

Network on Microbiological Risk Assessment Minutes of the 14th meeting

Held on 12/13 April 2016, Parma

(Agreed on 13 May 2016)

Participants

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

Country	Name
Austria	Monika Matt
Belgium	Isabel De Boosere
Bulgaria	Hristo Najdenski
Croatia	Brigita Hengl
Cyprus	Georgios Papageorgiou
Czech Republic	Barbora Macková
Denmark	Maarten Nauta
Estonia	Mati Roasto
Finland	Pirkko Tuominen
France	Pauline Kooh
Germany	Anja Buschulte
Greece	Vassilis Xanthopoulos
Hungary	László Mészáros
Ireland	Wayne Anderson
Italy	Dario De Medici
Lithuania	Indre Stoskuvienė
Netherlands	Aarieke de Jong
Poland	Elzbieta Mackiw
Portugal	Luisa Peixe
Romania	Ioana Neghirla
Slovakia	Lubomir Valík
Slovenia	Pavel Pollak
Spain	Elena Carrasco
Sweden	Mia Egervärn
United Kingdom	Joanne Edge
Norway	Danica Grahek-Ogden
Switzerland	Renate Boss

- **EFSA:**

- BIOCONTAM Unit: Pierre-Alexandre Beloil (participated in agenda item 6.7); Frank Boelaert; Michaela Hempen (secretariat); Marta Hugas; Mirena Ivanova; Ernesto Liebana Criado (chair); Yves Van der Stede.

1. Welcome and apologies for absence (12 April 2016)

The Chair welcomed the participants and invited them to introduce themselves. Apologies were received from Luisa Peixe (Portugal) for both days.

2. Adoption of agenda

The agenda was adopted without changes.

3. Agreement of the minutes of the 13th meeting of the Network on Microbiological Risk Assessment held on 27/28 October 2015, Parma¹.

The minutes were agreed by written procedure and published on the EFSA website on 11 December 2015.

4. Topics for discussion

4.1. Relationship between seroprevalence in the main livestock species and presence of *Toxoplasma gondii* in meat

In 2013, EFSA launched a Call for proposals (GP/EFSA/BIOHAZ/2013/01) on the 'Relationship between seroprevalence in the main livestock species and presence of *Toxoplasma gondii* in meat'. The grant was awarded to a consortium with National Institute for Public Health and the Environment (RIVM) as project leader (project coordinator: Joke van der Giessen) and concluded in February 2016. The grant consisted of 1) a literature review on the relationship between seroprevalence in the main livestock species and presence of *T. gondii* in meat² and 2) Experimental studies on *T. gondii* in the main livestock species³. Joke van der Giessen presented an overview and some highlights of the results.

The scientific literature was reviewed to obtain information on: (1) the anatomical distribution of *Toxoplasma (T.) gondii* tissue cysts, (2) the performance of direct detection methods, (3) the relationship between detection of antibodies to *T. gondii* and presence of *T. gondii* tissue cysts, and (4) on-farm risk factors for *T. gondii* infection in the main livestock species.

After extensive review of the literature, experimental studies were performed in the main livestock species (cattle, small ruminants, pigs, horses and poultry) to address the main knowledge gaps considering (1) the relationship between detection of antibodies and presence of *T. gondii*, (2) the anatomical distribution of tissue cysts, and (3) on-farm risk factors for infection.

4.2. The microbiological risk from shell eggs and their products

The representative from UK presented a draft report by the Advisory Committee on the Microbiological Safety of Food (ACMSF) on the microbiological risk from

¹ <http://www.efsa.europa.eu/sites/default/files/event/151027b-m.pdf>

² <http://www.efsa.europa.eu/en/supporting/pub/996e>

³ <http://www.efsa.europa.eu/en/supporting/pub/995e>

shell eggs and their products⁴. The objectives were to assess a) the current level of microbiological risk to consumers (including vulnerable groups) from raw or lightly cooked shell eggs and their products and b) how the risk with respect to Salmonella has changed since the last ACMSF report in 2001.

There has been a major reduction in the microbiological risk from Salmonella in UK shell eggs from hens since the 2001 ACMSF report, especially for eggs produced under the Lion Code scheme. They concluded that eggs produced under the Lion code, or produced under demonstrably equivalent comprehensive schemes, can be served raw or lightly cooked to all groups in society, including those that are more vulnerable to infection, in both domestic and commercial settings, including care homes and hospitals. The draft report was published for public consultation. Once the consultation responses have been considered and the report finalized by ACMSF, the Food Standards Agency will review its advice to vulnerable groups taking into account the committee's conclusions.

4.3. Tick-borne encephalitis in goat milk

The representative from Croatia reported results from a study carried out by the virological laboratory of Veterinary faculty in cooperation with Croatian Institute of Public Health and Faculty of Agriculture on tick-borne encephalitis virus (TBE) in goats. Goat serum and milk samples were collected from several farms in northwest Croatia. All samples tested (n=450) were negative. It was nevertheless concluded that the risk for TBE from raw goat milk and products is high for immunocompromised population.

4.4. Microbial risks to humans in Estonia in association with non-pasteurised milk consumption

The representative from Estonia presented results of a pilot study on microbial contamination of raw milk in Estonian vending machines from 2013 and 2014 carried out by the Estonian university of life sciences. In Estonia, the sale of raw milk through vending machines is promoted through the Estonian rural development plan. Vending machines can be found in supermarket and they do not require labelling, such as "apply heat treatment before consumption". They concluded that the milk quality of one-third of the studied dairy herds was not satisfactory. Raw milk that is intended for direct consumption in Estonia cannot be considered microbiologically safe without heat treatment. This is particularly important, as in Estonia, there is no legislative requirement to inform consumers that a product is unpasteurized.

4.5. Pilot study for resistance monitoring in fish and seafood

The representative from Switzerland showed outcomes of a pilot study on antimicrobial resistances in imported fish and seafood. Samples of shrimps, pangasius, salmon and oysters were collected at retail level. Bacteria found most frequently were *E. coli*, *Enterococcus faecalis*, *Pseudomonas aeruginosa*, and *Aeromonas* spp. Resistances were found to Ciprofloxacin, Tetracyclin, and others, 4% of *P. aeruginosa* were resistant to Meropenem. Multidrug resistance was particularly high for shrimps. The report concludes that future monitoring programs should focus on *E. coli*, *E. faecalis* and *P. aeruginosa* in pangasius and

⁴ <https://www.food.gov.uk/committee/acmsf/news-updates/news/2016/14899/fsa-launches-consultation-on-eggs-report>

shrimps, *E. faecalis* in salmon and *E. coli* in oysters. This work was also presented at the 15th meeting of the EFSA Emerging Risks Exchange Network.

5. Welcome and apologies for absence (13 April 2016)

The Chair welcomed the participants.

6. Topics for discussion

6.1. Risk assessment red meat chain

The Dutch representative presented a risk assessment of the red meat supply chain (beef, pork, mutton, horse and goat meat). The goal was to establish a risk based official control and better collaboration between the different official bodies. Most important pathogens are *Salmonella* and *Campylobacter*, recommendations focus on prevention of faecal contamination and ensuring clean slaughtering equipment. Hygiene plans should pay special attention to producers of high risk products, such as filet americain, steak tartar, raw beef sausage, carpaccio and steak. Use of antibiotics in livestock, especially illegal use, poses a risk for public health. Fraud was also included in the assessment but risk for food safety was considered to be small.

6.2. *Alaria alata* in wild boar meat : evaluation of the zoonotic potential and the public health risk

The representative from France gave a presentation on the ANSES opinion on *Alaria alata* and its zoonotic potential. ANSES was asked to 1) review the evidence on the zoonotic potential of *Alaria alata*, 2) provide a risk assessment of human infestation in France via the ingestion of wild boar meat and 3) assess the effectiveness of inactivation treatments (freezing and cooking) on the parasite's viability. The opinion concludes that the zoonotic nature of *Alaria alata* is not proven. Humans appear to be a negligible and accidental participant in the cycle. It seems difficult to estimate the probability of ingesting mesocercariae of this parasite via the consumption of wild boar meat. The inactivation measures that can be applied at the consumer's home are freezing to an internal temperature of - 22°C for at least 10 days, or thorough cooking at 74°C for 5 minutes.

6.3. Hepatitis E and the benefit of wearing gloves for hunters

The representative from Germany presented a study coordinated by BfR on hepatitis E and the benefit of wearing gloves for hunters and a BfR report dealing with this topic. Hunters can be exposed to hepatitis E virus (HEV) by direct contact to blood or other body fluids of wild boars during skinning and disembowelling and by consumption of undercooked meat and organs of the hunted animals. The objective was to 1) estimate anti-HEV prevalence among hunters in a specific district in Germany, 2) compare this anti-HEV prevalence with the general population and 3) identify factors that may be associated with HEV infection like hunting activities or consumer habits. The report concluded that hunters may benefit from wearing gloves when in contact with blood or body fluids of HEV animal reservoirs. This effect is more pronounced in areas in which the HEV incidence or prevalence is high. HEV and anti-HEV in wild boars differ considerably in different regions even if they are close to each other. Anti-HEV prevalence among the hunters of the study did not substantially differ from the general adult population in Germany.

6.4. Risk based microbiological limits for *Enterococci* or *E. coli* as indicator for *Salmonella* in pork?

The representative from Denmark discussed the use of limits for indicator bacteria to control *Salmonella* in pork. The objective of the study, carried out by Food DTU, was to assess whether microbiological limits for *Enterococci* and *E. coli* can reduce prevalence and concentrations of *Salmonella* on pork and whether a risk assessment model can estimate a reduction in public health risk. A reduction in prevalence and concentration of indicator bacteria on pork will probably reduce *Salmonella* prevalence and concentration as well. If the factor of this reduction is known, then a mathematical model can help to estimate the risk reduction. In fact, the model suggests that the *Salmonella* risk will be decreased by > 70% if the < 1% of pork with too high levels (above limit) of *Enterococci* is withdrawn and by > 30% if the < 3% of carcasses with too high levels (above limit) of *E.coli* is withdrawn. Setting microbiological limits for indicators may be useful but further research is necessary to confirm these results.

6.5. Feedback and conclusions on the last meeting's break-out session on *Salmonella* Infantis and *S. Stanley*

During the last meeting of the MRA Network in October 2015, a break-out session was held on questions in relation to *Salmonella* Stanley and *S. Infantis*. Replies to these questions were extensive and during the last meeting it was agreed that the data received should be collated in a single document. The network members from Austria and Croatia have created this summary document and presented the results to the network during this meeting. Based on the information provided by the network members, the following concluding remarks were made: there is some variation in the implementation of EU food safety legislation in the EU member states; serovar distribution differs in member states; there are pathogenic *Salmonella* serovars, other than *S. Enteritidis* and *Typhimurium*, that deserve attention; the number of human *Salmonella* *Infantis* cases seems to increase in some members states; *S. Stanley* seems to be found less frequently which could be related to underreporting; sampling schemes vary in member states; reporting *Salmonella* in the category "other" of the zoonoses monitoring data combines different serotypes; members did not report any current research activities in relation to *Salmonella* serovars other than *Enteritidis* and *Typhimurium*. The network agreed to discuss this topic further and the chair suggested planning a session for the next network meeting when relevant EFSA BIOHAZ opinions on *Salmonella* can be presented with a special focus on these two serovars.

6.6. *Campylobacter* workshop in Belgium

The Belgian representative provided feedback from a *Campylobacter* workshop held in Belgium in January 2016. The presented studies from the university of Gent were on 1) risk factors for *Campylobacter* contamination levels on broiler carcasses during slaughter, 2) evaluation of risk based microbiological criteria for *Campylobacter* on broiler meat using the Tool for Risk based Microbiological Criteria (TRiMiCri), 3) the effect of the cutting process on *Campylobacter* contamination levels in broiler meat cuts, and 4) quantitative risk assessment of *Campylobacter* spp. in minced poultry based meat preparations in Belgium. Results from another study carried out by Scientific Institute of Public Health (WIV-ISP) on the relation between *C. jejuni* strains isolated from the clinical

cases and collected from the monitoring carcass broiler plan in Belgium during 2011 to 2013, were also presented.

6.7. EUSR on antimicrobial resistance in 2014

EFSA presented its report on antimicrobial resistance in zoonotic and indicator bacteria in 2014. Resistance in zoonotic *Salmonella* and *Campylobacter* species from humans, animals and food, and resistance in indicator *Escherichia coli* as well as meticillin-resistant *Staphylococcus aureus* in animals and food was assessed. In *Salmonella* from humans, high proportions of isolates were resistant to ampicillin, sulfonamides and tetracyclines, whereas resistance to third-generation cephalosporins and to fluoroquinolones remained generally low, although it was markedly higher in some serovars commonly associated with broilers and turkeys. In *Salmonella* and *Escherichia coli* isolates from broilers, fattening turkeys and meat thereof, resistance to ampicillin, (fluoro)quinolones, tetracyclines and sulfonamides was frequently detected, whereas resistance to third-generation cephalosporins was uncommon. For the first time, presumptive extended spectrum beta-lactamase (ESBL)-/AmpC-/carbapenemase production in *Salmonella* and *Escherichia coli* was monitored in poultry. The occurrence of ESBL-/AmpC-producers was low, and carbapenemase-producers were not detected. Resistance to colistin was observed at low levels in *Salmonella* and *Escherichia coli* from poultry and meat thereof. In *Campylobacter* from humans, a high to very high proportion of isolates were resistant to ciprofloxacin and tetracyclines, whereas resistance to erythromycin was low to moderate. Resistance to fluoroquinolones in some MSs was extremely high; in such settings, the effective treatment options for human enteric *Campylobacter* infection may be significantly reduced. High resistance to ciprofloxacin and tetracyclines was observed in *Campylobacter* isolates from broilers and broiler meat, whereas much lower levels were recorded for erythromycin. Co-resistance to critically important antimicrobials in both human and animal isolates was generally uncommon, but very high to extremely high MDR levels were observed in some *Salmonella* serovars. A minority of *Salmonella* isolates from animals belonging to a few serovars (notably Kentucky and Infantis) exhibited high-level resistance to ciprofloxacin.

6.8. New and recent activities of the BIOHAZ Panel

The BIOHAZ secretariat informed the MRA network on recently adopted and current mandates of the BIOHAZ Panel. Recently adopted were the Scientific opinion on public health risks associated with enteroaggregative *E. coli* as a food-borne pathogen (EFSA-Q-2014-00536)⁵ and the Scientific opinion on heat treatments of live bivalve molluscs to eliminate pathogenic microorganisms (EFSA-Q-2015-00161)⁶.

The BIOHAZ Panel received a new mandate on *L. monocytogenes* contamination of ready-to-eat foods and the risk for human health in the EU (EFSA-Q-2015-00597)⁷.

7. Any Other Business

⁵ <http://www.efsa.europa.eu/en/efsajournal/pub/4330>

⁶ <http://www.efsa.europa.eu/de/efsajournal/pub/4332>

⁷ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2015-00597>

The representative from Norway provided information on a case of chronic wasting disease in a reindeer in Norway.

8. Date for next meeting

The next meetings of MRA network will be held on 11/12 October 2016 in Parma. The October meeting will have a joint session with the EFSA Scientific Network on Zoonoses Data Monitoring focussing on zoonoses.

9. Closure of the meeting

The chair thanked the participants and closed the meeting.