PROSPECTUS

FAO/IAEA Workshop on Application of Quality Assurance and Control in Analytical Laboratories to Address Food Safety and Quality

**Place:** FAO/IAEA Food and Environmental Protection Laboratory, IAEA Vienna International Centre (10-14 November) and IAEA Laboratories, Seibersdorf, Austria (17-21 November)

**Date:** 10–21 November 2014

**Background to the workshop:**

Protection of the integrity of the food supply is of utmost importance in terms of food security, food safety and quality, consumer protection and international trade. Techniques to maintain and assure the quality and safety of food are necessary throughout the food production and supply chain. The need for methods to monitor and verify food safety and quality is evidenced by the ever growing list of food product recalls due to contamination. Emerging issues have highlighted the need for continued refinement, development and innovation to improve measures to ensure food safety and quality. All of the above requires intensive practical and theoretical training.

To help meet these requirements, the Joint FAO/IAEA Division will hold a workshop on Application of Quality Assurance and Control in Analytical Laboratories to Address Food Safety and Quality. The workshop comprises two different activities: the first week involves participation at the International Symposium on Food Safety and Quality: Applications of Nuclear and Related Techniques. The second week focuses on hands-on training at the FAO/IAEA Food and Environmental Protection Laboratory in the IAEA Laboratories at Seibersdorf, Austria.

**Objectives:**

The workshop will focus on food safety and quality and include protection of the integrity of the food supply chain as a holistic process, involving multiple stakeholders and requiring the application and integration of different analytical methods and technologies. It will bring together experts in these fields to present contemporary applications and discuss future perspectives and opportunities, and to provide a forum for interdisciplinary networking between all stakeholders in the farm to fork food chain. Intensive analytical training will be provided at the laboratory premises.

**Language:**

Presentations will be in English.

**Participation:**

The workshop is open to analysts from Member Countries of FAO or IAEA. The analysts should come from laboratories authorised by Governments to perform analyses for official control of food, thereby facilitating international trade and the provision of safe food supplies at the national level.

Participants wishing to present a paper or poster during the first week of the workshop are invited to submit an abstract of not more than 500 words via INDICO.

[https://conferences.iaea.org/indico/conferenceDisplay.py?confId=21](https://conferences.iaea.org/indico/conferenceDisplay.py?confId=21)

**Preconditions of participation:**

**Qualifications:** The minimum requirements are: BSc degree in chemistry, biochemistry or a related relevant subject or qualifications deemed by the organizers to be equivalent; 3 years experience in food contaminant analysis or food authenticity or traceability; and sufficient knowledge of English to be able to communicate and to take an active part in the programme of the workshop.
Commitment of nominated participants:

- Participants are requested to complete a questionnaire, attached to this Prospectus,
- Participants are requested to pass a medical examination and submit a health certificate
- Participants will be asked to give a short presentation (about 5 minutes, maximum 5 slides) during the second week of the workshop. The presentation should focus on the roles and activities of the participant’s laboratory, and the country situation with regard to food safety and quality. Further details will be provided to candidates selected to participate in the workshop.

Application dossier:

The application dossier consists of:

- an official nomination letter
- a completed questionnaire (see attached document)
- a Language Proficiency Certificate, issued by a language school or cultural institution or the British Embassy
- a medical certificate

The International Atomic Energy Agency requires potential candidates for the training workshop to be officially nominated by their governments. This means that Government Officials (e.g. Heads of the Governmental Institutions) should prepare an official letter addressed to the IAEA, stating the name of the potential candidate and providing information on the financial support (see below) of the candidates. The nomination letter should be sent either directly to the IAEA (see address below) or through the local FAO Representative, the FAO National Committee, or the National Atomic Energy Authority.

The application dossier should be returned to:

Ms Britt Maestroni
International Atomic Energy Agency
Vienna International Centre, PO Box 100
1400 Vienna, Austria
Fax: +43 1 26007
Email: Official.Mail@iaea.org

with reference to: FAO/IAEA Workshop on Application of Quality Assurance and Control in Analytical Laboratories to Address Food Safety and Quality.

Advanced nominations by fax or email (B.Maestroni@iaea.org) are encouraged.

Deadline for submitting the application dossier:

28 July 2014

Acceptance of nominations:

The nominating institutions will be informed about the selection of participants approximately 2 months before the training starts.

Administrative and financial arrangements:

The 2-week training programme will be provided free of charge by FAO and IAEA. The accommodation, living expenses and the travel cost of the participants shall be borne by the nominating governments. Limited funds are available to support the participation of analysts from least developed countries. Requests to benefit from this support should be made by the respective governments. Countries who participate in IAEA Technical Cooperation Projects are encouraged to apply for assistance through the Technical Cooperation Fellowship Programme. Health and accident
insurance will be borne by the sponsoring organisations during the participants’ stay in Austria in connection with the workshop.

The organisers of the workshop do not accept liability for the payment of any cost or compensation that may arise from damage to or loss of personal property, or from illness, injury, disability or death of a participant while he/she is travelling to and from Austria. The Governments’ nominating participants are responsible for undertaking responsibility for such coverage.

**Programme:**

The programme of the first week comprises oral and poster presentations on:

- Analytical technologies for food authentication, traceability and contaminant control
- Climate change and environmental factors that impact food safety and quality
- Chemometrics, statistical treatments and predictive models in food analysis
- Emerging opportunities and threats to the integrity of the food supply and potential control techniques
- Food irradiation and new technological approaches applicable to issues of international importance
- International guidelines/regulations for consumer protection and international trade
- Food control systems and the role of the different stakeholders in the farm to fork chain

The programme of the second week comprises on site lectures and laboratory work in the following subjects:

- Emerging contaminants
- Food contaminants analysis and sample preparation alternatives
- Aspects of the development of analytical methods, focusing on QuEChERS
- Data requirements for carrying out risk assessments and surveillance – data quality
- Food traceability
- GC- and LC-MS/MS analysis
- LC-Q-TOF & IR-MS

**Training Certificate:**

A certificate will be presented to participants who successfully complete the programme.
**ANALYTICAL LABORATORY INFORMATION:**

<table>
<thead>
<tr>
<th>Institute name</th>
<th></th>
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<tbody>
<tr>
<td>Institute address</td>
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<tr>
<td>Telephone:</td>
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<tr>
<td>Contact email address:</td>
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<tr>
<td>Contact person</td>
<td></td>
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<tr>
<td>Number of people working at the analytical laboratory and their technical level</td>
<td></td>
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<tr>
<td>Schematically draw the structure of the national food control system and the role of the analytical laboratory (use an additional sheet if needed)</td>
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</tbody>
</table>
General information

(1) Is your laboratory a National Reference Laboratory?   

Residue laboratory INFRASTRUCTURAL ISSUES:

(2) Laboratory finances and cost of the laboratory activities

Does laboratory income cover the costs?   
Does the government provide funding for running costs?   
Is funding for running costs derived from selling services?   
Is funding for running costs derived from private funds?   
Is funding for running costs provided by a donor organization?   
If yes, which organization? ________________________________________

(3) Business stream

Do you make use of marketing strategies to sell services?   
Do you monitor the activities of your competitors?   
Do you pay attention to customer satisfaction?   
Do you ensure timely delivery of services?   

(4) Management

Are managers trained in the field of management?   
Is there a performance appraisal system in place?   
Do managers evaluate subordinates?   
Do subordinates evaluate managers?   

(5) Quality of laboratory staff

Are staff members adequately trained?   
Do staff members have access to regular training updates?   
Are staff members sufficiently motivated?   
Is there a system in place for performance-based rewards?   

(6) Laboratory accommodation

Does the laboratory facility have sufficient space?   
Is there sufficient separation of activities such as sample reception, sample storage, sample preparation and analysis?
Applicant’s name: _____________________________________                                             Country: ________________________________

(7) Laboratory facilities

Is there continuous access to electricity?  
Are all equipment protected against sudden power surges?  
Are power generators realistically available and constantly ready for use?  
Is there continuous access to water?  
Is there adequate access to fume extraction facilities?  
Is instrumentation (e.g. GCs with selective detectors) switched off at night?  

(8) Availability of consumable materials

Are delays in delivery of consumables often encountered?  
Do the laboratories have sufficient stored consumables?  
Are laboratories able to provide their services on short notice?  
Does the laboratory have a sustainable mechanism for procurement of consumables?  
**How** is this ensured? ______________________________________

Residue laboratory TECHNICAL ISSUES:

(9) Does your laboratory currently test for:  
- veterinary drug residues?  
- pesticide residues?  
- mycotoxins?  
- food additives (dyes etc.)?  
- food authenticity  
- food traceability  
- others, please specify ______________________________

(10) What techniques are available in the laboratory

- HPLC–UV  
- HPLC–DAD  
- HPLC–FLUO  
- GC–ECD  
- GC–NPD  
- GC–MS  
- GC–MS/MS  
- LC–MS  
- LC–MS/MS  
- GC–IRMS-  
- Laser based spectroscopy  
- ICP–MS  
- OTHERS, specify________________________

(11) What factors influence the laboratory choice of methods?  
- availability of validated methods  
- availability of instrumentation  
- availability of reference materials or analytical standards  
- cost  
- others, please specify ______________________________

Questionnaire Page 3 of 6
(12) Choice of analytical procedures and method validation:

- Does the laboratory develop or modify analytical procedures? [ ] yes [ ] no
- Does it perform adequate method validation? [ ] yes [ ] no

(13) Equipment and maintenance

- Does the laboratory have any problem with servicing/maintenance of equipment? [ ] yes [ ] no
- Are service engineers available in the country? [ ] yes [ ] no

(14) Communication

- Does the laboratory have access to the internet? [ ] yes [ ] no
- Do all laboratory personnel have access to computers? [ ] yes [ ] no
- Do all laboratory personnel have free access to internet? [ ] yes [ ] no
- Is the laboratory working in a multi-disciplinary group, collaborating in research networks or in multi-institutional projects? [ ] yes [ ] no
- If yes, does it have access to technical support from these networks? [ ] yes [ ] no
- Does the laboratory have links to universities or other Institutes where it could find technical support? [ ] yes [ ] no

(15) Quality assurance:

- Does the laboratory have a quality system in place? [ ] yes [ ] no
- Is the quality system based on an international standard? (e.g. ISO/IEC 17025, ISO 9000, GLP) [ ] yes [ ] no
- Please specify ________________________________
- Does the laboratory implement an internal quality control system? [ ] yes [ ] no
- Does the laboratory participate in proficiency testing or check sample programmes? [ ] yes [ ] no
- If yes, which one(s)? ________________________________
- Are there written Standard Operating Protocols (SOPs) for the procedures and analytical methods routinely carried out in the laboratory? [ ] yes [ ] no
- Is the laboratory accredited? [ ] yes [ ] no
- If yes, by which authority? ________________________________

(16) What is the role of the laboratory/institute in promoting good farming practices, if any?

________________________________________________________________________________________

________________________________________________________________________

(17) Identification of constraints:

- What do you consider to be the main constraints to residues testing?
  - lack of qualified staff [ ]
  - lack of training opportunities [ ]
  - difficulty in retaining qualified staff [ ]
  - inadequate laboratory facilities [ ]
  - lack of instrumentation [ ]
  - lack of technical services [ ]
  - lack of quality systems [ ]
  - lack of planning [ ]
  - other, specify [ ]
  - other, specify [ ]
  - other, specify [ ]
  - other, specify [ ]

Questionnaire Page 4 of 6
(18) Tick the appropriate laboratory skill level for the listed items:

<table>
<thead>
<tr>
<th>Skill</th>
<th>Need Training</th>
<th>Basic Familiarity</th>
<th>Advanced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of sampling</td>
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<tr>
<td>Sample preparation methods</td>
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<td>Stable isotope analysis</td>
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<td>GC–MS</td>
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<td>LC–MS</td>
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<td>Screening methodologies</td>
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<td>Confirmation of results</td>
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<td>ISO 17025</td>
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<tr>
<td>Statistics and data analysis</td>
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<td>Radiotracer techniques</td>
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<tr>
<td>Method validation</td>
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<td>Other, specify</td>
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<tr>
<td>Other, specify</td>
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</table>
Applicant information:

(19) What is your study degree? In which field?

(20) How many years of experience do you have in food contaminant analysis? (please specify)
other (please specify)

(21) What are your position and duties in the laboratory?

(22) What is your past work experience?

(23) What is your current knowledge of English:

<table>
<thead>
<tr>
<th></th>
<th>need training</th>
<th>familiarity</th>
<th>advanced</th>
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<tbody>
<tr>
<td>Read</td>
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<td>Write</td>
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<td>Speak</td>
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<td>Understand</td>
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(24) What are your expectations from the workshop?

(25) Do you have any comments?

Date: 
Name: 
Signature: