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TRAINING REPORT

Food safety and quality: tailor-made training in a global context

A brief review on activities of the MoniQA NoE

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Abstract

The MoniQA ('Towards harmonization of analytical methods for monitoring food quality and safety in the food supply chain') Network of Excellence aims to overcome fragmentation in European and worldwide food quality and safety research by integrating key organizations from all over the world. Among other activities, education and training are an integral part of the MoniQA . Imbedded in the 'Spreading of excellence programme', work package 9 – 'Joint education programmes and training tools' is responsible for establishing a joint training programme for food safety and quality within and beyond the network. In addition to the ongoing work developing the MoniQA joint training programme, MoniQA offers concrete training opportunities, so-called 'MoniQA Food Scientist Training'. MoniQA Food Scientist Training workshops deal with research management skills as well as imparting technical knowledge of relevance to food scientists around the globe. Training needs for different regions as well as needs for different target groups (scientists, industry personnel) are also considered, developing strong collaboration links between network partners and other related projects.

Past and future MoniQA training events

MoniQA started its training activities by organizing a half-day workshop dealing with 'Introduction to Seventh Framework Programme (FP7) project development' on the 6 November 2007. Held at the conference centre of the Diplomat hotel in Prague, this training opportunity brought together 20 young researchers from Europe and Asia. The workshop was organized and hosted by Research and Technological Development (RTD) Services, an Austrian company specialized in the development and management of RTD projects and a partner in MoniQA. Participants were provided with a brief introduction to the MoniQA Network of Excellence, an overview to the structure of FP7, and a practical approach to developing FP7 projects. The focus was mainly on FP7 project development and began with understanding policy-driven research, and finding and analysing the best calls for project ideas as well as the necessary steps to prepare a professional and therefore competitive proposal.

After this first experience and encouraged by the positive feedback from participants, we drew up a list of workshops for 2008–2009, which it was felt would be of interest to our members. Considering the global nature of the project, and bearing in mind that the final aim is an international training programme, partners from all regions were also invited to submit proposals for MoniQA training events. This has allowed us to create a range of workshops offered in the different regions (Asia, the Mediterranean region and Europe) for different target audiences, including industry.

As leader of work package 9 (WP 9), BOKU organized the first in the series of workshops taking into consideration the available expertizes at BOKU and the needs of MoniQA partners, which have been extracted from the 'people questionnaire' established under the umbrella of work package 2. This workshop dealt with 'Safety, Micro- and Molecular Biology of Foods', and in order to meet the requirements of an international workshop, which offers widespread information on different topics, speakers from BOKU, the

Figure 1 Participants of the workshop 'Safety, micro- and molecular biology of foods' in Vienna.

Austrian Agency for Health and Food Safety and Ghent University (Belgium) were invited to participate. The workshop took place in Vienna from the 14–18 April 2008 at BOKU in Vienna. It was designed as mixture of theoretical sessions as well as demonstrations and hands-on training in the laboratories.

Participants (14, see Figure 1) took the opportunity to join this 1-week workshop to gain and/or refreshed their knowledge on risk assessment, surveillance of food borne pathogens, hygienic design and novel and rapid methods (including molecular tools) for food analysis.

An objective of WP 9 activity is to facilitate knowledge sharing within network and dissemination to food production and supply chain and other relevant stakeholder groups for harmonization of, and compliance with food quality and safety standards; to this end, we have encouraged partners to cooperate in the development of training activities.

The first example of this collaboration was the workshop 'Use of food analysis in managing food chemical contaminant risk within the food industry' (18–19 September 2008), again at BOKU in Vienna. Jointly organized between CCFRA (Campden & Cherleywood Food Research association) and BOKU, the objective of this 2-day training was to increase the awareness of prospective and newly qualified food analysts concerning the uses and limitations of analytical methods in the management of chemical contaminants within the food industry. The theoretical part dealt mainly with HACCP, use of food analysis in validation and verification (general principles, case study) and analytical testing (commercial and regulatory implications, selecting the right method). An overnight case study and syndicate exercises completed the 2-day programme.

Another example of effective networking and knowledge sharing was the 'Communication workshop', which was jointly organized by IFR and RTDS. This two half-day workshop (7–8 October 2008) was held in parallel with the MoniQA project meeting and the 1st MoniQA International conference in Rome, and was targeted towards PhD students and post-doctoral researchers wanting to improve their skills in science communication including the public and other stakeholders. The workshop covered issues such as 'why communicate?', communication in EU projects, the different expectations of journalists and scientists, identifying stakeholders and public speaking.

The Chinese Cereals and Oils Association took responsibility for organizing our first workshop in Asian, which was hosted by Nanjing University of Finance and Economics (NUFE), China on 14–18 October 2008. This workshop entitled 'Food Safety and Risk Assessment' covered several topics such as the application of modern methods (ELISA) in food safety as well as current food safety issues (e.g. Campylobacter), and offered country-specific information about the introduction and subsequent developments of food safety systems in China. Although this workshop was opened to applicants from Asia and Europe, preference was given to applicants from the Asian region. Strong emphasis was placed on the collaboration between network partners, and the resulting list of invited speakers comprised of experts from European (e.g. Institute of Food Research, International Association for Cereal Science and Technology) and Asian institutions (e.g. Jiangsu Entry-Exit Inspection and Quarantine Bureau of China, NUFE).

Budapest University of Technology and Economics (BUTE) will host a workshop in December 2008. It will offer information about 'Food safety and analytical challenges in the cereal-based food chain'. This 3-day training is focused on hot topics for food safety, and analytical questions related to raw materials such as wheat, maize, other seeds and cereal-based products. Updated overviews of the European situation, regulations and analytical solutions for all components causing the most common food safety hazards in the cereal supply chain, will be presented. Thus, mycotoxins, allergens, chemical contaminants, GM cereals and some other special areas – like sampling, application of non-destructive methods, food safety aspects of bioproduction – will be explored. Reference and rapid methods will also be addressed, their applicability and the necessary validation steps being of particular importance. In addition to the theoretical lectures, laboratory demonstrations of the available rapid methods have been organized.

BUTE is also involved in the organization of a second MoniQA Food Scientist Training (MoniQA FST). Together with ICC, the two organizations are hosting a joint Inter-

Agency Meeting/MoniQA FST on 'Method performance and the criteria approach: truth and consequences'. The workshop will be held on the 8 March 2009 in the Hotel Ramada in Balatonalmadi, Hungary.

The determination of method performance is a costly exercise that cannot be applied to all types of analyses and analytes. A criteria-based approach allows laboratories to develop and employ methods of analysis that are fit-for-purpose, despite not being subject to collaborative study. This workshop will follow the development of standard methods and the decisions necessary to implement the criteria-based approach. Examples will be provided from the analysis of trace metals, currently given in Codex standards. The workshop will also consider some issues currently facing method developers, standard developing organizations, and accreditation agencies.

A second workshop for participants from the Asian region is planned in New Zealand. The Institute of Environmental Science and Research (ESR), Christchurch, New Zealand will host a scientific workshop from 23 to 28 March 2009. The 3-day training 'Modern methods for monitoring food quality and safety' will consist of a mixture of theory and practical sessions. Emphasis will be placed on microbiological, chemical and molecular techniques for the detection and typing of food-borne pathogens or contaminants, together with data generation for use in quantitative risk assessment and risk modelling.

In order to share and/or extend knowledge and/or costs, and with the aim of reaching a wider audience, MoniQA is also interested in collaborating with other related EU-funded projects in relation to training activities. One example is the MoniQA FST workshop 'Building skills on the analysis of components formed during thermal processing of foods', which is being jointly organized by MoniQA and Healthgrain, and offers interested parties the opportunity to strengthen their knowledge on components formed during thermal processing in foods. Health beneficial compounds (e.g. antioxidants) will be discussed as well as unwanted compounds such as acrylamide. By means of two selected analytes (i.e. acrylamide and hydroxymethylfurfural) different aspects of the analysis from sample preparation (e.g. extraction, concentration and clean up) to measurement (e.g. LC-MS, LC-UV) will be covered in both theoretical and practical sessions.

Considering the fact that industry, especially SMEs, play an important role in the MoniQA consortium and also in terms of sustainability, MoniQA also intends to offer tailor-made training for these partners and future end-users. Two consortium members (CCFRA, UK and Hacettepe University, Turkey) have combined their efforts to present a 1-day seminar on 'Developments in Bakery food-safety management'. The seminar is primarily targeted at the Turkish milling and baking industries and will be run on 20 October in Ankara and again on 23 October in Istanbul. The seminar will cover the basic legal frame work underpinning food safety within the European Union as well as general levels of food safety management required at both regulatory and commercial levels. This will be supported by specific case studies based on the UK experience.

Evaluation summary

At each workshop, a standardized evaluation sheet is given to the delegates for their comments at the end of the workshop. As shown in Figure 2, the response of people participating in MoniQA FST workshops is very positive.

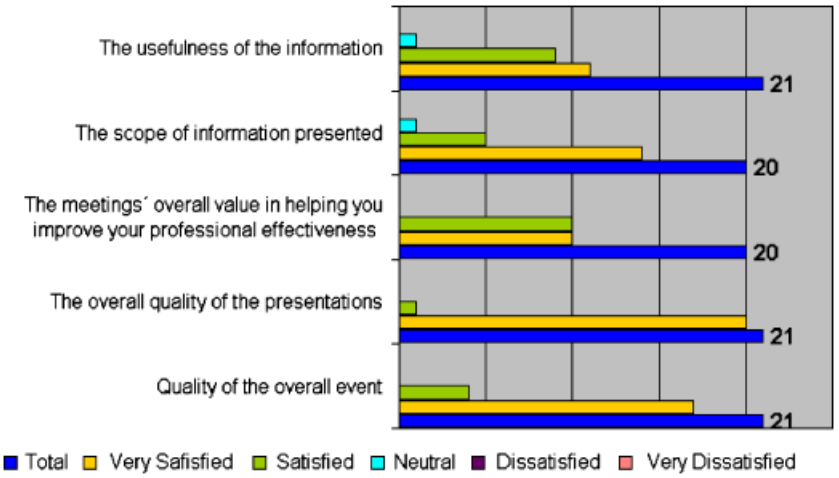

Figure 2 Selected results of evaluations from three workshops.

The information is based on the feedback from two workshops in Vienna ('Safety, Micro- and Molecular Biology in Foods' and 'Use of food analysis in managing food chemical contaminant risk within the food industry') and from the 'Communication workshop' in Rome. In the course of these workshops, 21 evaluation sheets were completed and returned. Although perhaps early days, we hope continue to be able to provide the type of quality training needed by the partners.

Most of the participants were very satisfied (17 out of 21) or at least satisfied (four out of 21) with the overall quality of the event. The quality of presentations was very satisfying for 20 and satisfying for one participant (out of 21). Twenty answered the question 'The meetings' overall value in helping you to improve your professional effectiveness', 10 were very satisfied and 10 satisfied. The scope of the presented information was very satisfying for fourteen persons (out of 20), satisfying for five and one person was neutral. Most of the 21 participants found the information useful, 11 were very satisfied, nine satisfied and one neutral but perhaps more time was needed for this individual to assimilate the new knowledge.

3. Registration formalities

All upcoming workshops are announced online (http://www.moniqa.org and other web pages like ICC, ISEKI, HEALTHGRAIN) and in several newsletters (ICC, ISEKI, EFFoST).

Interested people can register for any of these training activities by downloading and completing the application form sheet, which is available online. The completed application is then sent to BOKU (andreas.hoehl@boku.ac.at).

In addition, MoniQA members who need financial support apply for a bursary. The corresponding application form sheet is available on the MoniQA partners' homepage, and the completed document has to be submitted to Siân Astley at IFR.

4. Bursaries

In order to encourage people from the MoniQA consortium to participate in the training offered, and to increase global networking not only at the level of senior researchers but also for younger scientists, a MoniQA bursary scheme has been established, based on experience from the NuGO and EuroFIR NoEs. The bursaries are available for specific courses and workshops provided by MoniQA as well as some external conferences. Three complementary types for funding are available: full bursaries cover travel, board and lodging (appropriate accommodation and food) and course fees; a travel bursary covers travel and course fees only; and a subsistence bursary only covers board and lodging (appropriate accommodation and food) and course fees but not travel. PhD students and post-doctoral researchers must apply for a bursary following an open-call. Dates for these open-calls are published in advance on the training section of the MoniQA website. All applicants have to be registered in the 'people database' to be eligible for a bursary. Allocation of these grants is based on the application and information provided in the profile of 'people database'. Applicants not in receipt of a bursary are charged a course-fee and accommodation, but partners are encouraged to use their MoniQA funding or other resources for these individuals.

In order to receive the full amount of the bursary, all trainees with financial support have to prepare a report after the workshop ended. The report must include information on what was good about the visit as well as what could have been better and suggestions where things might be improved. In addition to this, the reporting person has to describe what his/her organization and MoniQA will gain from their attendance (e.g. help in completing a deliverable).

5. Conclusions

Two years after starting the MoniQA NoE an interesting portfolio of training workshops has been developed, offering education in different regions and considering the needs of various target groups. In a NoE, one aim is durable integration of partner organizations, bringing together experts from different sectors (e.g. industry and science) and to build on cumulative knowledge and experiences as well as on different views. These workshops, some of them organized by one partner and some organized jointly, their international promotion (among network partners and also beyond by related EU-funded projects), and last but not least the different nationalities of people participating in these trainings show that the aims of an NoE are already being achieved by MoniQA. The feedback from participants as well as partner organizations, and the interest of other projects in collaborating with MoniQA, all indicate the work is developing in the right direction.

Nevertheless, a lot of challenges are still waiting to be solved. Experience gained from past workshops has shown that the financial aspect (travelling, accommodations) is the main drawback for (young) scientists to attend training events abroad. To make the training available for a wider audience, special emphasis will be given to the

implementation of e-learning as well as encouraging greater use of the bursary scheme. Besides this, and with a view to sustainability, it is very important to merchandize the MoniQA 'brand', and demonstrate the value of MoniQA training. A concept for quality assurance, aiming to oversee implementation and confirm participant satisfaction as well as market acceptance of the qualifications has to be established. Joint supervisory bodies have to be created together with a transparent easily understood evaluation process and criteria if the continuing success and high quality of MoniQA training programmes are to be guaranteed.

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