols for new and rapid methods (e.g. qualitative methods)
- Limited validity of standardisation/ validation certificates for analytical methods
- Need for consultancy and training amongst industry and SMEs
- New EU regulations (e.g. food allergens, mycotoxins)

MoniQA was organised in four Programmes (Integration, Research, Dissemination and Management) addressing strategic objectives, and comprised of 10 Work Packages (WPs), which focused on specific activities: WP 1-3 dealt with consortium building and integration activities, WP4-7 joint research and integration in practice, WP8 and 9 training and dissemination, and WP 10 management.

MoniQA outputs addressing original drivers:

- Guidelines and protocols for implementation of international standards (CEN, ISO, etc.)
- Increased reliability and comparability of analytical methods and their results
- Method validation studies and inter-laboratory ring trials
- New research projects and global collaboration
- Pool of experts and access to infrastructure worldwide, and increased international collaboration
- Reference materials for the food analytical community
- Reliable, validated information and expert advice
- Support for initiatives harmonising validation criteria, minimum performance requirements and validation protocols
- Technical and scientific support for stakeholders
- Training and continuous professional development

In total, 33 core partner and some 120 other organisations, from more than 40 countries across five continents, with stakeholders (e.g. policymakers and standardisation bodies, consumer organisations, food manufacturers, control laboratories and retailers) have worked together to advance food safety globally. Using a proof-of-principle approach, MoniQA has assured acceptance of validation and performance criteria/ requirements for a range of key analytes (e.g. food allergens, chemical residues) using primarily modern, rapid methods, and demonstrated their applicability and reliability in routine testing. MoniQA also provided protocols, guidelines and tools to harmonise and improve current approaches to monitoring and quality assurance of foods worldwide. These activities will continue through the MoniQA Association whilst future research focuses on the most urgent problems.

MoniQA's primary contributions to harmonisation:

- Trusted partnership with Codex Alimentarius and other International Standardisation Organisations
- Protocols and guidelines for method validation
- Reference and testing Materials
- Collaborative validation studies, ring trials and comparative studies
- Online tools and quality assurance (QA) guidelines
- Information, databases, links, platforms and forums



Major Achievements 2007 - 2012

1. Harmonisation challenges within the EU and between EU and trading countries

Concerns related to the different legislation/regulations and practise in horizontal issues (e.g. sampling, measurement uncertainty) globally were identified and problems associated with the interpretation of analytical results and compliance criteria addressed. This information facilitates comparison of analytical results, and supports global harmonisation guidelines (Oreopoulou *et al.* (2009) QAS **1**(1): 28-35).

2. Methods database

MoniQA-FC24 allows rapid searching of analytical methods for specific analytes including information about the degree of validation, legal requirements and limits, and the availability of methods. It is structured around two key elements, namely contaminants and commodities (or matrices) in which contaminants may pose a threat to human health. Data sources are linked to allow any commodity and/or contaminant to be searched, and all the relevant legislation as well as analytical and sampling methods in combination with information from the EU's Rapid Alert System on Food and Feed (RASFF) obtained.

3. Validation of qualitative methods

In collaboration with IUPAC, MoniQA developed a harmonised protocol for validation of qualitative methods (e.g. dipstick positive or negative). Model studies were performed using data from validation studies to investigate method performance characteristics and identify specific challenges including (a) qualitative method where the evaluation of results is based purely on a qualitative – yes/ no – basis and (b) qualitative methods based on a quantitative measurement.

4. Harmonising bulk sampling procedures

Food contaminants in bulk commodities create sampling problems. There are different sampling procedures amongst countries globally, and existing guidelines are not only vague but also ignore modern shipping practises, and sampling and analytical technologies. In May 2008, experts including MoniQA recommended changes to existing guidelines, which following feedback from industry representatives and regulators, have been ratified for future use.

5. Validation: basic requirements and checklist

MoniQA was responsible for international ring-trials validating methods for regulatory and surveillance purposes, supporting CEN, ISO and Codex Alimentarius. These studies followed IUPAC/

AOAC/ISO requirements, but MoniQA considered wider issues including recovery, normalisation, measurement uncertainty, etc. Recommendations will serve as guidelines for future ring-trials within existing standardisation programmes (QAS December 2012).

6. Validation protocol and guidelines

Results from ring-trials must be clearly described including statistical evaluation. MoniQA published guidelines for recording, collating and analysing ring trial results at the end of 2011.

7. MoniQA laboratory accreditation support tool

MoniQA developed an implementation guide for the standard accreditation management system according to ISO 17025 for food, reference and governmental control laboratories.

8. ICT in HACCP in food manufacturing

To understand the status and the preparedness of food enterprises to implement HACCP-based safety systems, and new/rapid methods and ICT technologies, MoniQA conducted two surveys.

The HACCP survey focussed on use and future needs for analysis including rapid methods and test kits as well as information and communication technology (ICT) systems for monitoring and managing food quality and safety. Seventeen countries were represented including 11 EU members (BE, BG, FI, FR, DE, GR, HU, IT, PL, ES and UK) and six non-EU members (Albania, China, New Zealand, Norway, Turkey and Vietnam). The results suggested companies are already using, or prepared to implement, new rapid methods of analysis, advanced monitoring systems and ICT management systems.

Companies were also asked to provide information about methods they use including problems encountered, and contaminants for which they need rapid methods. Participants described a gap between application of rapid methods/kits and demand for specific contaminants particularly microbiological contaminants (57.4%) and heavy metals but also food allergens and mycotoxins.

9. Socio-economic impact assessment toolbox

MoniQA developed an evaluation toolbox to better predict the socio-economic impact of new or amended regulations at various levels (i.e. EU and national administration, manufacturing and trading sectors, individual industries, companies and SMEs, and consumers) (Mazzocchi *et al.* (2009) QAS **1**(3): 195-200, Ragona *et al.* (2011) QAS **3**(1): 12-23)

10. Training and continuing professional development

MoniQA workshops delivering Food Scientists' Training were part of a module-based learning programme. MoniQA partners and experts from the wider food safety community provided lectures for users from the food industry, SMEs, food research and development centres, food control agencies and laboratories, and authorities and policy makers, consumer representatives and retailers. MoniQA also hosted multidisciplinary workshops specifically for experienced laboratory personnel, managers, etc., which were tailored to meet their needs.

11. MoniQA eFSTs, e-learning and remote education

Remote and elearning supplement face-to-face workshops, which allowed those who were unable to attend to benefit from the MoniQA training programme.

12. Quality assurance tool for MoniQA FSTs

An implementation guide for managing food scientists' training workshops according to ISO 9001 was developed, and can be used by any organisation offering MoniQA FSTs or similar training workshops.

13. Validation ring-trial: brown rice

A ring-trial for rapid pH testing of rice (dye colour-chart method for pH determination of rice grains) was organised by the China Grain Products R&D Institute Taipei (Taiwan) and involved 15 laboratories in Taiwan, Spain and Italy. This validated method determines pH for brown and milled rice grains, which is related to freshness (QAS December 2012).

14. Authenticating organic eggs

An international inter-laboratory trial amongst MoniQA partners demonstrated a method developed at RIKLT (NL) could reliably identify chicken egg production systems (i.e. organic vs. non-organic). This is only one of a few verification methods for organic produce, and the concept may be applicable with other foods (QAS December 2012).

15. Method validation and uncertainty

Some additives (e.g. intense sweeteners and preservatives) are used in foods at low concentrations, and manufacturers may use one or more to obtain the desired product qualities. Multi-component analysis for the determination of analytes at low concentration is, therefore, essential but rare. MoniQA conducted a collaborative study for method validation and measurement uncertainty in the simultaneous analysis of sweeteners (i.e. acesulfame-K, aspartame and saccharin) and preservatives (i.e. sorbic and benzoic acid) in fruit juices and yoghurt using EN 12856. This method had previously been validated only for the analysis of acesulfame-K and aspartame, independently (QAS December 2012).

16. ELISA validation guidelines for milk and egg

In collaboration with the AOAC Presidential Taskforce on Food Allergen Methods, kit manufacturers, and government and industry representatives, MoniQA developed guidelines for validation of food allergen ELISA-based test kits, which were published in April 2010 (Abbott *et al.* (2010) *J AOAC Int.* **93**(2): 442-450).

17. ELISA validation guideline for gluten

Gluten-free products serve consumers who are sensitive to gluten or gliadin, generally arising from a genetic pre-disposition to coeliac disease, as well as those who choose to exclude gluten from their diet. MoniQA published guidelines for low-gluten/gluten-free determination in collaboration with the AOAC Presidential Taskforce on Food Allergens Methods, HealthCanada, the EC Joint Research Center IRMM and other Standardisation Organisations and test kit manufacturers (Bugyi *et al.* (2012) *J AOAC Int.* **95**(4): 382-387).

18. Incurred milk reference materials

There is a major shortfall in the provision of reference materials for ELISA kit calibration and performance evaluation. MoniQA generated two commutable incurred reference materials; one cookie-based and the other soya-based infant formula. These materials underwent extensive homogeneity testing, and were used in the MoniQA ring-trial examining ELISA kits for casein (Dumont *et al.* (2010) *QAS* **2**(4): 208-215).

19. Incurred gluten reference materials

MoniQA helped with the production of a global gluten standard in collaboration with ICC, HealthCanada, Agri-Food Canada, FARRP USA, National Measurement Institute Australia, ESR-New Zealand, and the European Prolamine Working Group, which includes international coeliac societies (Bugyi *et al.* (2012) *J AOAC Int.* **95**(4): 382-387).

20. Quantitative food allergen ELISA ring-trial

MoniQA conducted a ring-trial with five commercially available ELISA kits (ELISASYSTEMS, Neogen, Morinaga, r-biopharm, Tepnel) using MoniQA's milk reference materials (i.e. cookies and soya-based infant formula) at five different concentrations. Laboratories (20) around the world including Australia and North America participated; data will be published following evaluation.

21. Milk in bakery products and infant formulae

MoniQA's reference materials for calibrating ELISA kits and reference standards were employed in a proficiency testing scheme coordinated by FAPAS, and partners were amongst the global network of participating laboratories (Dumont *et al.* (2010) *QAS* **2**(4): 208-215).

22. Validation of LC-MS-MS food allergen analysis

Detection of allergens in foodstuffs and ingredients is an important part of allergen management by the food industry. Generally, immunological methods (e.g. ELISA) or PCR are used, but there is increasing interest in the potential of mass spectrometry (MS), particularly for complex mixtures and as an orthogonal method for validation of ELISA-based methods. MoniQA developed and published best practice guidelines for analysis of food allergens by MS.

23. Harmonized protocol for validation of LC-MS-MS methods for chemical food contaminants

Despite application of MS in trace analysis for more than 25 years, there are few established protocols for the identification and quantification of chemical residues and contaminants. MoniQA published guidelines for the application of MS in analysis of chemical food contaminants.

24. Multi-mycotoxin LC-MS-MS method validation

MoniQA executed and published the results of a proficiency test (PT) for simultaneous determination of legislated mycotoxins in maize using LC-MS (MS) methods.

25. Dioxins screening and confirmatory methods

MoniQA investigated differences arising between methods commonly used in the EU (e.g. screening and confirmatory) for dioxin and PCB monitoring, and determined false positives in bioassay methods, such as CALUX, are caused by ligands other than dioxins (e.g. related emerging contaminants) and the food matrix, promoting better understanding of results globally.

26. Impact of chemical contaminants in foods

Chemical contaminants include pesticide and veterinary drug residues, fungal toxins (mycotoxins), food ingredients, environmental contaminants and natural toxins. The impact of chemical contamination on society may be economic, environmental, social and/ or political, and the cost range from a few thousand to many millions of Euros. Monitoring and surveillance schemes have prevented/reduced the impact of chemical contamination and improved consumer protection. But, these approaches are costly and learning from past events may help refine existing food safety assurance measures. A workshop (ESR, New Zealand, 2011) brought together experts from socio-economics and food safety assurance to generate a comprehensive assessment of such incidents. It is hoped this will be useful for the food industry and regulators as well as researchers and consumer representatives, and ensure a better appreciation of the impact of chemical contamination in food safety monitoring (Thomson, Poms & Rose (2012) QAS 4(2): 77-92).

27. Microbiological dilution method: a comparative study

Microbiological analyses of foods differ markedly from the assessment other food contaminants (e.g. residues, chemicals). Microorganisms are enumerated directly (e.g. counting colony-forming units) and indirectly (e.g. metabolic activity) But, because the analyte is a living/ viable organism, the results are easily affected by pH, temperature etc., which is particularly important in foods that contain a wide range of ingredients, exerting a variety of effects on target organism(s). Standard procedures with the aim of obtaining comparable and replicable results have been developed, but the results are highly variable. Although these protocols are generally the same, there are some significant differences and not every aspect of the method is specified (e.g. choice of dilution media). MoniQA examined and published the impact of diluent choice on the performance of viable count methods.

28. Re-validation of Campylobacter species PCR tests

MoniQA re-validated PCR-based methods for determining Campylobacter species, which have experienced substantial taxonomic changes, making identification, particularly of newly-described Campylobacter species and sub-species, increasingly unreliable. This trial provided a sound basis for improving procedures leading to standardisation of PCR-based analysis. Purified DNA extracts from 25 strains including newly described Campylobacter spp. such as *C. insulaenigrae*, *C. peloridis*, *C. volucris* and *C. lari* subsp. *concheus* as well as a few well-studied positive controls (e.g. genome-sequenced *C. jejuni* subsp *jejuni*) were included. Each laboratory used its own in-house PCR-based assay and checked repeatability and reproducibility, and intermediate repeatability on two separate occasions (e.g. Monday and Thursday of the same week).

29. Nanotechnology-enabled food products

Risk assessment of nanotechnology-enabled food is difficult because of the large numbers of uncertainties. An approach that may address these uncertainties with the use of expert judgment was developed with support from MoniQA. The validated model captures and models experts' preferences, and may be suitable for risk assessment of real nanotechnology-enabled food products in the future.

30. Infrastructure sharing

Sharing research infrastructures establishes durable integration of leading research organisations, industrial partners and SMEs as well as access to research facilities, technological platforms, databases, analytical tools and knowledge. MoniQA created an inventory of research infrastructure and resources for each partners using a

standardised approach based on methods and analytes. This offers an overview of research infrastructure including on-site facilities, equipment and expertise, patented technologies, methods and databases, etc. as well as information about availability, and terms and conditions of use.

31. MoniQA Exchange and Mobility programme (see Researcher Exchange and Mobility)

32. MoniQA Association (see Sustainability)

33. Initiating research projects/ proposals

MoniQA established a scientific network and provided the necessary infrastructure to boost international research co-operation in the area of food quality and safety. Partners developed research proposals for national and international calls as well as collaborative research calls and other EU Instruments for funding within Framework Programme Seven (FP7). Those individuals with skills and experience of large collaborative projects helped less experienced partners, and training in soft-skills such as proposals and project management was provided in Europe and Asia.

34. Facilitating cooperation agreements

Bilateral research and collaboration agreements arose through MoniQA. ESR (NZ) and CCOA (CN) signed a formal Memorandum-of-Understanding, which signals closer cooperation in detecting food hazards in the food chain, particularly in the area of mycotoxins. A similar agreement was signed between ESR (NZ) and ICC (AT), leading to the research exchange visit by Roland Poms (ICC) to ESR for eight months in October 2010.

35. MoniQA Conferences

MoniQA organised a series of international food safety and quality conferences. The first, 'Increasing trust in rapid analysis for food quality and safety', brought together more than 200 food safety scientists, socio-economists, regulators, industry and trade representatives, and the media. The second, 'Emerging and persisting food scares: Analytical challenges and socio-economic impact', was held in Krakow (PL) and included sessions from two EU-funded projects, BioCop and CONfIDENCE. The third conference, 'Food safety and consumer protection', took place in Varna (BG) on 27-29th September 2011, and hosted the first MoniQA Association General Assembly. 'Food safety under global pressure of climate change, food security and economic crises', the fourth conference, will take place in Budapest (HU) on 26th February-1st March 2013.



36. MoniQA Outreach (see Communication and Dissemination)

37. QAS: Partnership with Wiley-Blackwell

QAS - Quality Assurance and Safety of Crops & Foods is an international journal publishing peer-reviewed scientific research papers and review papers in the areas of cereals, grain crops, their quality and issues relating to food safety. Published by Wiley-Blackwell, this journal is supported by the MoniQA Association and ICC, and has been acknowledged widely for providing peer-reviewed research in the area of food safety and quality assessment.

Sustainability: MoniQA Association

The European Commission funded MoniQA for five years (2007-2012) with the expectation that sufficient momentum would be achieved to ensure some form of sustainable presence, adding-value to the initial investment. To this end, a business model was developed including monitoring and exploitation of intellectual property to secure future financing, and the legal agreements necessary to create an independent non-profit-distributing Association, established in Austria, were sought from the consortium. Launched in 2011, the MoniQA Association comprises some original partners – some are prevented by the legal statues from joining any organisation offering commercial products or services – associate members, and new organisations from amongst the various stakeholder groups such as analytical laboratories, food manufacturers and retails, research organisations and government departments.

The mission of the MoniQA Association is to facilitate international research collaboration, and enable services and products for food safety and quality assurance. Members will also contribute to the development and validation of analytical methods, and provide training/ continuing professional development (CPD), consultancy services and socio-economic impact assessment through the Association.

The MoniQA Association was registered as a non-profit-distributing association (Verein) in Vienna (AT), and is subject to the laws of that jurisdiction, in August 2011, and was launched at the 3rd MoniQA International Conference in Varna (BG) on 29th September 2011.

The MoniQA Association offers:

- An international pool of experts with multidisciplinary expertise
- State-of-the-art information in advance
- Portal facilitating guidelines, protocols, links, and scientific publications
- Membership to any interested organisation in all countries
- Dialogue with Technical Committees (ISO, CEN, Codex, etc.)
- Training workshops, webinars, and other educational courses
- Scientific conferences and a platform for networking and cooperation
- Collaborative research, project management services, and mobility and exchange programmes
- Reference materials and validation studies

Founding Members

#	Name	Country	Entry year
1	Shams University	EG	2011
2	Budapest University of Technology and Economics	HU	2011
3	Campden BRI	UK	2011
4	Centre d'Économie Rurale (CER Groupe)	BE	2011
5	Chinese Cereals and Oils Association	CN	2011
6	Eurofins CTC/Analytik GmbH	DE	2011
7	Fundacion Gaiker	ES	2011
8	Hacettepe University	TR	2011
9	Hanoi University of Science and Technology	VN	2011
10	Institut Pertanian Bogor	ID	2011
11	Institute of Environmental Science and Research	NZ	2011
12	Institute of Food Research	UK	2011
13	International Association for Cereal Science and Technology	AT	2011
14	International Quality and Environment Services S.A.	GR	2011
15	National Food and Nutrition Institute	PL	2011
16	National Research Council	IT	2011
17	National Technical University of Athens	GR	2011
18	Norwegian Institute of Food, Fisheries and Aquaculture Research	NO	2011
19	RIKILT Institute of Food Safety	NL	2011
20	RTD Services	AT	2011
21	Sichuan University	CN	2011
22	The Food and Environment Research Agency	UK	2011
23	Tübitak Marmara Research Center	TR	2011
24	Universität für Bodenkultur Wien - Department für Lebensmittelwissenschaften und Lebensmitteltechnologie	AT	2011
25	University of Bologna	IT	2011
26	University of Food Technologies	BG	2011
27	VTT Technical Research Centre of Finland	FI	2011

Ordinary Members

28	All-Russian Scientific Research Institute for Grain and Products of its Processing	RU	2011
29	American Oil Chemists' Society	US	2011
30	Bioforsk - Norwegian Institute for Agricultural and Environmental Research, Plant Health Division	NO	2011
31	China Grain Products Research & Development Institute	TW	2011
32	Department IFA-Tulln der Universität für Bodenkultur Wien	AT	2012
33	Guangdong Inspection and Quarantine Technology Center	CN	2011
34	Instituto de Ciências e Tecnologias Agrárias e Agro-Alimentares	PT	2012
35	Laboratory of Veterinary Pharmacology, University of Chile	CL	2011
36	Medical University of Varna	BG	2011
37	National Pingtung University of Science and Technology	TW	2011
38	Neogen Europe Ltd	UK	2011
39	Progene Ltd.	BG	2011
40	R-Biopharm AG	DE	2011
41	Thermo Fisher Scientific GmbH	DE	2012
42	United States Pharmacopeia	US	2012
43	Veterinary and Agrochemical Research Centre	BE	2011
44	Waters Corporation	UK	2012

Ordinary Member Application Form

I wish to apply for

ORDINARY MEMBERSHIP of the MoniQA Association

Full name and title*	
Organisation/Company*	
Address*	
Email*	
Phone*	
VAT number (if within the EC)	

All corporate and personal data will be treated confidentially. Fields marked * to be filled in mandatory.

Membership becomes effective upon receipt of this formal application form by the MoniQA Secretariat who will then issue a membership invoice for 12 consecutive months. To renew membership, subsequent invoices will be issued in advance and are payable no later than the end of the subscription period unless a written resignation is received by the Secretariat, giving at least three months notice.

Fees: Ordinary members pay an annual fee of €1000

The MoniQA Association is a non-profit distributing association (Verein) established in Vienna, Austria and subject to the laws of that jurisdiction.

If I become a Member of the MoniQA Association I agree to abide by the Articles of Association (which are downloadable at www.moniqa.org/association)

Signature:

Date:

Send to: MoniQA Association
c/o ICC Headquarters/General Secretariat
Marxergasse 2,
A-1030 Vienna
Austria

Email: moniqa@moniqa.org

Web: www.moniqa.org

MoniQA Association FAQs

How is the MoniQA Association structured? Are there different kinds of membership?

The Association has Founding and Ordinary Members. Founding membership was open only at the inception of the Association to the Original Members of the EU-funded Network of Excellence (FOOD-CT-2006-036337, MoniQA). Ordinary membership is, in principle, open to any organisations, based on an application process and approval by the Supervisory Board.

What are members' rights?

Both Founding and Ordinary Members (in good financial standing) have the right to: (a) vote at the General Assembly, (b) nominate a founder member representative as a member of the Supervisory Board, (c) submit proposals to the General Assembly, and (d) be elected to the Scientific Advisory Committee. Additionally, Founding Members may sit on the Supervisory Board.

What duties do members have?

It is the duty of all members to promote the activities of the Association to the best of their ability, observe the statutes, by-laws and decisions of the General Assembly and Supervisory Board, and pay their subscription fees in good time. Members should not engage in any discussions or exchanges of information concerning commercial or competitively-sensitive issues, which includes, but is not limited to, cost of products or services.

What kind of entity is the MoniQA Association?

The MoniQA Association is registered as a non-profit-distributing association (Verein) established in Vienna, Austria, and subject to the laws of that jurisdiction.

How is the Association managed?

Day-to-day management of the Association is outsourced to ICC. Strategic business decisions are the responsibility of an elected Supervisory Board whilst a separate Scientific Advisory Committee guides its scientific direction. The General Assembly is, ultimately, responsible for ensuring compliance with the entity's statutes and holding both the Supervisory Board and Secretary General to account with regard to achieving its goals in a scientifically-appropriate and financially-prudent manner. MoniQA applies a best practice ethics code of conduct.

Who bears liability?

According to Austrian law, liability is vested in the Association (Verein) and not individual members, except in cases of gross misconduct or negligence.

What is the MoniQA Association?

The MoniQA Association is an international group of organisations dedicated to collaborative research aimed at promoting a more secure and safer food supply.

What kind of activities does this entail?

MoniQA aims to:

- Promote the harmonisation of analytical approaches involved in food safety and quality
- Improve the knowledge-based bioeconomy through participation in relevant research programmes and facilitating research collaboration
- Provide the infrastructure, and establish an international network, for inter-laboratory validation trials for analytical methods and reference materials
- Disseminate and provide access to validated, robust data and information for food safety through, for example, online databases
- Share expertise and understanding through training courses, scientific conferences and symposia, international exchanges, expert consultancy etc.
- Publish albeit not exclusively through Quality Assurance of Crops & Food, which is jointly offered by ICC, the MoniQA Association and Wiley-Blackwell

More questions contact us at:

MoniQA Association

c/o ICC Headquarters/General Secretariat

Marxergasse 2, A-1030 Vienna, Austria

moniqa@moniqa.org, www.moniqa.org

MoniQA Advisory Panel

An Advisory Panel consisting mainly of representatives from IGOs (International Governmental Organisations) and INGOs (International Non-Governmental Organisations) advised the MoniQA Management Board on strategic concerns, and helped the consortium establish additional links with other organisations and related research projects. Members also reviewed publications and other outputs, assuring their quality and accuracy.

Expert	Short Name	Organisation Full Legal Name	Country
Andre Pirlet	Chair	Independent Consultant	Belgium
Guido de Jong	CEN Research	European Committee for Standardisation	Belgium
Margit Heinrich	CEN TC 275	CEN Technical Committee on Horizontal Methods	Germany
Selma Doyran	FAO/WHO	Codex Alimentarius Commission - Joint FAO/WHO Food Standards Programme	Italy
Samuel Godefroy	HC	Health Canada	Canada
Roger Wood	IAM	Inter Agency Meeting	Hungary
Jan Willem van der Kamp	TNO	TNO – Netherlands Organisation of Applied Scientific Research	The Netherlands
Elke Anklam	JRC-IHCP	Joint Research Centre of the European Commission - Institute for Health and Consumer Protection	Italy
Nico van Belzen	ILSI-Europe	The International Life Sciences Institute - Europe	Belgium
Joel Abecassis	INRA	Institut Scientifique de Recherche Agronomique	France
Dominique Parent-Massin	UBO	University of Bretagne Occidentale	France
Marie-Noelle Bourguin	ISO TC34	International Standards Organisation, ISO TC 34 Foods	Switzerland
David Lineback	IUFOST	International Union of Food Science & Technology	USA
Richard Cantrill	AOCS	American Oils Chemists' Society	USA



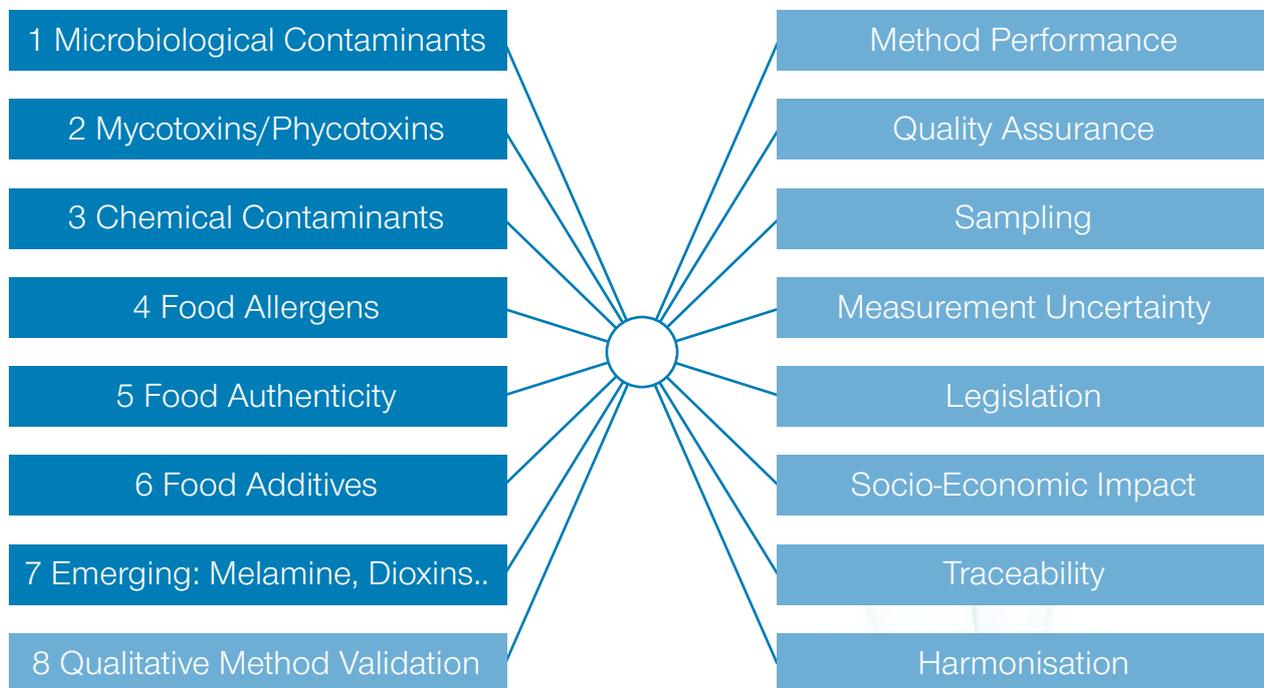
Building a Network

MoniQA was coordinated by ICC – International Association for Cereal Science and Technology (AT) and receive ca. €12.3M for its activities between 2007 and 2012. In 2007, the consortium consisted of some 150 researchers from 33 partner organisations in 20 countries, representing the European Union (15 countries), North Africa (1), Asia Minor and Near East (2), China and Southeast Asia (3) and New Zealand (1). By 2012, and with the launch of the MoniQA Association, the network had grown to more than 500 researchers and food safety experts representing 105 organisations from 40 countries across five continents through links with other EU-funded research projects in FP6 and FP7 as well as Associate Partnerships with more than 80 other organisations, companies and government departments. Associate Partners signed a Memorandum-of-Understanding with MoniQA, which assured free access to MoniQA information and reduced rates for attending events and training. Associate Partners were also able to join the MoniQA Association as full members.

Country of origin of MoniQA Associate Partners	Number of Institutions
Argentina	1
Australia	3
Austria	3
Belgium	2
Benin	1
Bulgaria	1
Canada	1
Chile	2
China	5
Croatia	1
Cyprus	1
Czech Republic	1
Denmark	1
Egypt	2
France	3
Germany	6
Greece	2
Iran	1
Ireland	1
Israel	1
Italy	8
Jordan	1
Korea	1
Lithuania	2
Macedonia	2
Norway	1
Poland	1
Portugal	2
Russian Federation	1
Slovenia	1
Spain	1
South Africa	2
Switzerland	1
Taiwan	1
Turkey	6
United Kingdom	10
United States	3
Uruguay	1

Working Groups

Six analyte-specific Working Groups (WGs) were established to work horizontally, across the 10 Work Packages, and seek input from stakeholders and members of the MoniQA Advisory Panel. A WG focussing on Emerging Issues was established, following media reports about melamine in China, with the aim of providing easily accessible scientific information about contaminants or specific issues and analysis methods. The WG 'Validation of qualitative methods' was a joint undertaking with IUPAC. Using models, its goal was to generate sufficient data to serve as the basis for design of harmonised protocols for qualitative methods validation (e.g. dipstick assays).



Each WG followed a flexible work plan identifying the major issues in their area and the likely future needs in consultation with stakeholders, e.g. food industry, food allergic consumers. The WGs proved to be an effective tool for tackling analyte (e.g. food allergens) and research-specific (e.g. qualitative analysis) issues, offering critical mass whilst retaining flexibility, and they contributed significantly to:

- Fact sheets and online information on relevant topics (WP8)
- Harmonised protocols in collaboration with standardisation bodies (WP4)
- Infrastructure availability and access (WP1)
- Inter-laboratory ring trials for the validation of food safety related methods (WP4)
- MoniQA-FC24 database (WP6)
- Pinpointing analytical challenges, needs and future priorities with stakeholders (WP5)
- Publishing state-of-the-art review papers, reports and short communications (QAS)
- Socio-economic impact assessment tool and case studies (WP7)
- Speakers for MoniQA workshops and technical sessions at various conferences (WP10)
- Support for policymakers, industry, SMEs and analytical laboratories (WP4)
- Technical sessions and round-table discussions at MoniQA International Conferences
- Training and continuing professional development (WP9, WP2)
- Validated reference materials for food allergen, mycotoxin and gluten analyses (WP4)

The goal of MoniQA, and thus the WGs, was to reach a consensus for validation procedures and standards in food analysis. To protect human health, we need reliable tools and methods to assess whether the food we eat is safe and of high quality. New analytical methods are emerging that offer high throughput and easy handling solutions for industry and control authorities. Complementing traditional methods, these new rapid methods allow on-site testing of food quality and safety. However, they are not widely established and the short lifetime of many test kits means new cost and efficiency issues as well as different validation procedures.

Researcher Exchange and Mobility

Mobility of researchers and students was promoted through an Exchange and Mobility Programme (EMP), which provided financial support for both training and visits, and was developed with experience from Networks of Excellence such as NuGO and EuroFIR.

Bursaries were awarded on a competitive basis after formal application to attend MoniQA Food Scientists' Training (FST) workshops. Exchange visits for proof-of-principle research, targeted training, presentations at conferences or activities related to MoniQA deliverables. These visits lasted from a few days to several months, but the awards were only made after a period of development, which ensured the aims benefited MoniQA as well as the individuals and their organisations.

MoniQA FSTs offered multi-disciplinary training, enabling knowledge and technology transfer, as well as new learning about emerging issues and soft-skills such as communication, in a flexible format, and formed part of a module-based training programme developed by MoniQA. MoniQA partners and external experts provided the training for graduate students and researchers as well as stakeholders such as the food industry, food analysis laboratories. Generally two-three days in duration, the workshops were hosted by MoniQA partners and, where ever possible, held in conjunction with MoniQA or related meetings. Some of the learning outcomes were supplemented with elearning material, and all the courses follow the MoniQA QA Scheme.

Between 2007 and 2012, the MoniQA EMP supported around 250 researchers (at all levels) from all the partners to attend 37 MoniQA FSTs and three MoniQA International Conferences using just ca. €200,000 (1.6% of the total MoniQA Grant for Integration). A further ca. €57,000 was used for 22 individual exchanges (0.4%), which supported dissemination activities, creation of the MoniQA website, development of reference material and proof-of-principle research amongst many other activities. The majority of the visits were within the EU or between the EU and Turkey, a candidate country (resulting in a new mycotoxins testing facility), but included a visit from ICC – International Association for Cereal Science and Technology (AT) to ESR – Institute of Environmental Science and Research (NZ) for eight months (1st October 2010-30th May 2011) (Roland Poms and family relocated) and another between VTT – Technical Research Center of Finland (FI) and the University of Guelph (CA) in collaboration with AFMNet Canada (30th January-30th March 2011), demonstrating the potential for inter-network collaboration.

Communication and Dissemination

MoniQA engaged actively with all stakeholders and the public at large. The website (archived at www.moniqa.eu) provided a single point of access for information about MoniQA and its outputs with dedicated areas for different audiences. Although the website was an important dissemination tool, it was not the only route through which stakeholders engaged with MoniQA. Others include:

MoniQA Executive Summary: a glossy brochure based on the annual executive summary (2007-2012) and available in hard copy as well as online, the MoniQA Executive Summary gave an overview of progress as well as future activities.

MoniQA External Newsletters: featured sections targeted towards specific audiences outlined in the dissemination plan and media strategy. An editorial called 'in perspective' gave additional emphasis to MoniQA achievements. These newsletters also contained FAQs, project news, upcoming events and training, and information about the project.

Factsheets: two-page (front and back) introductions to scientific topics and/ or MoniQA activities, highlighting important results as well as the wider issues in food quality and safety. These were written in a reader-friendly style, and provided information primarily for stakeholders online and in hard copy. Eight factsheets were published between 2007 and 2012.

Leaflets and Posters: general project leaflets provided a description of MoniQA, its aims and goals, and the partners. In addition, two posters (scientific/ general) and one roll-up were produced and updated to reflect progress; these were used at a variety of events.

Dissemination materials in multiple languages: MoniQA partners translated dissemination material to facilitate access for local audiences in languages other than English. The general project leaflet was available in 14 languages from Arabic to Vietnamese whilst other dissemination materials (e.g. newsletters or factsheets) were translated into some of these languages.

MoniQA in the media: MoniQA was featured repeatedly in local, national and international media including articles in Italian newspapers (1st MoniQA International Conference, 6-8th October 2008), an interview with the Italian TV station RAI3 and Chinese TV, food science newsletters, the Commission's CORDIS news service, the Europe Direct newsletter, the Austrian business agency newsletter, a special Turkish TV broadcast, Al Akhbar Newspaper (Egypt) and many others.

Press Releases: on special occasions, MoniQA issued press releases (e.g. 1st MoniQA International Conference, melamine activities, MoniQA at the Shanghai Expo, MoniQA database launch etc.), which were featured in CORDIS wire and on the Alpha Galileo news service.

Partnerships

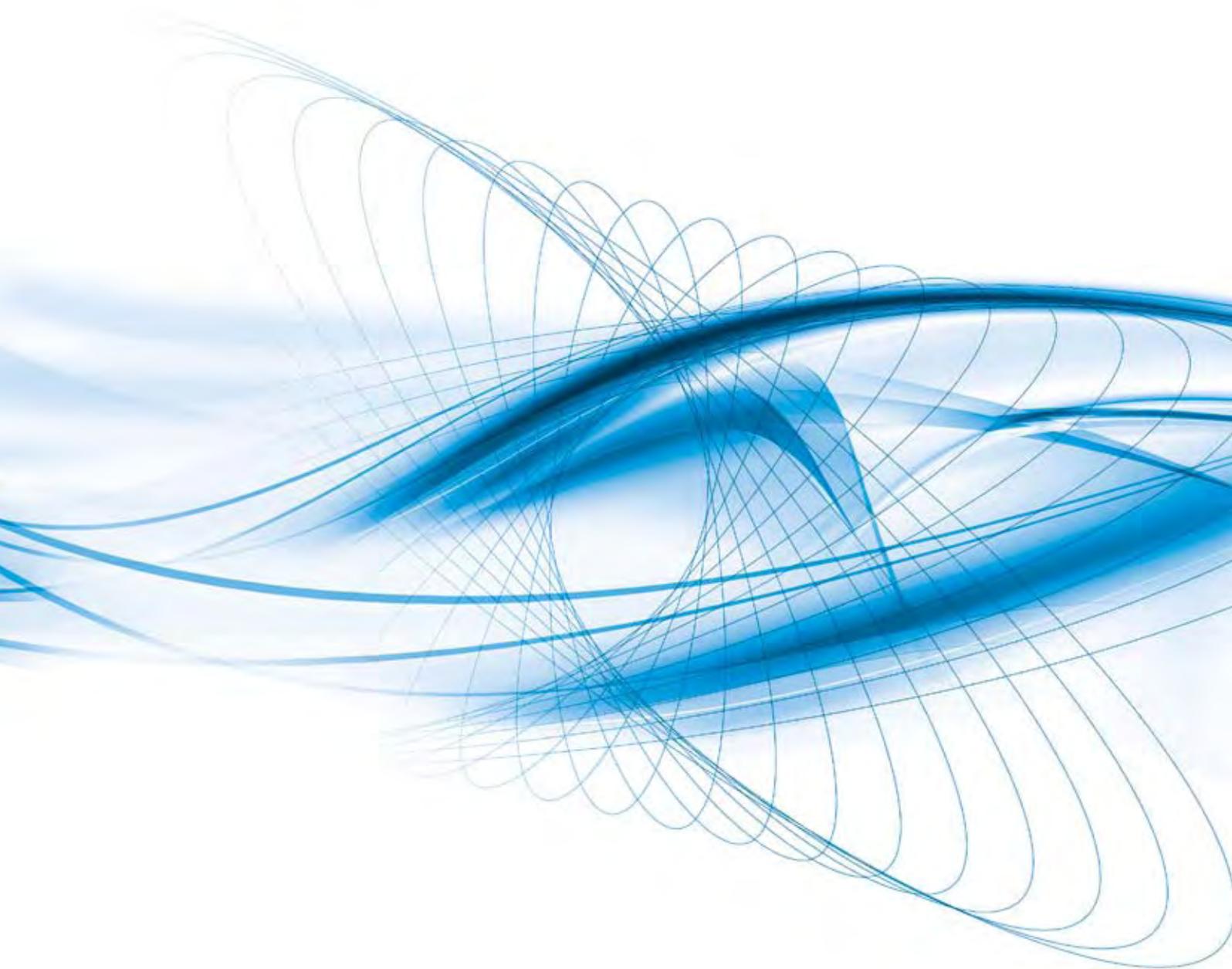
MoniQA is collaborating with the following EU projects and initiatives:

- **AFMNet (www.afmnet.ca)**: Dissemination, joint network and meeting activities, researcher mobility
- **BASELINE (www.baselineeurope.eu)**: exchange of experts and speakers at meetings
- **BioCop (www.BioCop.org)**: Dissemination, partner search and recruitment, proficiency testing schemes, method validation, reference materials
- **CEN (TC275, www.cen.eu)**: Technical advice and support in developing standards, joint validation studies, contributing to various CEN Working Groups
- **Codex Alimentarius (www.codexalimentarius.net)**: Technical advice and support in developing standards, technical/ statistical training to CCMAS delegates in a joint venture with IAM, draft terms and definition
- **CommNet (www.fp6commnet.eu)**: Joint press and media activities and conferences, dissemination
- **Confidence (www.confidence.eu)**: Dissemination, method validation
- **DeployPromis (www.deploypromis.eu)**: Evaluation of stakeholder approach and services providence
- **DG SANCO, DG Research, DG Enterprise (<http://ec.europa.eu>)**: Better future regulations, socio-economic impact assessment toolbox, speakers and trainers
- **DREAM (<http://dream.aaeuropae.org>)**: Advisory panel
- **ERA-ARD NET (www.era-ard.org)**: Dissemination, training needs in Mediterranean and African countries
- **EuroPrevall (www.europrevall.org)**: Joint stakeholder events, joint workshop, WG activities, joint publications, validation protocols and reference materials
- **European Union Reference Laboratories (<http://ec.europa.eu>)**: Information exchange, laboratory selection for ring-trials, joint validation studies, joint comparative (proficiency) testing
- **EuroFIR and EuroFIR AISBL (www.eurofir.net)**: Dissemination, exchange of information, joint workshops, and first-hand experience of Network of Excellence
- **Food for Life - European Technology Platform (<http://etp.ciaa.eu>)**: Exchange of information and identification of industry needs
- **FoodFrenz (www.foodfrenz.com)**: Research exchanges between EU and New Zealand
- **GHI-Global Harmonization Initiative (www.globalharmonization.net)**: Support for expert network and dissemination, Supervisory Panel members
- **HEALTHGRAIN and HG Forum (www.healthgrain.org)**: Joint training courses on cereal safety and quality assessment, and acrylamid determination, eLearning experience
- **IAM – Inter Agency Meeting and SDOs – Standardisation Organisations (www.aocs.org)**: Technical advice and support in developing food analytical and sampling standards, joint validation studies, various CEN/ ISO Working Groups, advising Codex Alimentarius CCMAS, joint training courses
- **IFRC – International Food Research Consortium (www.afmnet.ca)**: Joint meetings, training events, dissemination, joint workshops, research proposals and researcher mobility efforts
- **ISEKI (www.esb.ucp.pt)**: Access to the university network, elearning and educational programmes
- **ISO – International Organisation for Standardisation (www.iso.org)**: Technical advice and support in developing food analytical and sampling standards, joint validation studies, various ISO Working Groups
- **MycRed (www.mycored.eu)**: Advisory Panel, training events, dissemination, joint workshops
- **NuGO and NuGO Association (www.nugo.org)**: NoE experience, joint stakeholder events
- **PlantLibra (www.plantlibra.eu)**: project exploiting MoniQA research database
- **SAFEED-PAP (<http://safeedpap.feedsafety.org>)**: Joint validation study and use of statistical data in Qualitative Methods WG for joint IUPAC/ MoniQA protocol
- **TRACE (www.trace.eu.org)**: Dissemination, Food Authenticity WG

Partners

Country

International Association for Cereal Science and Technology (ICC)	Austria
Universität für Bodenkultur Wien (BOKU)	Austria
Ain Shams University (ASU)	Egypt
Campden BRI (Campden-BRI)	United Kingdom
Centre d'Économie Rurale (CER Groupe) (CER)	Belgium
Eurofins Analytik GmbH (Eurofins)	Germany
Centro Tecnológico Gaiker (Gaiker)	Spain
The Food and Environment Agency (FERA)	United Kingdom
International Quality and Environment Services SA (Q-Plan)	Greece
Tübitak Marmara Research Center (TUBITAK)	Turkey
University of Food Technologies (UFT)	Bulgaria
Vocal Tag Ltd. (VTAG)	Israel
VTT Technical Research Centre of Finland (VTT)	Finland
University of Naples Federico II (DSA)	Italy
Norwegian Food Research Institute (NOFIMA)	Norway
National Technical University of Athens (NTUA)	Greece
Institute for Food Safety (RIKILT)	Netherlands
Sichuan University (SCU)	China
Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione (INRAN)	Italy
Budapest University of Technology and Economics (BUTE)	Hungary
Institute of Environmental Science and Research (ESR)	New Zealand
National Food and Nutrition Institute (NFNI)	Poland
Hacettepe University (HCTU)	Turkey
Chinese Cereals and Oils Association (CCOA)	China
Institut Pertanian Bogor (IPB)	Indonesia
Hanoi University of Technology (HUT)	Vietnam
Institute of Food Research (IFR)	United Kingdom
National Research Council (CNR)	Italy
RTD Services (RTDS)	Austria
JRC- Joint Research Centre (JRC)	Belgium
Rheinische Friedrich-Wilhelms Universität Bonn (Uni-Bonn)	Germany
Interdisciplinary Centre for Comparative Research in the Social Sciences (ICCR)	Austria
University of Bologna (UNIBO)	Italy



MoniQA

working for safer foods

Secretary General MoniQA Association: Prof. Dr Roland Ernest Poms
c/o ICC Headquarters, Marxergasse 2, A-1030 Vienna, Austria

Tel: **+43 1 70772020** Fax: **+43 1 70772040** Email: roland.poms@icc.or.at

www.moniqa.org



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