

Report: Pre-accession training course on Exposure Assessment

Belgrade, Serbia

26-27 October 2017

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 “Exposure 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 horizontal aspects of food safety risk assessment: (i) evidence based for risk assessment in Sarajevo, Bosnia and Herzegovina and (ii) exposure assessment in Belgrade, Serbia.

The scientific content of the training was mainly focused on the presentation, discussion and exercises on the interpretation and modelling concentration data, methods for estimating dietary exposure, use of probabilistic and point-estimate approaches for exposure assessment, and defining uncertainty in the exposure assessment models.

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 first training day was dedicated to methods and tools used in microbiological exposure assessment and the second training day to chemical exposure assessment.

The audience consisted of representatives from the competent food safety authorities and scientific institutions in the Pre-Accession countries (25 participants from Albania, Belarus, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia, Turkey and Kosovo*¹), with professional background and interest in food safety risk assessment. The majority of participants were the same as for the first training in Sarajevo.

The training was arranged at the Hotel Palace in Belgrade and the pre-accession team was supported by the EFSA’s contacts from the Veterinary Directorate, Ministry of Agriculture of Serbia for the practical arrangements.

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

¹ *This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

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1. Background and introduction

This training report describes the outcome of the second training course titled “Exposure 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 tutors 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 for the pre-accession participants: (i) evidence based for risk assessment, arranged in July in Sarajevo, Bosnia and Herzegovina, and (ii) exposure assessment arranged in October, 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. The first training day was dedicated to methods and tools used in microbiological exposure assessment and the second training day to chemical exposure assessment. Discussions were foreseen to allow the exchange of views and the collection of feedback from participants.

Based on EFSA’s representative observations and participants’ feedback provided in the evaluation survey concluded after the first training in Sarajevo, EFSA requested from the contractor to implement changes in the agenda, materials for practical sessions and the team of tutors for the second training in Belgrade. Each material for practical work included also an introduction part, where the aim and set up of the practical was thoroughly explained. The team of tutors from the first training was changed and an additional fourth tutor was included in the team: eventually, there were two tutors for microbiological exposure assessment and two for the chemical exposure assessment. These introduced changes were very well received by the participants, according to their replies to the evaluation survey conducted after the event.

The scientific content of the training was mainly focused on the presentation, discussion and exercises on the interpretation and modelling concentration data, methods for estimating dietary exposure, use of probabilistic and point-estimate approaches for exposure assessment, and defining uncertainty in the exposure assessment models.

Presentations on exposure assessment integrated the input data needed to assess the dietary exposure, concentration data, data collection methodologies, assessment of the uncertainty, as well as other exposure assessment methodologies carried out by EFSA.

In particular, scientific topics covered were:

- Principles of Food Safety and Food Safety Risk Assessment: (1) How to conduct exposure assessment, (approaches for assessing chemical risks and microbial exposure assessment), and (2) The qualitative and quantitative exposure assessment schemes;

- Interpretation and modelling concentration data: (1) The use of concentration data in exposure assessment, (2) Concentration Data Collection, (3) Relationship between food consumption to concentration data and (4) Left-censorship and its impact on exposure assessment;
- Relevant methods intended to determine dietary exposure for microbial and chemical risk assessment: (1) Tools and methods for consumption data collection, (2) Use of the EFSA consumption database, (3) Description and application of short-term and long-term food consumption studies, (4) Total consumption and Apparent food consumptions, (5) Use of health based guidance value and legislated maximum levels, and (6) Methods for estimating dietary exposure;
- Definition and main differences between probabilistic and point estimate approach in exposure assessment: (1) Definition and uses of point-estimate and probabilistic approach, (2) Tools for exposure assessment, and (3) Guidance for the application of point-estimate and probabilistic approach in exposure assessment;
- Differences between uncertainty and variability in exposure assessment: (1) Definition of Variability and Uncertainty. (2) Main steps of the Uncertainty Analysis: Application to Exposure Assessment (3) Qualitative and quantitative methods to describe uncertainty, and (4) Assessment and communication of uncertainty in exposure assessment studies.

In the development of the training agenda all relevant and up to date EFSA's guidelines and reports were used, such as: EFSA zoonoses report; EFSA consumption database, Management of left-censored data in dietary exposure assessment, Overview of the procedures currently used at EFSA for the assessment of dietary exposure to different chemical substances, etc.. 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 17 participants (68% 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 tutors

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, Belarus, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia, Turkey and Kosovo*), and the majority of them were the same as for the first training in Sarajevo . 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 Antonio Valero and Fernando Pérez from the University of Córdoba, Spain, Olga Pardo from the University of Valencia, Spain, and Rob Theelen from the Netherlands Food and Consumer Products Safety Authority of the Ministry of Agriculture, Nature and Food Quality, Utrecht, the Netherlands. One representative from AINIA attended the course as observer. Please find the list of participants and tutors 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 the

general evaluation 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. Regarding the time for the training, the replies show that a longer session could be useful to develop more practices and cases.

Participants stated that the training had an high degree of relevance to their everyday work, therefore it's important that EFSA and IPA coordinating institutions continue to insist on the 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. the methodology and the use of practical tools and models for conducting and determine the biological and chemical exposure assessment.

Feedback related to tutors' evaluation recognises a very good performance for all of them, especially for Rob Theelen who obtained excellent qualification in the majority of answers for all the aspects considered in the questionnaire. Fernando Pérez and Antonio Valero and Olga Pardo show similar good results.

Suggestions for further capacity building events include more practical exercise for chemical and biological risk assessment, FoodEx and SSD models, and exposure assessment for nutritional aspects, novel food, dietary supplements and specific population groups etc.

Overall, participants valued the possibility to gain knowledge on how EFSA carries out its scientific exposure assessment, and the training gave them the chance to consider the similarities and differences in risk assessment approaches of the international organizations' (EFSA, JECFA).

The survey results have shown that EFSA support in building capacity in this area appears very important, thus proper tools and opportunities should be provided in order to increase the capacity of IPA countries in food safety risk assessment. The survey results will be used when planning and deciding on topics to be covered in the next phase of IPA project.

Abbreviations

EC	European Commission
EFSA	European Food Safety Authority
EU	European Union
JECFA	Joint FAO/WHO Expert Committee on Food Additives
IPA	Instrument for the Pre-Accession Assistance
SSD	Standard Sample Description

Appendix A – Agenda

TRAINING IN EXPOSURE ASSESSMENT

DATES: 26th – 27th October 2017

VENUE: Hotel Palace, Topličin venac st. 23, Stari Grad,
11000 Belgrade, Serbia

COURSE: Training in exposure assessment (DAY 1)					
From	To	Day		Tutors	Course contents
08h30	08h45	1	Welcome	1 & 2	
08h45	09h00	1	Welcome by tutors	1 & 2	Delivery of training material.
09h00	09h30	1	Introduction	1 & 2	Presentation of tutors. Presentation of participants. Elaboration of test of initial understanding by the participants.
09h30	10h15	1	LECTURE 1	1 & 2	Introduction to the risk assessment framework and exposure assessment methodology. Qualitative vs quantitative methods.
10h15	10h45	1	Coffee break		
From	To	Day		Tutors	Course contents
10h45	11h00	1	PRACTICE 1	1 & 2	Q&A with the audience about microbiological exposure assessment estimates. Data needs and interrelation among them.
11h00	11h45	1	LECTURE 2	1 & 2	Interpreting and modelling microbial prevalence and concentration data. Censored estimations and statistical description.
11h45	12h15	1	PRACTICE 2	1 & 2	Hands-on session using different fitting procedures for fitting microbial distributions from raw data. Impact of selection of distribution in final risk estimates.
12h15	12h45	1	LECTURE 3	1 & 2	Methods for estimating dietary exposure: consumption surveys (short-term and long-term studies) and apparent consumption.
12h45	13h15	1	PRACTICE 3	1 & 2	Use of the EFSA consumption data-base for estimating dietary exposure. Data collection and modelling methodologies.

13h15	14h15	1	Lunch break		
14h15	15h15	1	LECTURE 4	1 & 2	Predictive microbiology models. Foundations, types, and validation in foods.
15h15	16h00	1	PRACTICE 4	1 & 2	Demonstration of available software tools in predictive microbiology. Estimation of kinetic parameters for microbial growth and inactivation.
16h00	16h30	1	Coffee break		
16h30	17h15	1	LECTURE 5	1 & 2	Use of probabilistic and point-estimate approaches for exposure assessment. Advantages and limitations. When to use one or another?
17h15	18h00	1	PRACTICE 5	1 & 2	Examples of case-studies of exposure assessment based on existing EFSA risk assessment studies and available software tools.
18h00	18h30	1	End of first day.	1 & 2	Final discussion on EFSA examples with audience and interaction with their own exercises conducted during the day.

Tutor 1: Fernando Pérez Rodríguez.

Tutor 2: Antonio Valero Díaz.

COURSE: Training in exposure assessment (DAY 2)					
From	To	Day		Tutors	Course contents
08h30	08h45	2	Welcome	3 & 4	
08h45	09h00	2	Welcome by tutors	3 & 4	Delivery of training material.
09h00	09h30	2	Introduction	3 & 4	Presentation of tutors. Presentation of participants: personal and affiliation. Elaboration of test of initial understanding by the participants.
09h30	10h10	2	LECTURE 1	3 & 4	Introduction to food safety risk assessment framework; Understanding the risk assessment approach being in use globally; Consequences of risk analysis approach: science driven (RA) versus policy implementation (RM); The position of risk assessment outcome on food and feed safety within the EU legal framework.
10h10	10h40	2	Coffee break		
10h40	11h05		LECTURE 2	3 & 4	Basics of food and feed safety risk assessment approach; Understanding the basic approach How to obtain the necessary data.
11h05	11h25	2	PRACTICE 2	3 & 4	Finding HBGVs.
11h25	11h50	2	LECTURE 3	3 & 4	Selection of food commodities and sampling.
11h50	12h10	2	PRACTICE 3	3 & 4	Selection of food commodities for the evaluation of exposure of the general population to dioxins.
12h10	12h35	2	LECTURE 4	3 & 4	Concentration data: statistics and how to deal with n.d.
12h35	12h55	2	PRACTICE 4	3 & 4	Evaluation of results of chemical analysis of fipronil in eggs, and of dioxins in eggs.
12h55	13h55	2	Lunch break		

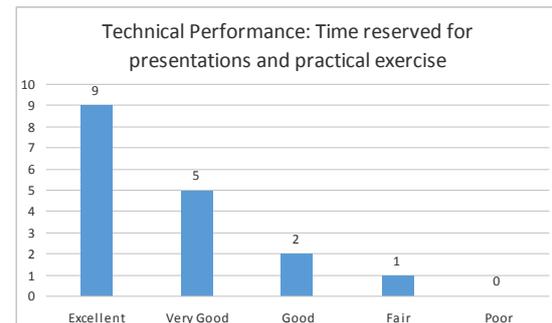
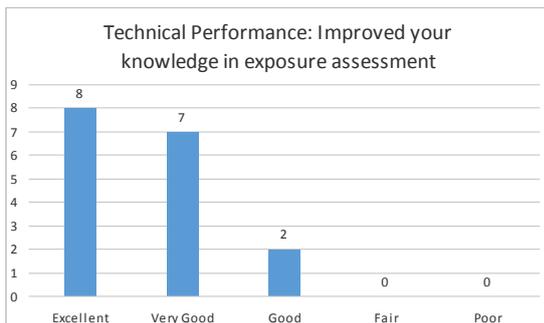
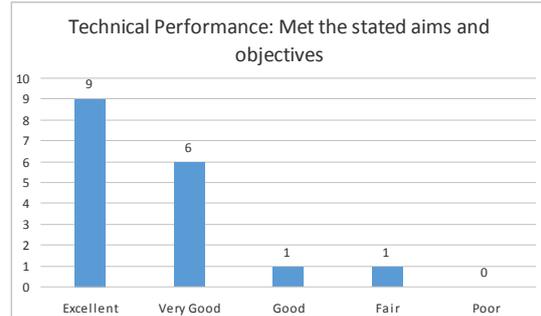
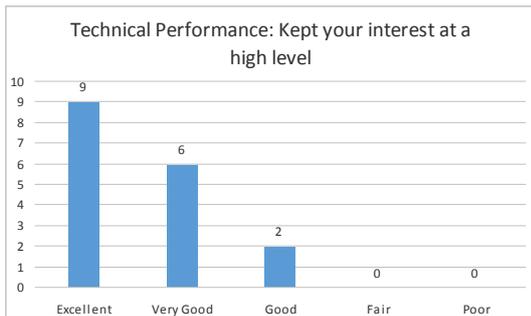
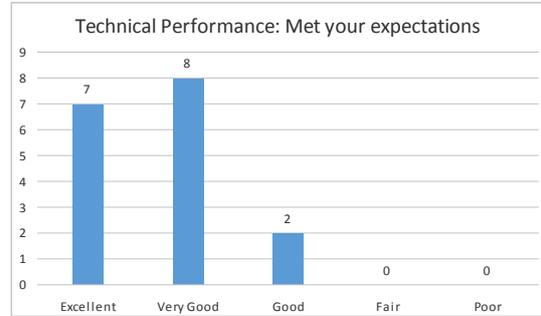
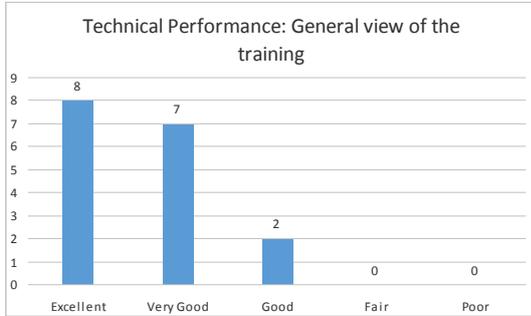
From	To	Day	Tutors	Course contents
13h55	14h25	2	LECTURE 5 3 & 4	Consumption data: how to acquire such data and how (not) to use them; How to deal with "non-consumers"
14h25	14h55		PRACTICE 5 3 & 4	Quantities of intake of eggs and commodities derived from eggs by human consumers.
14h55	15h25		LECTURE 6 3 & 4	How to calculate exposure: point estimates and probabilistic methods.
15h25	15h55	2	PRACTICE 6 3 & 4	Intake of fipronil and of dioxins through the consumption of eggs and commodities derived from eggs.
15h55	16h25	2	Coffee break	
16h25	16h55	2	LECTURE 7 3 & 4	The risk assessment: comparison of the exposure with the appropriate HBGV; impact of uncertainties.
16h55	17h15	2	PRACTICE 7 3 & 4	Risk assessment of fipronil in eggs; risk assessment of dioxins in eggs.
17h15	17h45	2	LECTURE 8 3 & 4	The risk assessment: how "serious" is the risk; how to report the outcome to risk managers and outsiders.
17h45	18h10	2	PRACTICE 8 3 & 4	Comparison of the outcome of the assessment of fipronil in eggs with reports of other organisations; short presentation of the results to the plenary.
18h10	18h30	2	End of second day. 3 & 4	Final discussion with audience and interaction with their own exercises conducted during the day.

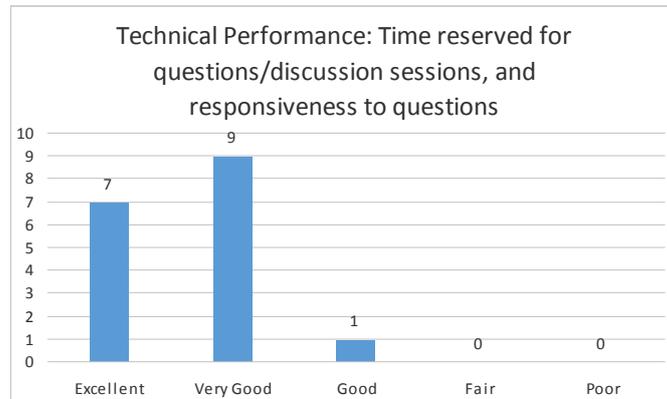
Tutor 3: Olga Pardo Marin

Tutor 4: Rob Theelen

Appendix B – Training results and Evaluation

B.1. Technical Performance





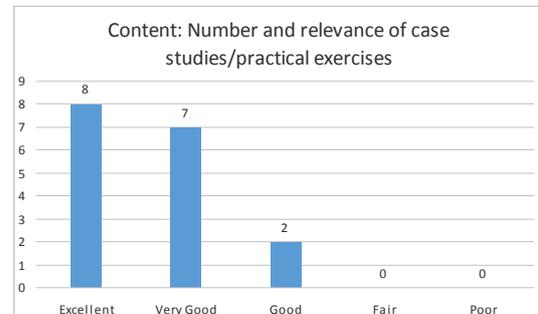
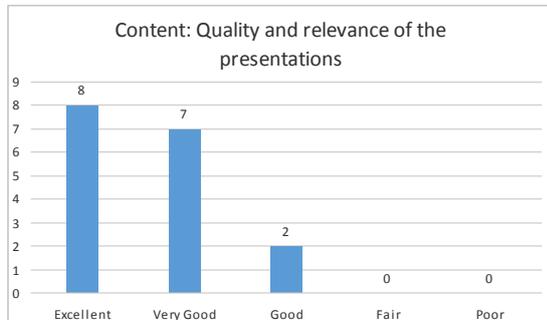
B.1.1. Open comments about the technical performance

Overall, participants were satisfied with the training. Only one comment received and focused on the excellence of the course.

Comments received:

- Everything was very well organized and completely met my expectations, especially second day of the workshop, extraordinary coordinated by Rob Theleen. He was really exceptional.

B.2. Content



B.2.1. Open comments about the training content

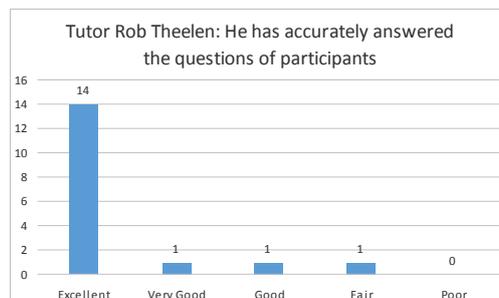
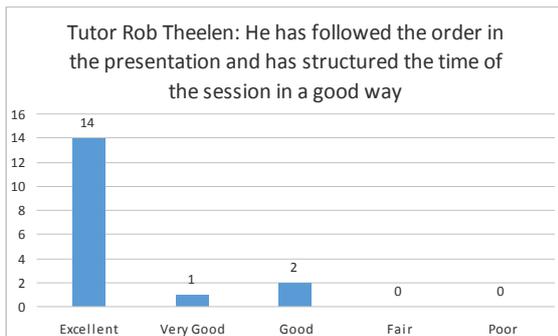
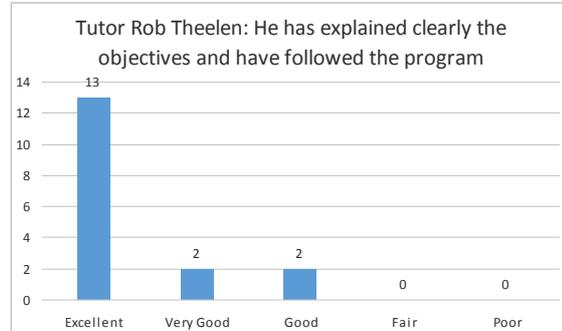
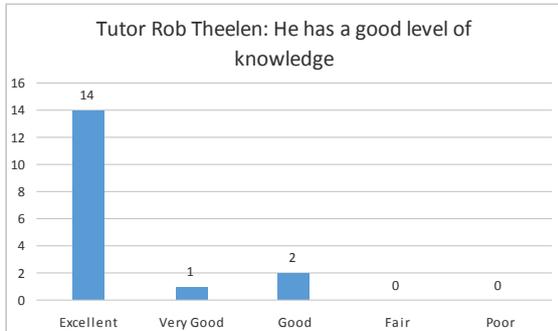
Comments received pointed out the high relevance and quality of the training content and materials, indicating the problem pointed with the wi-fi connection and highlighting again that more time should have been dedicated to the practical exercises.

Comment received:

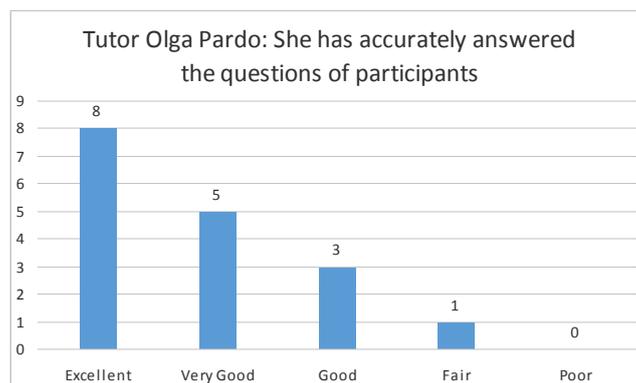
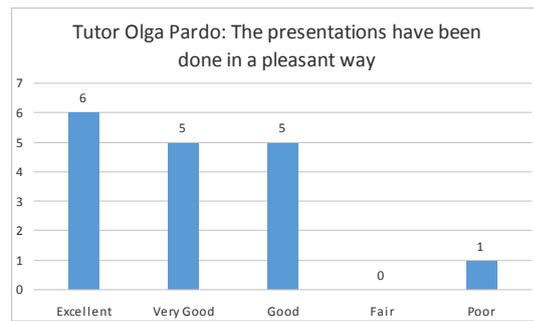
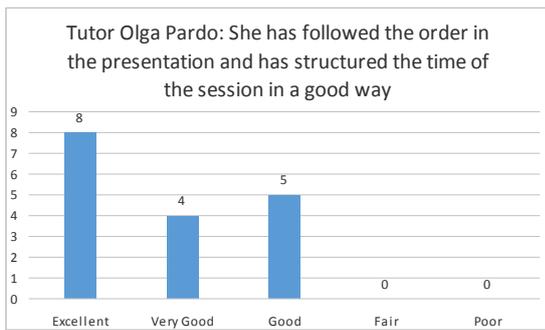
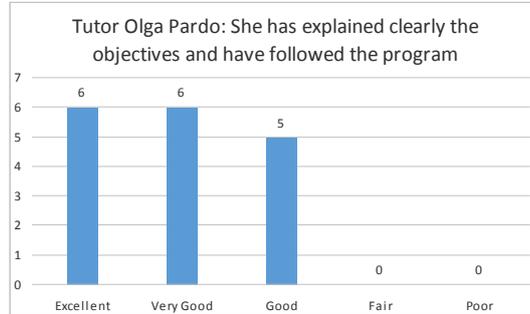
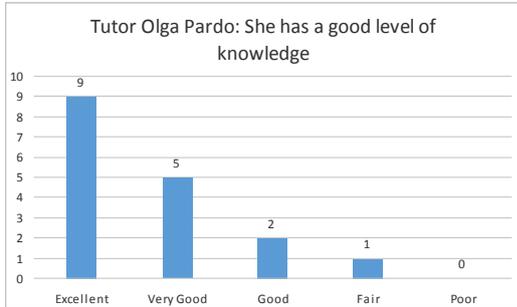
- Number and relevance of the practical exercises were really very good, but the time allocated for them was not enough.
We were expected to load a computer program before the training, we've spent two days to load it properly, but during the meeting it was said that we really don't have to use the program.
- The first day was quite demanding since it required very specific knowledge in microbiology, but presentations and exercises were excellent.

B.3. Tutors

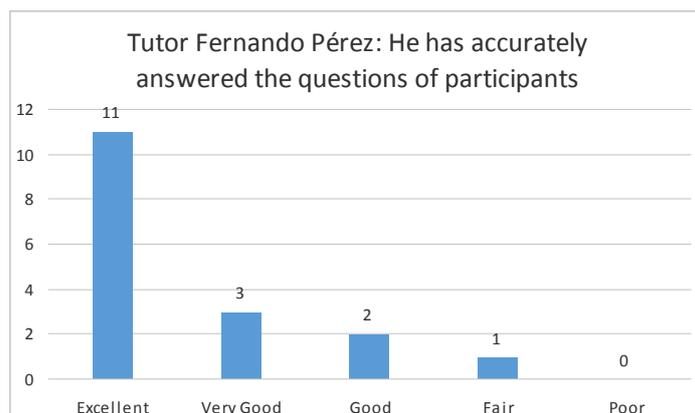
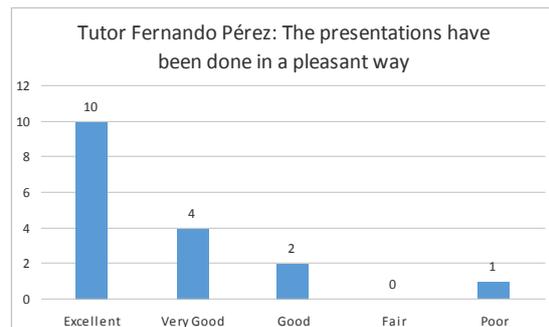
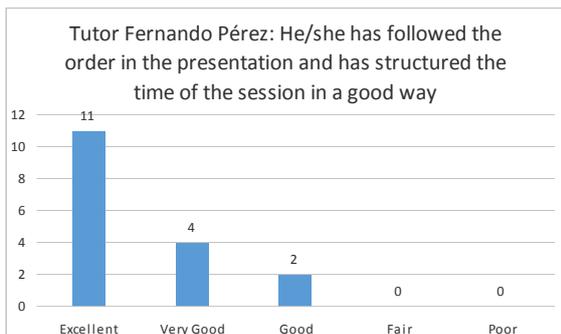
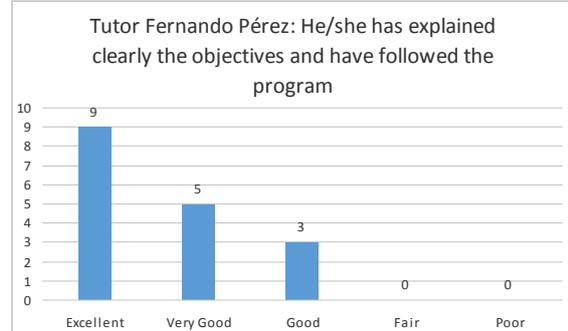
B.3.1. Rob Theelen



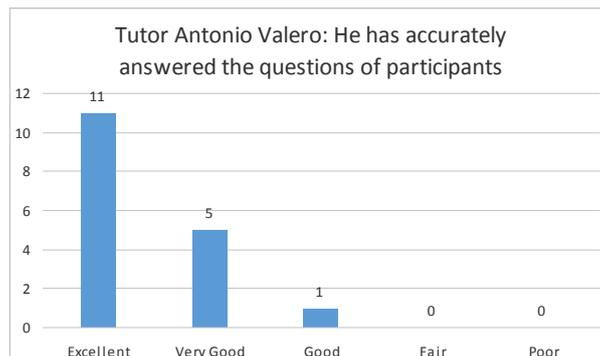
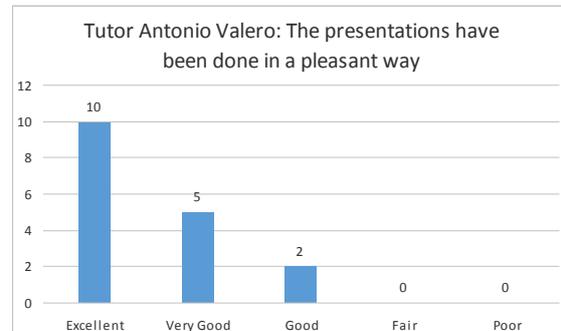
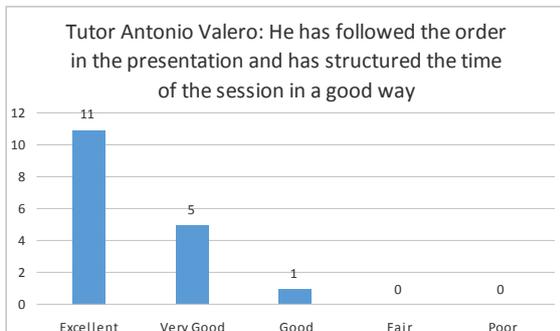
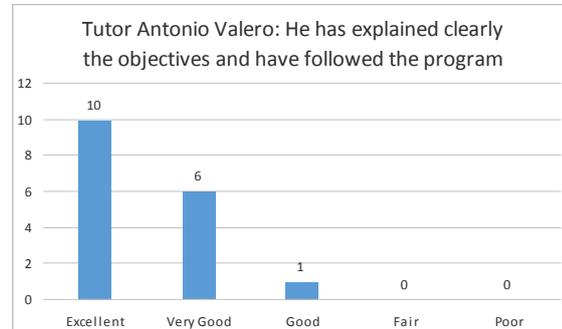
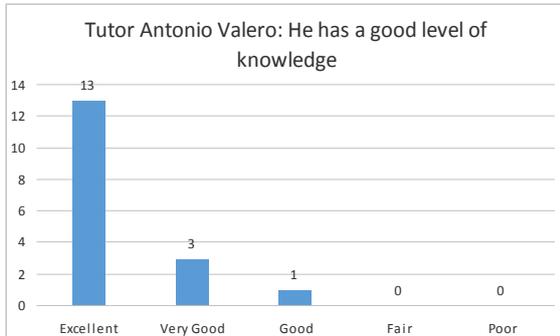
B.3.2. Olga Pardo



B.3.3. Fernando Pérez



B.3.4. Antonio Valero



B.3.5. Open comments about the tutors

Quantitative evaluation of tutors was very good and only one comment referred differences with the general opinion.

- I didn't attend the second day, but I'm sure that the two other tutors are more than "Good".
- For the 2nd day of the training, the two tutors were completely in coherence with each other in theory, but in practice, especially answering the questions during the practical exercises, they gave completely different answers to the same questions which caused a lot of confusion.

B.4. Relevance

Clear relevance for the everyday work was revealed from the answers as shown below.



B.5. Main benefits

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

- The training allowed me to deepen my knowledge in the methodology of exposure assessment and risk assessment. The obtained knowledge will be introduced into everyday work in my country, and also enable to assess the risk of contamination with polyaromatic hydrocarbons in food products at a higher level.
- Microbiological models are very useful in my job. I'm very satisfied that I have participated in the training.
- I got new knowledge about biological and chemical risks, introduced new software and received instructions for their use. I also met colleagues with whom I will be able to contact in the future...
- Exposure assessment is the crucial step of the risk assessment. That's why I will use my knowledge in the Commissions when it is needed.
- Improving knowledge in quantitative microbial risk assessment.
- It will be useful.
- As it mentioned, to improve my knowledge.
- The tools for exposure assessment are very important and useful in my daily job in risk assessment.
- I use chemical risk assessment in my everyday work and this kind of training with more practical work is very useful for me.
- Improving, advancement knowledge and skills.
- I obtained overview of methodology for exposure assessment.
- The Risk Assessment Department, which works with scientific commissions and where I am working for, is responsible for the risk assessment issues in Turkey. We consider therefore all kinds of RA trainings and activities important. This training gave a general idea about the MRA exposure assessment; but good, valuable and practical applications for the CRA. The training also gave us the chance to consider the similarities and differences in risk assessment approaches of the international organizations' (EFSA, CAC, JECFA) (esp. for CRA).

- For me the main benefit is to get to know better the complete process of RA with all steps which follow to final RA. As for my duties are concern, it will mainly benefit because after this two training schools (Sarajevo and Belgrade) I will have different angle to things, and I will be aware of influence of some decisions, which prior to this I would not consider important.
- This training was useful related to my daily work as helped me to understand how I can report and assess the risk. To understand that there are different practical and theoretical ways to assess the risk.
- I've finished my PhD Thesis on theme "Parasite fauna and mycoses in cyprinid fish in the fish breeding facilities in the Republic of Macedonia", which is related with parasitological and microbiological risks in fish as one of the main food in human population. Investigation of the parasite fauna has a fundamental and applied character. From this kind of investigations, the degree of parasite invasion and its dynamics in fish from fish - breeding facilities will be known, which is very important for determining the health status of fish, and which is important for maintaining the biodiversity in the water ecosystems. Because parasites of fish are very sensitive indicators of the health of the environment, the results should have practical significance for freshwater ecology. With this training, I started thinking about new tools or new models for estimating the prevalence and mean intensity of parasites in fish, especially using ComBase software. I have decided to apply for this training course because I am sure it would strongly enrich my future studies and help me in my prospective career. I have chosen to apply for this training course, because I really like its module system of training. I specially appreciate the wide range of offered modules and the freedom in making my study plan. Moreover, I am confident that my experience in this would be extremely exciting and valuable for both my career and overall general development at the University where I am working as Professor 10 years.
- All lectures and practical exercises are very useful for everyday work in the Public health institutions as well for the further education of medical students.
- I have gained new knowledge for estimating exposure and risk estimates that are not related to my regular job at work and that will be useful in the future.

B.6. Additional topics in exposure assessment for risk assessment

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

- Assessment of the risk of contamination with polycyclic aromatic hydrocarbons of food products
- The risk assessment of heavy metals
- Chronic exposure to chemical contaminants.
- Microbiological risk assessment should be handled simply.
- More detail education in quantitative microbial risk assessment
- More about microbiology.
- FoodEx2
- Risk assessment for carcinogenic contaminants and MOA approach
- More information about methods for estimating dietary exposure
- I would like to know more about modelling microbiology prevalence and software tools used for predictive microbiology
- Exposure assessment for nutritional aspects would be useful.
- I would like to have more topics related to plant health and food health.
- Some more practical exercise for chemical risk assessment
- Parasitology
- Conducting dietary exposure assessment of nutrients, novel food, dietary supplements, and specific population groups.

- Conducting dietary exposure assessment using computer programs.
- Practical examples risk assessment through exercise from production to the consumption of a certain product related to microbiological risks.

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:

- Methodology for collecting data on food consumption by frequency method
- I would like to see the additives that are used in the drinks.
- EU MENU methodology.
- Several trainings should be conducted related to exposure assessment as it is so crucial for the risk assessment.
- What statistical method to use in some cases
- About risk communication.
- Interpretation of data and developing the risk profile.
- The EU methodology of food consumption data
- Data collection about chemical occurrence in food, support in national network organisation for collection data and data collection about food consumption
- More information about Predictive microbiology models
- I would like to know more about risk characterization
- Dedicates trainings about SSD2 and FoodEx2 would be extremely useful (not only the logic and the using of the systems but also how to adopt in the country, the starting points and steps, the details about the EFSA procurements that were used by the MSs, etc.).
- Also risk assessment of novel foods would be useful.
- Like in previous question, more about plant health and chemicals in food.
- practical exercise as for chemical risk assessment there was not a direct approach how to report
- Parasitic risks in animal and fish
- Parasitic data collection
- It would be useful to do more practical work, more real cases.
- Practical examples exposure assessment through exercise from production to the consumption of a certain product related to microbiological risks.

B.8. Other comments about this training

Comments received:

- The Scientific and Practical Centre for Hygiene (Minsk, Republic of Belarus) expresses great gratitude for the invitation to this training. Our organization is the national contact centre of a number of international organizations, including the Codex Alimentarius. We would be glad to cooperate with you on an ongoing basis and represent your interests in the Republic of Belarus.
- The training was very useful.
- Accommodation: The hotel rooms were very small, old, dirty and had very bad smell. We changed our rooms but all the rooms had nearly the same poor conditions. It was a real

disappointment. But the training room of the hotel was pretty good and satisfactory.

- Now we have some level of knowledge about RA, so it would be nice to try (for purpose of exercise) to perform our own RA, of course with the guidance of tutors.
- Excellent training!

Appendix C – List of participants and tutors

Title	Participant (Last name)	Participant (First name)	Country	Institution	Position
Mr	Baze	Ledio	Albania	NFA Regional Directorate Tirana	Laboratory Expert
Mrs	Mehmeti	Elmira	Albania	Food Safety and Veterinary Institute	Head of Department of Toxicology and Residues Monitoring, DTRM since February 2014
Ms	Molla	Lindita	Albania	Public Health Institute	head of the food safety department in Public Health Institute
Ms	Dalhina	Natallia	Belarus	Republican unitary enterprise «Scientific practical centre of hygiene»	Specialist. Works in the laboratory of complex problems of food hygiene. Work experience 7 years.
Mrs	Arar	Katica	Bosnia and Herzegovina	Food Safety Agency of Bosnia and Herzegovina	Head of Department
Mrs	Konjic	Dzenita	Bosnia and Herzegovina	Food Safety Agency of Bosnia and Herzegovina	Senior associate for pathogenic microorganisms
Mr	Tomovic	Dragan	Bosnia and Herzegovina	Food Safety Agency of Bosnia and Herzegovina	Senior associate
Ms	Blazehkovikj Dimovska	Dijana	The former Yugoslav Republic of Macedonia	Faculty of biotechnical sciences	2007 – 2013: Teaching assistant 2013 – until now: Assistant Professor, University St. Kliment Ohridski, Faculty of Biotechnical sciences Bitola, Republic of Macedonia
Mrs	Pavlova	Valentina	The former Yugoslav Republic of Macedonia	Faculty of Technology and Technical Sciences	Associate Professor at Faculty of Technology and Technical Sciences, Veles
Mrs	Talevska	Biljana	The former Yugoslav Republic of Macedonia	Ministry of Agriculture, Forestry and water Economy, Phytosanitary Directorate	Acting Head of Agro-chemistry Department, Phytosanitary Directorate
Mrs	Barjaktarović-Labović	Snežana	Montenegro	Primary Health Care Center, Service of Hygiene and Environmental Health	Specialist in hygiene, narrow specialists for diet therapy Lecturer at the University of Donja Gorica

Mr	MAROJEVIC	Drago	Montenegro	Ministry Agriculture and Rural Development of Montenegro	Assistant Coordinator to NC of EFSA in Montenegro
Mrs	Vučinić	Snežana	Montenegro	Diagnostic Veterinary Laboratory	Head of the Department of Food testing
Mrs	Boskovic	Tamara	Serbia		
Mr	Dmitric	Marko	Serbia	Veterinary Specialized Institute Kraljevo	microbiologist
Mrs	Dukic	Nadezda	Serbia		
Ms	JOVIĆ	DRAGANA	Serbia	Institute of Public Health of Serbia "Dr Milan Jovanovic Batut"	Senior specialist associate for food safety and nutrition
Ms	Petković	Jelena	Serbia	Institute of Veterinary Medicine "Jagodina"	Co-worker in food hygiene
Mrs	Petrović	Jelena	Serbia	Scientific Veterinary Institute "Novi Sad"	Senior Research Associate, food safety area
Mrs	Popovic	Milka	Serbia		
Mrs	Vučurović	Ana	Serbia	University of Belgrade-Faculty of Agriculture	Research Associate University of Belgrade-Faculty of Agriculture
Mrs	KAYA	Zeynep Esin	Turkey	MFAL General directorate of Food and Control	Food Engineer/officer
Mrs	ÖZCAN	Fatma Nevra	Turkey	Ministry of Food, Agriculture and Livestock	Officer (Engineer) in Governmental Risk Assessment Body
Mr	SERDAROĞLU	Fatih	Turkey	MoFAL General directorate of Food and Control	Food Engineer
Mr	VESELINOVIC	Branislav	Kosovo*	Food and Veterinary Agency	Border Veterinary Inspector

Title	Tutor (Last name)	Tutor (First name)	Country	Institution	Position
Mr.	Theelen	Rob	The Netherlands	Food and Consumer Products Safety Authority of the Ministry of Agriculture, Nature and Food Quality	Expert
Mrs.	Pardo	Olga	Spain	Valencia University	Professor
Mr.	Pérez	Fernando	Spain	Córdoba University	Professor
Mr.	Valero	Antonio	Spain	Córdoba University	Professor