

# Report: Pre-accession training course on Evidence based for risk assessment

**Sarajevo, Bosnia and Herzegovina  
21-22 June 2017**

## Summary

The European Food Safety Authority (EFSA) is arranging specialised training courses for scientific experts from the pre-accession countries, under the EFSA IPA projects to increase capacity and deepen the knowledge of IPA food safety society in the area of food safety risk assessment methodologies, within the remit of EFSA. The EFSA IPA grants are funded by the European Commission (EC) through Multi-beneficiary programme "Preparatory measures for the participation of IPA beneficiaries in EU Agencies".

This training report describes the outcome of a training course on "Evidence based for risk assessment", implemented under the contract no NP/EFSA/AFSCO/2017/01 "Training courses on certain aspects of food safety risk assessment for the experts from the Pre-accession countries" (the contract), concluded between EFSA and AINIA technical centre, with headquarters in Valencia, Spain. The overall objective of the contract is to organise two training courses in 2017 on certain aspects of food safety risk assessment: (i) evidence based for risk assessment in Sarajevo, Bosnia and Herzegovina and (ii) exposure assessment in Belgrade, Serbia. These training courses are expected to indirectly contribute to the harmonisation of risk assessment approaches as well as to build trust amongst EFSA, Member States and Pre-accession partners in each other's' risk assessments outputs in the area of food and feed safety.

The scientific content of the training was mainly focused on collecting and integrating scientific information (empirical evidence, raw data and expert opinion) in order to successfully provide a reliable risk estimate.

The training was held during two full days and included a balanced mix of theoretical and practical activities, with emphasis on the use of EFSA based case-studies and methodologies.

The audience consisted of representatives from the competent food safety authorities and scientific institutions in the Pre-Accession countries (25 participants from Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia, and Turkey).

The training was arranged at the premises of the Veterinary Faculty of Sarajevo and EFSA received full support from national partner organisations (i.e. the Food Safety Agency of Bosnia and Herzegovina and the Faculty itself) for the practical arrangements. Representatives from these organisations opened the training and welcomed EFSA, the audience and tutors.

According to the results of the satisfaction survey conducted after the event, the training course was considered to be very well organised and run (scores varying from excellent to very good in replies related to the general evaluation of the event).

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## 1. Background and introduction

This training report describes the outcome of the training course on “Evidence based for risk assessment”, implemented under the contract no NP/EFSA/AFSCO/2017/01 “Training courses on certain aspects of food safety risk assessment for the experts from the Pre-accession countries” (the contract), concluded between EFSA and AINIA technical centre, with headquarters in Valencia, Spain. It also includes the detailed agenda, the list of participants and speakers and the results of the satisfaction survey, conducted on-line after the training.

The overall objective of the contract is to organise two training courses in 2017 on certain aspects of food safety risk assessment: (i) evidence based evidence based for risk assessment in Sarajevo, Bosnia and Herzegovina and (ii) exposure assessment in Belgrade, Serbia. These training courses are expected to indirectly contribute to the harmonisation of risk assessment approaches as well as in building trust amongst EFSA, Member States and Pre-accession partners in each other’s risk assessments outputs in the area of food and feed safety. The contract is financed by the EFSA IPA project 2015-2017, granted by the European Commission (EC) through Multi-beneficiary programme “Preparatory measures for the participation of IPA beneficiaries in EU Agencies”. The overall objective of the programme is to support preparatory measures with Pre-Accession countries in view of their future participation in European Union (EU) Agencies before and upon membership. The support aims as well at knowledge transfer and capacity building in the area of expertise of the EU Agencies.

## 2. Training format and agenda

The training was held during two full days and included a balanced mix of theoretical and practical activities, with emphasis on the use of EFSA based case-studies and methodologies. Discussions were foreseen to allow the exchange of views and the collection of feedback from participants.

Representatives from the Food Safety Agency of Bosnia and Herzegovina and Veterinary Faculty of Sarajevo opened the training and welcomed the EFSA staff, the audience and tutors.

Representative from EFSA welcomed the audience and tutors and provided information on the main progress achieved under the EFSA IPA project 2015-2017, as well as on on-going opportunities for IPA food safety society to engage and contribute to EFSA’s work and activities.

The scientific content of the training was mainly focused on collecting and integrating scientific information (empirical evidence, raw data and expert opinion) in order to successfully provide a reliable risk estimate.

In particular, scientific topics covered were:

- Risk Assessment questions - description of the questions generated by the risk assessment models, i.e. the questions that must be answered to estimate the risk assessment parameters under hazard identification, hazard characterisation and exposure assessment both for chemical and microbial risk assessment;
- Three types of scientific information available for answering the Risk Assessment questions -: (1) empirical evidence from primary research studies available in the open literature (both in electronic databases and grey literature); (2) raw data from fit-for-purpose national and international databases (e.g. food consumption data; zoonoses, etc.); and (3) when information under (1) or (2) is not available, expert opinion;
- The best available methods for identifying and appraising the three types of scientific information described above: (1) for empirical evidence: systematic review; (2) for raw data: data collection frameworks; and (3) for expert opinion: methods for expert knowledge elicitation;

- Basic principles on how to integrate the scientific information into the risk assessment models. This session included an overview of how scientific information is analysed and used in the risk models, including consideration of uncertainty.

The program was developed following a logical order combining the different methodological strategies described above. In the development of the training all relevant and up to date EFSA's guidelines and reports (such as: EFSA Guidance on "Application of systematic review methodology to food and feed safety assessments to support decision making"<sup>1</sup>; EFSA Data Collection Framework; and EFSA Guidance on "Expert knowledge elicitation in food and feed safety risk assessment") were used. Please see detail agenda in Appendix A.

A pre-test and a post-test were used to measure the knowledge gained at the training: comparison of the results showed success in increasing participants' knowledge on the scientific content of the training.

At the end of the course all the delegates received a certificate of attendance and were invited to fill in an anonymous on line evaluation survey. Feedback was received by 25 participants (100% response rate) who considered this course in general as excellent or very good. The feedback includes also scores on different aspects of the training, which are summarised in Appendix B.

### **3. Participants and speakers**

The audience at the training consisted of representatives from the competent food safety authorities and scientific institutions in the Pre-Accession countries (25 participants from Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia, and Turkey). They were nominated by the EFSA national coordinating institutions, competent food safety authorities, in accordance with EFSA's suggested profile for participants, e.g. relevant professional background in the risk assessment area and satisfactory knowledge of English.

The tutors at the training were Elena Carrasco and Fernando Pérez from the University of Cordoba, Spain and Arturo Anadón from the Complutense University of Madrid. Please find the list of participants in Appendix C.

### **4. Conclusions and recommendations**

The results of the satisfaction survey showed that the training was considered to be very well organised and run, with participants scoring it mostly as excellent or very good when asked for their general view of the event, including questions related to the stated objective, expectations and balance between the lectures, practical and discussion sessions.

The majority found the content of the presentations and the quality of documents and hand-outs excellent, while case studies and practical exercises were described as very relevant and a good learning tool for these subjects. However, the majority agreed that more time would be required for the practical sessions, especially for discussion and presentation of the working groups' results and outcomes.

Participants stated that the training had an high degree of relevance to their everyday work and that it's important that EFSA and IPA coordinating institutions continue to insist on relevance of professional background related to the topics of the training and satisfactory knowledge of English of the selected participants.

Open comments confirmed that the training improved participants' knowledge in certain topics e.g. raw data, empirical evidence, Systematic review, while presented methodology for the Expert

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<sup>1</sup> <http://www.efsa.europa.eu/en/efsajournal/pub/1637.htm>

Knowledge Elicitation (EKE) conduct is the new concept that participants' would like to introduce in their daily risk assessment work.

Feedback related to tutors' evaluation acknowledged the excellent performance of Elena Carrasco, who should therefore be requested to also hold the next training course in Belgrade in October 2017. Despite the very high expertise of Fernando Pérez in risk assessment methodologies, improvements are suggested regarding his communication and lecturing skills, as well as his engagement with the audience; while Arturo Anadón, who also proved an evident knowledge in his subject, scored low with respect to participants' engagement and performance in practical sessions: therefore Arturo Anadón's replacement is suggested for the next training in Belgrade.

Suggestions for further capacity building events included more practical and hands-on sessions on microbiological and chemical risk assessment and data collection methodologies, such as dietary exposure assessment, uncertainty, food consumption data methodologies and etc.

Overall, participants valued the possibility to gain knowledge on how EFSA carries out its scientific risk assessment, in particular practical knowledge on EFSA's methodologies and models used for risk assessment. Presented opportunities for IPA food safety society to engage and contribute to EFSA's work and activities, were very well received and raised questions on administrative and technical conditions for their participation.

## Abbreviations

EC	European Commission
EFSA	European Food Safety Authority
EKE	Expert Knowledge Elicitation
EU	European Union
IPA	Instrument for the Pre-Accession Assistance

## Appendix A – Agenda

COURSE: Training in evidence base for risk assessment					
		Day		Tutors	Course contents
08h30	08h45	1	Welcome by hosts	Dzemil Hajric, Director Nihad Fejzic, Dean	Food Safety Agency of Bosnia and Herzegovina Veterinary Faculty, University of Sarajevo
08h45	09h00	1	Welcome by tutors	Elena Carrasco, Fernando Pérez and Arturo Anadón	Welcome of trainees and registration <ul style="list-style-type: none"> <li>• Delivery of training material</li> </ul>
09h00	09h30	1	Introduction	Elena Carrasco, Fernando Pérez and Arturo Anadón	<ul style="list-style-type: none"> <li>• Presentation of tutors.</li> <li>• Presentation of participants.</li> <li>• Elaboration of test of initial understanding by the participants</li> </ul>
09h30	10h30	1	LECTURE 1:	Arturo Anadón	Introduction to risk assessment.
10h30	11h00	1	Coffee break		
11h00	12h30	1	PRACTICE 1	Fernando Pérez, Arturo Anadón, Elena Carrasco	Risk assessment - practical application.

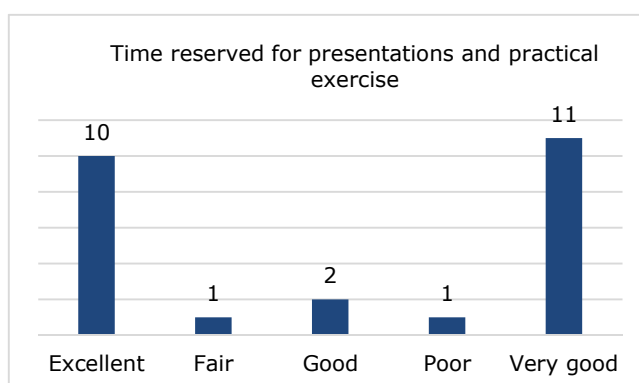
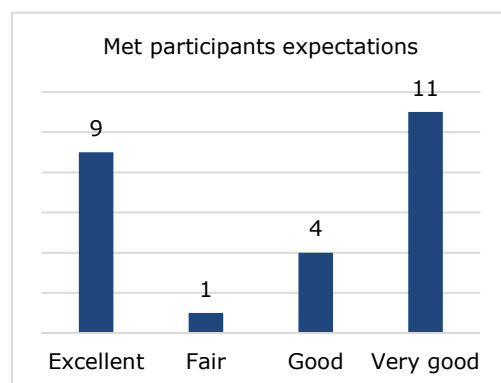
12h30	13h30	1	PRACTICE 2	Elena Carrasco	"Starting from scratch". Part I
13h30	14h30	1	Lunch break		
14h30	15h00	1	PRACTICE 2	Elena Carrasco	"Starting from scratch". Part II
15h00	16h00	1	LECTURE 2	Arturo Anadón	Systematic review and primary research studies.
16h00	16h30	1	Coffee break		
16h30	18h00	1	PRACTICE 3	Elena Carrasco, Arturo Anadón	<p>Systematic review: EFSA case study.</p> <ul style="list-style-type: none"> <li>– Microbiological risk. Systematic review already published (Jofré et al., 2017), and risk assessment that is to be published in short as a result of the work undertaken for the Tender No OC/BIOCONTAM/2014/02 – CT1: Closing gaps for performing a risk assessment on <i>Listeria monocytogenes</i> in ready-to-eat (RTE) foods: activity 2, a quantitative risk characterization on <i>L. monocytogenes</i> in RTE foods starting from the retail stage.</li> <li>– Chemical risk. Practical exercise of systematic review related to EFSA Scientific Opinion on Caffeine and Aspartame.</li> </ul>
18h00	18h15	1	End of first day.		Discussion and wrap up.

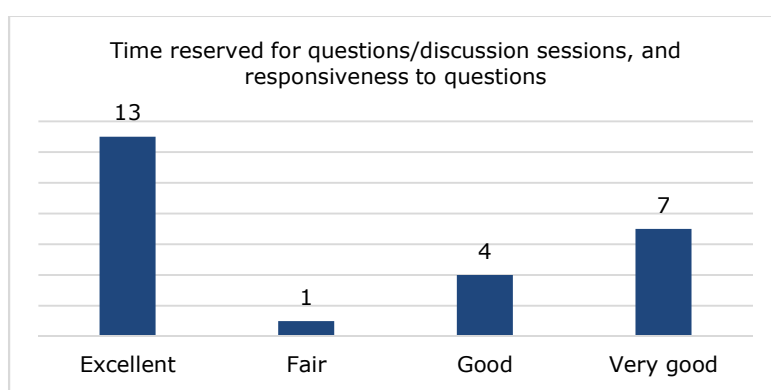
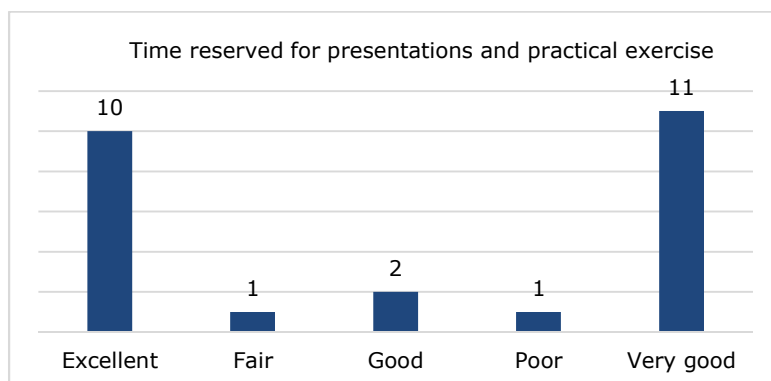
COURSE: Training in evidence based for risk assessment					
		Day		Tutors	Course contents
09h00	10h00	2	LECTURE 3	Fernando Pérez	Data collection frameworks for raw data.
10h00	11h00	2	PRACTICE 4	Fernando Perez	Data collection framework: an overview on EFSA resources.
11h00	11h30	2	Coffee break		
11h30	12h30	2	PRACTICE 5	Elena Carrasco, Fernando Perez	Collecting expert knowledge.
12h30	13h30	2	LECTURE 4	Elena Carrasco	Expert Knowledge Elicitation (EKE).
13h30	14h30	2	Lunch break		
14h30	15h30	2	LECTURE 5	Fernando Perez	Integration of scientific information into Risk Assessment.
15h30	16h00	2	Coffee break		
16h00	17h30	2	PRACTICE 6	Fernando Pérez, Arturo Anadón	Integration of scientific information into Risk Assessment models - Practical application. – Examples of use and integration of data in the different phases of risk assessment will be developed by participants. For that, an existing <i>Listeria monocytogenes</i> risk assessment developed by EFSA in collaboration with the University of Córdoba (Spain) and IRTA (Spain), and the Scientific Opinion on the risks for animal and public health related to the presence of <i>Alternaria</i> toxins in feed and food. (EFSA Journal 2011;9(10):2407), will be adapted to the purpose of this training session.
17h30	18h00	2	End of the course		Discussion, course evaluation and wrap up.



## Appendix B – Training results and Evaluation

### B.1. Technical Performance





### B.1.1.1. Open comments about the technical performance

Overall, participants were satisfied with the training, but pointed out that the duration should be readjusted, as more time was needed for the practical exercises.

Comments received:

"I had improved a lot my knowledge in risk assessment, everything was organised very well, the tutors were very kind and professional"

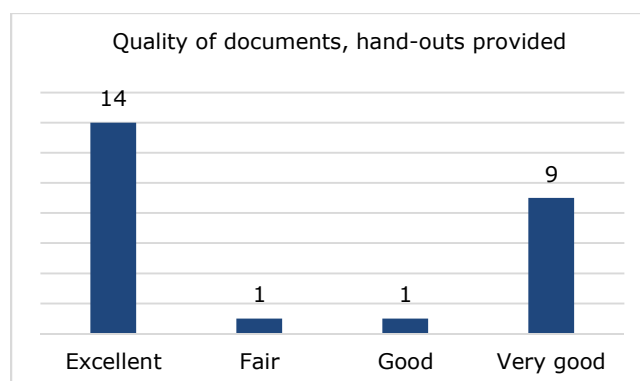
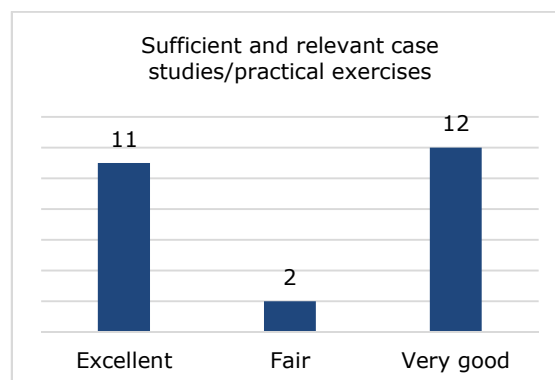
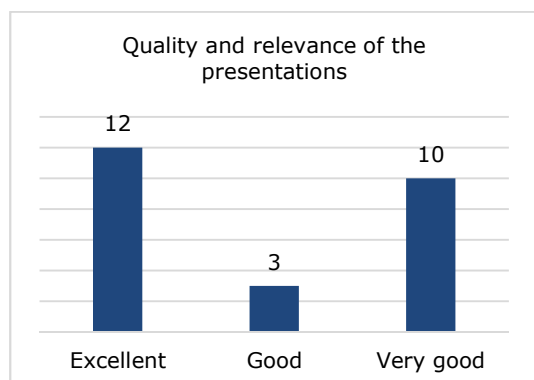
"Shorter presentation to allow more time for exercises"

"More practical examples to be presented. Too much information in such a short period."

"For organisation of the future training it could be better if it will be organised in three days instead of two, because there will be more time for lectures as well as for practical exercises"

"Time reserved for practical exercises were not satisfactory. There should be more time allocated for explanation and understand the aim of the practical and workgroup. Although the relevance of exercises was good, all the workgroups couldn't present their results, only one could do it due to the lack of time."

## B.2. Content



### B.2.1. Open comments about the training content

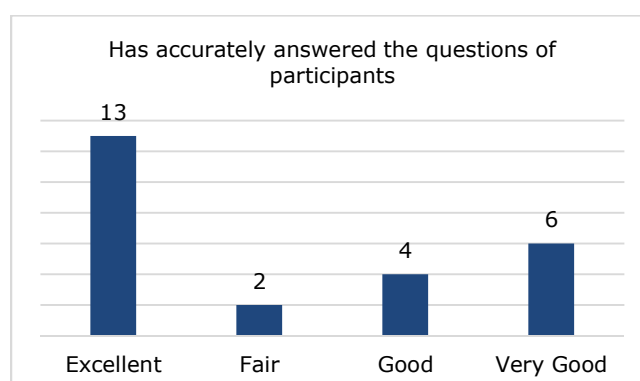
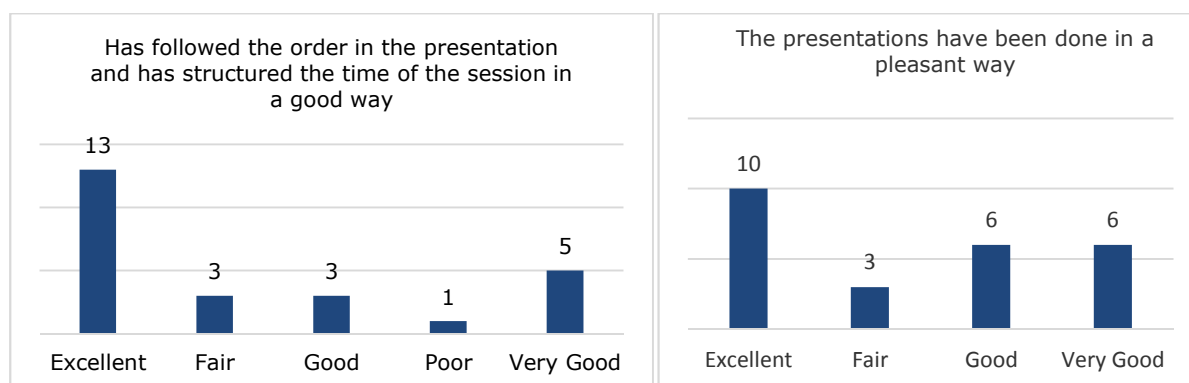
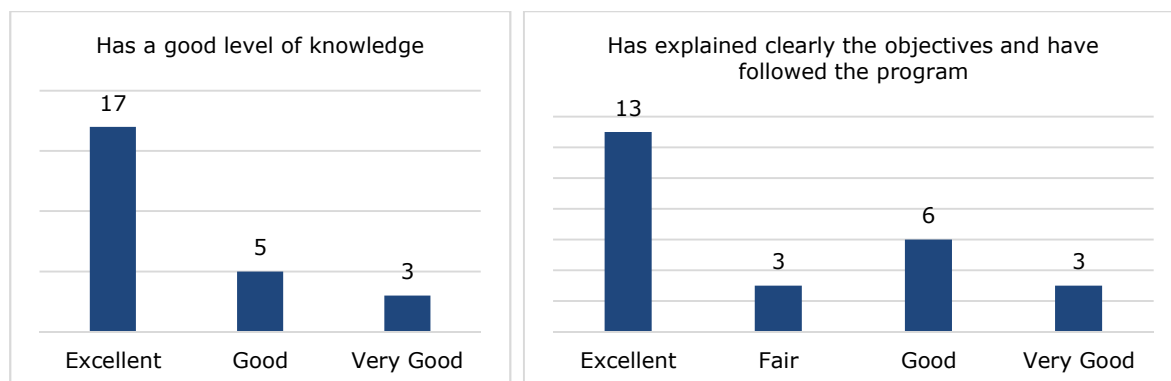
Only one participant commented on the content quality, highlighting again that more time should have been dedicated to the practical exercises.

Comment received:

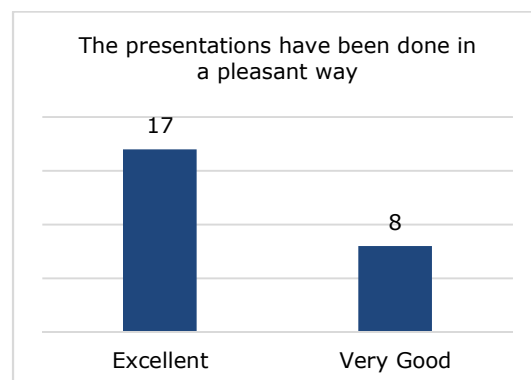
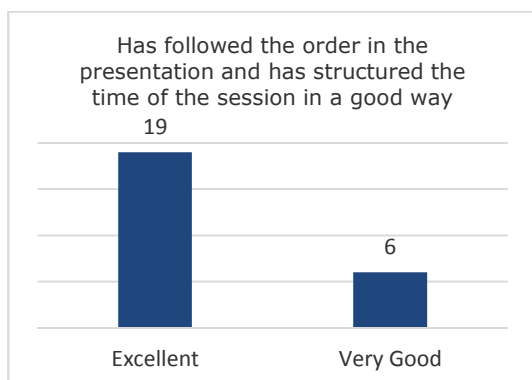
"More time should be dedicated to practical."

## B.3. 3. Tutors

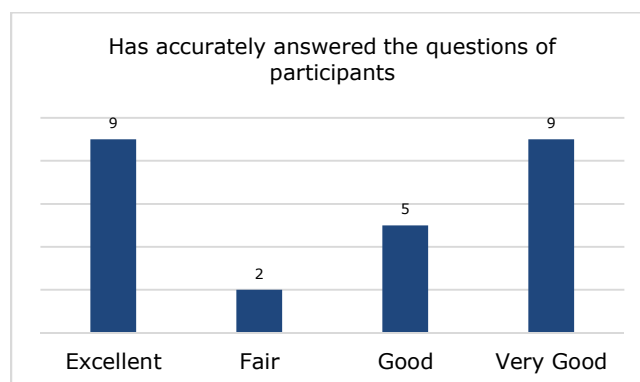
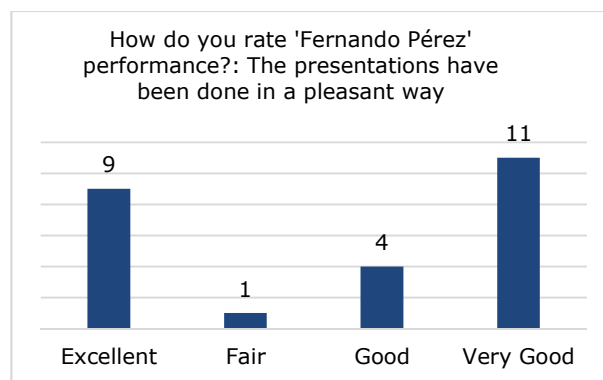
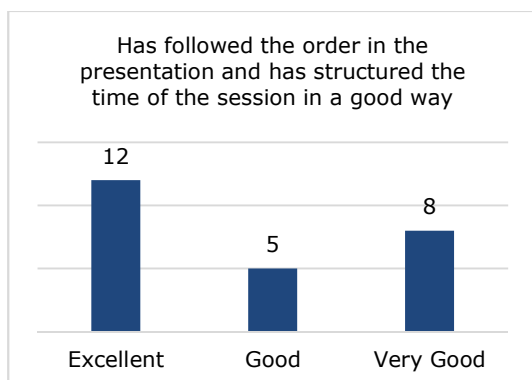
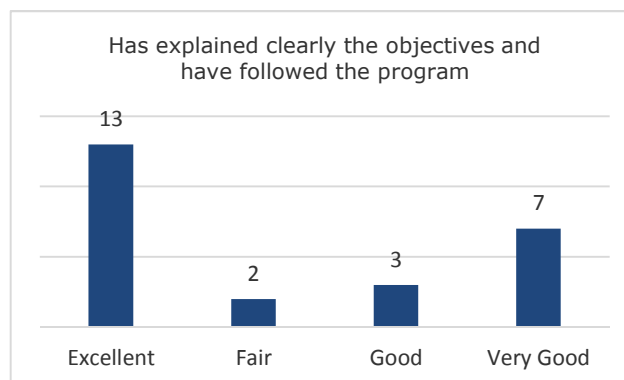
### B.3.1. Arturo Anadón



### B.3.2. Elena Carrasco



### B.3.3. Fernando Pérez



### B.3.4. Open comments about the tutors

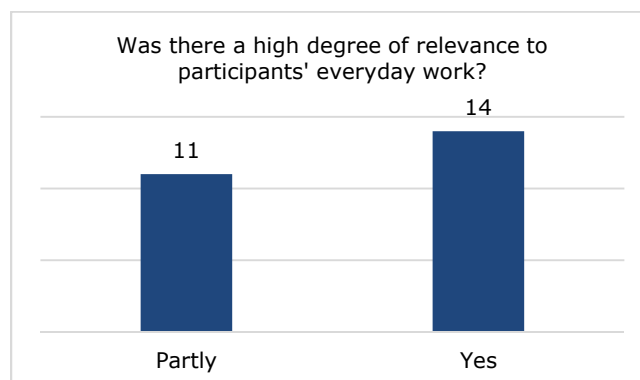
Although the quantitative evaluation of the tutors was overall good, two participants indicated some dissatisfaction about the English level and the quality of presentations:

"Reasons why I have not graded the workshop as excellent in overall are: a) Unsatisfactory English language proficiency, communication and teaching skills of Dr. Perez, in contrast to his obvious expertise in QMRA; b) Despite the evident knowledge and experience of Dr. Anadon in toxicological RA, his power point presentations and lectures were too long, sometimes boring and pointless (such as the last one on Alrenaria toxins in food and feed); c) Contrary to this, the English language, teaching and communication skills and expertise of Dr. Carrasco were excellent."

"Tutors with exception of Elena Carrasco, were not quite prepared for presentations. Anadon's presentations were not engaging and he was usually out of time. Fernando Perez was sometimes very quiet and when he was speaking he was not engaging listeners that much."

"Tutors were very patients and dedicated."

### B.4. Relevance



### B.5. Main benefits

Participants were asked to indicate the main benefits received from the training and how will the training benefit you on their duties. Replies were as follows:

"I have refreshed and improved my existing knowledge in RA, particularly in QMRA and EKE and Systematic Reviews. All of these benefits will reflect in improving my expertise and teaching to my students"

"The main benefits are that I learned about microbiological hazards and how to write review using data from original scientific papers"

"I improved knowledge on risk assessment and I will incorporate it in lectures to students"

"I improved knowledge on biological risk, and the exercises that we have done were very useful for my daily job"

"Training course improved my knowledge in Risk Assessment, especially in Expert Knowledge Elicitation in Food and Feed Safety Risk Assessment, totally new concept for me. The training will improve my ability to implement RA principles and to improve effectiveness of my work, as well."

"I extended my knowledge on the basics of RA, I got know how and information on where the data related to specific topics could be found. This training would give different angle of viewing my everyday duties"

"The training was a great opportunity as there were presented so many new topics in the field of my work: new toxins that could be involved in our analysis; as it was basic for the risk assessment it will help to add as a new task in our daily work by connecting the information from the data elaborated from the laboratory and the toxicological risk"

"In general this practical training was very useful for us in order to create opportunities to recognize hazards, to build up decisions and awareness of Microbiological Risk Assessment"

"Information regarding the Systematic Review was very interesting for example how to judge references used for risk assessment based on a Systematic Review Protocol; we are working with tons of raw data, collecting and analysing raw data is a daily process in our institution. We need to classify that evidence for the RA; EKE was totally new for me. I think EKE approach will help us to understand how to implement probabilistic judgements during surveys, expert panels or working groups"

"Information about Systematic Review (Preparing the review, search for research studies, selecting the studies and collecting data from the included studies and create tables)"

"Very practical way of showing risk assessment as well as evidence base. Sources of evidence have been identified, also different data base were shown. In future when we need we can use these sources."

"I had no knowledge about EKE before the training, it was a huge introduction for me to learn about procedures. Regarding the systematic review, more practical examples would be good to understand the EFSA approach about the issue."

## B.6. Additional topics in evidence based for risk assessment

Participants were asked what additional topics in evidence based for risk assessment they would like to see addressed in the future. Suggestions received were as follows:

"Chemical hazards"

"Mathematic modelling and quantity of the data"

"More information data for *Alteranaria* toxins in the future"

"More in depth training in Systematic Review"

"Case studies about plant pathogens and their influence on human health and economic impact"

"More information on integrating epidemiological data into risk assessment models"

"More practical real-life examples related to EFSA's work would be good to better understand the issue."

## B.7. Additional topics in risk assessment and data collection methodologies

Participants were asked what additional topics in risk assessment and data collection methodologies they would like to see addressed in the future. Suggestions indicated were as follows:

"Validation of analytical methods used for determination of compounds presented in food products; writing original scientific paper"

"Risk assessment in toxicology"

"More information on data collected in microbiology and especially for pathogens like *Salmonella*, *Listeria monocytogenes* and *E. coli*"



"More information and practical use of EFSA Comprehensive Food Consumption Database, exposure assessment methodologies, input data needed to assess the dietary exposure, concentration data, data collection methodologies, assessment of uncertainties"

"More info on the EU MENU methodology"

"More information on collecting data regarding toxins that are produced by phytopathogenic fungi and their impact on health"

"The use of epidemiological studies and their integration in foodborne and waterborne diseases outbreak"

"Dedicated training related to data that EFSA collects from MS, data types, formats, responsibilities of the MS."

## **B.8. Other comments about this training**

Comments received:

"I wish to emphasize excellent facilitating and communication skills and discussions of Mrs. Jelena Vračar Filipović. Also, I would like to thank to EFSA for this opportunity and looking forward to participate in the following workshops"

"It was a great pleasure to meet European experts in Evidence base for RA. Thanks for the opportunity to meet and share experiences with colleagues from other pre-accession's governmental and academic food safety organisation"

"The main disadvantage of the training was lack of audio facilities in the meeting venue. Sometimes was hard to hear and understand the tutors, because there was not microphone and nor speakerphones"

"It was a great opportunity to me and as it was for the first time organized I hope that in the future it will be easier to understand and be easier to expand to the college and other persons that will have interest on it"

"We have theoretical knowledge or we can learn them by reading, strictly speaking, we need more practical knowledge"

## Appendix C – List of participants and speakers

Title	Participant (Last name)	Participant (First name)	Country	Institution	Position
Ms	Zovko	Ivana	Bosnia and Herzegovina	Food Safety Agency of Bosnia and Herzegovina	Associate
Ms	Arar	Katica	Bosnia and Herzegovina	Food Safety Agency of Bosnia and Herzegovina	Head of Department
Ms	Konjic	Dzenita	Bosnia and Herzegovina	Food Safety Agency of Bosnia and Herzegovina	Senior associate for pathogenic microorganisms
Ms	Ustamujic	Nadza	Bosnia and Herzegovina	Food Safety Agency of Bosnia and Herzegovina	Senior associate
Mr	Alagic	Davor	Bosnia and Herzegovina	Veterinary faculty University of Sarajevo	Assistant professor
Ms	Seric-Haracic	Sabina	Bosnia and Herzegovina	Veterinary faculty University of Sarajevo	Assistant professor
Ms	Baralic	Marija	Serbia	Institute of Public Health Uzice	Head of Department for health control
Ms	Popovic	Milka	Serbia	Institute of Public Health of Vojvodina/ Faculty of Medicine University of Novi Sad	Head of the Department for Hygiene and Human Ecology and Chief of Nutrition and Food Safety Unit
Ms	Zivojinovic	Milena	Serbia	Veterinary Specialistic Institute Pozarevac	Head of epidemiology department in Veterinary specialistic institute Pozarevac, Quality manager in the Veterinary specialistic institute Pozarevac according to ISO 9001 and ISO/IEC 17025
Ms	Vucurovic	Ana	Serbia	University of Belgrade-Faculty of Agriculture	Research Associate University of Belgrade-Faculty of Agriculture
Mr	Baze	Ledio	Albania	NFA REGIONAL DIRECTORATE TIRANA	Laboratory Expert
Mr	Maci	Renis	Albania	Food Safety and Veterinary Institute	Head of Food Microbiological Control Sector under Food Microbiology and Water Administration Division

Title	Participant (Last name)	Participant (First name)	Country	Institution	Position
Ms	Kola	Suzana	Albania	Food Safety and Veterinary Institute	Head of Toxicology and Residue Monitoring Sector
Ms	Molla	Lindita	Albania	Public Health Institute	Head of food safety sector/IPH
Mrs	Taleska	Biljana	FYROM	Ministry of Agriculture, Forestry and water Economy, Phytosanitary Directorate	Acting Head of Agro-chemistry Department, Phytosanitary Directorate
Mrs	Ristovska	Gordana	FYROM	Institute of public health of Republic of Macedonia, Medical faculty Skopje, University Sts Ciril and Methodius	Senior researcher, Head of Department for food safety in Institute of public health; Assoc professor at Medical faculty
Mrs	Pavlova	Valentina	FYROM	Faculty of Technology and Technical Sciences	Associate Professor at Faculty of Technology and Technical Sciences, Veles
Mrs	Özkan	Fatma Nevra	Turkey	Ministry of Food, Agriculture and Livestock (General Directorate of Food and Control, Department of Risk Assessment)	Officer (Engineer)
Mr	Aksoy	Abdulkirim	Turkey	MFAL General directorate of Food and Control Risk Assessment Department	Biologist/Officer
Mr	Serdaroglu	Fatih	Turkey	MFAL General directorate of Food and Control Risk Assessment Department	Food Engineer/Officer
Mrs	Blecic	Biljana	Montenegro	Administration for Food Safety, Veterinary and Phytosanitary Affairs	Deputy director for Food Safety
Ms	Gogic	Olivera	Montenegro	Centre for Ecotoxicological Research, Podgorica, Montenegro	Analyst in unit for liquid chromatography
Mrs	Vucinic	Snezana	Montenegro	Diagnostic Veterinary Laboratory	Head of the Department of Food testing
Mrs	Barjaktarovic-Labović	Snezana	Montenegro	Primary Health Care Centre, Service of Hygiene and Environmental Health	Specialist in hygiene, narrow specialists for diet therapy; Lecturer at the University of Donja Gorica
Mr	Pérez	Fernando	Spain	ainia centro tecnologico	<b>Tutor</b>

Title	Participant (Last name)	Participant (First name)	Country	Institution	Position
Mr	Anadón	Arturo	Spain	ainia centro tecnologico	<b>Tutor</b>
Ms	Carrasco	Elena	Spain	ainia centro tecnologico	<b>Tutor</b>
Ms	Vracar Filipovic	Jelena	Italy	EFSA	Liaison officer
Ms	Marani	Elena	Italy	EFSA	Administrative assistant