Biological hazards and Contaminants Unit

Network on Microbiological Risk Assessment Minutes of the 20th meeting

WEB-conference, 29/30 October 2020

(Agreed on 18 November 2020)

Participants

- **Network Representatives of Member States (including EFTA Countries):**

Country	Name
Austria	Monika Matt
Belgium	Lieven De Zutter, Kim Feys
Bulgaria	Hristo Najdenski
Cyprus	Christos Kourtis
Croatia	Brigita Hengl, Jasenka Petric
Czechia	Veronika Vlasakova, Zuzana Ileninová
Denmark	Johanne Ellis-Iversen, Jens Kirk Andersen
Estonia	Mati Roasto
Finland	Jukka Ranta, Pirkko Tuominen
France	Pauline Kooh, Frederique Audiat-Perrin
Germany	Anja Buschulte, Matthias Filter
Greece	Panagiota Gousia
Hungary	Zsuzsanna Sréterné Lancz, David Toldi
Ireland	Lisa O'Connor, Mary Lenahan
Italy	Dario De Medici, Francesco Pomilio
Lithuania	Indre Stoskuviene
Netherlands	Aarieke de Jong
Poland	Elzbieta Mackiw
Portugal	Manuela de Sol
Romania	Laurentiu Ciupescu
Slovakia	Lubomír Valík
Slovenia	Maja Kokalj
Spain	Elena Carrasco Jimenez
Sweden	Jakob Ottoson
Norway	Danica Grahek-Ogden
Switzerland	Francoise Fridez, Renate Boss

- **Hearing Experts**

Marcel Fuhrmann and Thomas Schüler (for item 6.4)

- **EFSA:**

BIOCONTAM Unit: Katrin Bote, Frank Boelaert, Beatriz Guerra Roman, Michaela Hempen, Maria Francesca Iulietto, Winy Messens, Karoline Noerstrud, Eleonora Sarno, Pietro Stella, Denise Pezzutto

TS Unit: Marco Conterbia participated in agenda point 4.9

HUCAP Unit: Panagiotis Kalavros participated in agenda point 6.6 and 7

- **Others:**

Serbia was represented by Dejan Krnjaic

29 October 2020

1. Welcome and apologies for absence

The Chair welcomed the participants. Network members from 24 Member States and Norway and Switzerland participated. No apologies were received.

2. Adoption of agenda

The agenda was adopted without changes.

3. Agreement of the minutes of the 19th meeting of the Network on Microbiological Risk Assessment held on 21/22 May 2019 in Parma

The minutes were agreed by written procedure on 05 July 2019 and published on the EFSA website 10 July 2019.

4. Topics for discussion

1.1. EU One Health 2018 zoonoses report

Frank Boelaert (EFSA BIOCONTAM Unit) presented EU One Health 2018 zoonoses report[1] which summarises the results of zoonoses monitoring activities carried out in 2018 in 36 European countries (28 Member States (MS) and 8 non-MS). The first and second most commonly reported zoonoses in humans were campylobacteriosis and salmonellosis, respectively. The European Union (EU) trend for confirmed human cases of these two diseases was stable during 2014–2018. The proportion of human salmonellosis cases due to Salmonella Enteritidis was at the same level in 2018 as in 2017. Of the 27 reporting MS, 16 met all *Salmonella* reduction targets for poultry, whereas 11 MS failed meeting at least one. The EU flock prevalence of target *Salmonella* serovars in breeding hens, laying hens, broilers and fattening turkeys decreased during recent years but stalled in breeding turkeys. *Salmonella* results from Competent Authorities for pig carcasses and for poultry tested through National Control Programmes were more frequently positive compared with food business operators. Shiga toxin-producing *Escherichia coli* (STEC) infections in humans were the third most commonly reported zoonosis in the EU and increased from 2014 to 2018. Yersiniosis was the fourth most frequently reported zoonosis in humans in 2018 with a stable trend in 2014–2018. The number of reported confirmed listeriosis cases further increased in 2018, despite *Listeria* rarely exceeding the EU food safety limit tested in ready-to-eat food. In total, 5,146 food- and waterborne outbreaks were

[1] https://www.efsa.europa.eu/en/efsajournal/pub/5926

reported. *Salmonella* was the most commonly detected agent with *S.* Enteritidis causing one in five outbreaks. *Salmonella* in eggs and egg products was the highest risk agent/food pair. A large increase of human West Nile virus infections was reported in 2018. The report further updates on bovine tuberculosis, *Brucella*, *Trichinella*, *Echinococcus*, *Toxoplasma*, rabies, *Coxiella burnetii* (Q fever) and tularaemia.

1.2. Foodborne outbreaks and burden of disease in Sweden

The Swedish representative presented an analysis of eleven years of reported food poisoning events in Sweden as well as some approaches to estimate the public health burden of foodborne disease in Sweden.

1.3. Risk ranking of pathogens in food

The representative from Norway gave a presentation on an ongoing activity on risk ranking in foods. Every year, the Norwegian Food Safety Authority monitors and maps foods for infectious agents that can be harmful to people's health. The Norwegian Food Safety Authority needs the ranking to prioritize which infectious agents and foods are to be monitored in the years ahead. The ranking is based, among other things, on the number of registered cases of disease per year, severity of disease, properties of the infectious substances, exposure in the population, where the food originates from and production processes. The assignment includes both raw materials and processed and ready-to-eat food produced in Norway and abroad. As the project is complex and extensive, the entire panel for hygiene and infectious substances participates in the work. Publication is expected in June 2021.

1.4. Austrian Food Safety Report

The representative from Austria introduced the Austrian Food Safety Report which, since 2010, is published yearly in German. An English version is available since 2018, describing the food safety system of Austria and presenting data concerning inspections, food samples, etc. from the three most recent years. In this presentation an overview of the content and highlights of 2019 are presented.[2]

1.5. Microbiological results of specific "campaigns", overview 2019

The Austrian representative further presented results from various campaigns. In Austria planned food samples are divided into market samples, targeted samples and samples of in-house production. All targeted samples are reported in the Austrian Food Safety Report as "focus audits".[3] The same results are named "campaigns" in the Austrian-EFSA-Zoonosis reporting, but only for zoonotic agents. This presentation gives an overview of microbiological results from these campaigns/focus audits from 2019.

1.6. Growth potential of *Listeria monocytogenes* in Belgian homestead cheeses

The Belgian representative gave a presentation on the advice of the Scientific Committee established at the Federal Agency for the Safety of the Food Chain in Belgium, with as topic the growth potential of *Listeria monocytogenes* in Belgian

[2] https://www.verbrauchergesundheit.gv.at/lebensmittel/lebensmittelkontrolle/LMSB_2019_Version_2020_06_03_ENG_1.pdf?7qkpks

[3] https://shiny.ages.at/WS3/spa_overview/

homestead cheeses. A study was conducted with 142 Belgian producers of homestead cheeses. Physico-chemical analysis was performed on 65 cheeses and a challenge test on 32 cheeses. The assessment concluded that fresh cheese (pH < 5,0) was a low risk product for growth of *L. monocytogenes*. For other cheeses individual assessment is needed.

1.7. Heat-resistance of *S. aureus* and *E. coli* isolates from artisanal Slovakian cheeses

The representative from Slovakia presented results from a study on heat-resistance of *S. aureus* and *E. coli*. Artisanal stretched cheeses are produced from raw milk curd. To control pathogens, steaming and stretching is used at 65 °C for 5 to 7 min. Data on heat-resistance of *S. aureus* and *E. coli* from the artisan cheese productions are needed for potential exposure assessment. It is assumed that isolates exposed to these conditions may exhibit increased resistance. In this case, the collected data should be included in the exposure scenarios.

1.8. Feedback on enquiry on raw milk legislation

The Dutch representative gave feedback on an inquiry on national legislation on the sale of raw drinking milk that was conducted by the Netherlands within the EFSA MRA network. This presentation provides an overview of the outcome of the inquiry focusing on those criteria that directly relate to food safety.

1.9. Use of MS Teams

Marco Conterbia (EFSA Transformation Services) gave a presentation on the MRA Network microsite in Microsoft Teams. He explained why EFSA has selected Microsoft Teams as the collaboration platform and gave practical advice on how to use it efficiently.

30 October 2020

5. Welcome and apologies for absence

The chair welcomed the participants to the second day of the meeting and the hearing experts for agenda item 6.4.

6. Topics for discussion

6.1. Whole Genome Sequencing Characterization of Shiga Toxin-Producing Escherichia coli Isolated from Flour from Swiss Retail Markets

The representative from Switzerland gave a presentation on Shiga toxin-producing *Escherichia coli* (STEC) in flour. STEC strains are often found in food and cause human infections. Although STEC O157:H7 is most often responsible for human disease, various non-O157 subtypes have caused individual human infections or outbreaks. The importance of STEC serogroup typing is decreasing while detection of virulence gene patterns has become more relevant. Whole genome sequencing (WGS) reveals the entire spectrum of pathogen information, such as toxin variant, serotype, sequence type, and virulence factors. Flour has not been considered as a vector for STEC; however, this product has been associated with several STEC outbreaks in the last decade. Flour is a natural product, and milling does not include a germ-reducing step. Flour is rarely eaten raw, but the risks associated with the consumption of unbaked dough are probably underestimated. The aim of this study was to determine the prevalence of STEC in flour samples (n = 93)

collected from Swiss markets and to fully characterize the isolates by PCR assay and WGS. The prevalence of STEC in these flour samples was 10.8% as indicated by PCR, and a total of 10 STEC strains were isolated (two flour samples were positive for two STEC subtypes). We found one stx2-positve STEC isolate belonging to the classic serogroups frequently associated with outbreaks that could potentially cause severe disease. However, we also found several other common or less common STEC subtypes with diverse virulence patterns. Our results reveal the benefits of WGS as a characterization tool and that flour is a potentially and probably underestimated source for STEC infections in humans.[4]

6.2. Risk ranking of biological hazards in foods: methodology and proof of concept

The French representative presented the French Food safety Agency's opinion concerning the development of a method for ranking biological and chemical hazards in order to optimize food safety.[5] The presentation focused on biological hazards and illustrated the method through examples.

6.3. Reduction of *Campylobacter* in broiler flocks: identification of risk factors, evaluation of increased biosecurity measures and the protective effect of the microbiota of Campylobacter free flocks

The Belgian representative gave an overview on the results from a research project concerning the increase of the biosecurity on broiler farms to prevent *Campylobacter* were presented. Presentation is focused on the link between thinning and *Campylobacter* colonization of broiler flocks and the contamination source for the transport containers used to pick up the birds.

6.4. EFSA-BfR project QMRA model repository

The German representative, with support of two additional experts from BfR, provided a status update on the currently ongoing work within an EFSA-BfR Framework partnership agreement on the establishment of a European food safety model repository. It included a general introduction followed by a live demo and hands-on exercises and ended with an outlook on new and advanced features of the tool. The tool is expected to be available by March 2021. It was offered that members of the MRA Network could use the support offered by BfR in their attempts to provide own risk models in the new FSKX model exchange format.

6.5. Recent and ongoing mandates of EFSA BIOHAZ Panel

The EFSA BIOHAZ secretariat presented recently published BIOHAZ Panel opinions:

- Update and review of control options for Campylobacter in broilers at primary production (EFSA-Q-2018-00676) [6]

[4] Boss R, Hummerjohann J. Whole Genome Sequencing Characterization of Shiga Toxin-Producing *Escherichia coli* Isolated from Flour from Swiss Retail Markets. J Food Prot. 2019 Aug;82(8):1398-1404. doi: 10.4315/0362-028X.JFP-18-593. PMID: 31335182.

[5] https://www.anses.fr/fr/system/files/BIORISK2016SA0153Ra.pdf

[6] https://www.efsa.europa.eu/en/efsajournal/pub/6090

- Pathogenicity assessment of Shiga toxin-producing Escherichia coli (STEC) and the public health risk posed by contamination of food with STEC (EFSA-Q-2018-00293)[7]
- Whole genome sequencing and metagenomics for outbreak investigation, source attribution and risk assessment of food-borne microorganisms (EFSA-Q-2018-00058)[8]
- Public health risk posed by Listeria monocytogenes in frozen fruit and vegetables including herbs, blanched during processing (EFSA-Q-2018-01006)[9]
- Use of the so called "tubs" for transporting and storing fresh fishery products (EFSA-Q-2019-00053)[10]

And recently adopted BIOHAZ Panel opinions:

- Scientific opinions providing guidance on date marking and related food information – part I (EFSA-Q-2019-00438)
- Evaluation of public and animal health risks in case of a delayed post-mortem inspection in ungulates (EFSA-Q-2019-00124)

Ongoing mandates:

- Antimicrobial substances in non-target feed (EFSA-Q-2019-00221)
- Use of the so-called "superchilling" technique for the transport of fresh fishery products (EFSA-Q-2019-00437)
- Role played by the environment in the emergence and spread of antimicrobial resistance through the food chain (EFSA-Q-2019-00343)
- Efficacy and safety of high-pressure processing of food (EFSA-Q-2020-00380)
- Use of alkaline phosphatase and possible alternative testing to verify pasteurisation of raw milk, colostrum, dairy and colostrum-based products (EFSA-Q-2020-00331)
- Microbiological safety of aged meat (EFSA-Q-2020-00527)

6.6. EFSA programme on traineeship and EU-FORA

Panagiotis Kalavros (EFSA HUCAP Unit) gave an introduction to EFSA's traineeship and EU-FORA programme which was followed up by a presentation of former and current trainees in the BIOCONTAM Unit describing their experiences of working at EFSA.

7. Any Other Business

The chair informed the Network that the mandate of the EFSA's MRA Scientific Network expires at the end of 2020. The Advisory Forum is discussing a proposal to put forward to EFSA's Management Board to renew the mandate. The Network will be informed of the final decision. The draft minutes will be circulated sooner

[7] https://www.efsa.europa.eu/en/efsajournal/pub/5967
[8] https://www.efsa.europa.eu/en/efsajournal/pub/5898
[9] https://www.efsa.europa.eu/en/efsajournal/pub/6092
[10] https://www.efsa.europa.eu/en/efsajournal/pub/6091

than usual following the requirement to publish the network minutes within 14 working days. No other businesses were discussed.

8. Date for next meeting

The next MRA network meeting is planned for autumn 2021. The network members suggested to have an additional web-meeting in spring 2021, if possible.

9. Closure of the meeting

The Chair thanked all participants for their attendance and closed the meeting.