



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 14th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 12 April 2021

(Agreed on 21 April 2021)

Participants

■ Working Group Members:

Luisa Peixe
Hector Argüello
Thomas Berendonk
Lina Cavaco
Rob Davies
William Gaze
Heike Schmitt
Ed Topp (paritally)

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

Observers: see apologies

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Ernesto Liébana (partially), Pietro Stella (partially).

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



- Others: Observers
EEA: see apologies
EMA: Ricardo Carapeto (CVMP), Ana Vidal

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from Caroline Whalley (EEA), Michael Empl (EMA) and Luis Vivas (EC, DG-SANTE), all observers of the scientific opinion.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 13th Working Group meeting held on 12 February 2021.

The minutes of the 13th Working Group meeting held on 12 February 2021 were agreed by written procedure on 17 February 2021.⁴

5. Scientific topic(s) for discussion

5.1. Self-task Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of section 3.4. data gaps and research needs, and the discussion and agreement on section's concluding remarks and final conclusions (answers to the ToRs). The opinion is dealing with the three different production sectors: i) plants (vegetables, fruits, including production fields and processing plants); ii) terrestrial animals (poultry, bovines, swine including primary production and slaughter), and iii) aquaculture. Next steps were agreed, and tasks were distributed. The draft opinion will be presented for adoption at the 145 BIOHAZ Plenary on 29 April. Deadline for the opinion is 30 April 2020.

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-amr-environment.pdf>

⁵ <https://open.efsa.europa.eu/questions/EFSA-Q-2019-00343>



6. Next meetings

No further meetings are planned before adoption.



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 13th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 12 February 2021

(Agreed on 17 February 2021)

Participants

■ Working Group Members:

Luisa Peixe
Hector Argüello
Thomas Berendonk
Lina Cavaco
Rob Davies
William Gaze
Heike Schmitt
Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

Observers: see apologies

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Ernesto Liébana (partially), Pietro Stella.

■ Others: Observers

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



EEA: Caroline Whalley

EMA: Ricardo Carapeto (CVMP). Zoltan Kunzagi and Helen Juckes

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from EC (DG-SANTE), observer of the scientific opinion.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 12th Working Group meeting held on 12 January 2021.

The minutes of the 12th Working Group meeting held on 12 January 2021 were agreed by written procedure on 26 January 2021.⁴

5. Scientific topic(s) for discussion

5.1. Self-task Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of the draft scientific opinion sections 3.1. Sources, 3.2. Resistant bacteria and resistance genes, 3.3. Mitigation options and 3.4. Data gaps and research needs. Main updates were presented and conclusions were discussed. The opinion is dealing with the three different production sectors: i) plants (vegetables, fruits, including production fields and processing plants); ii) terrestrial animals (poultry, bovines, swine including primary production and slaughter), and iii) aquaculture. Next steps were agreed, and tasks were distributed.

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <https://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wq-amr-environment.pdf>

⁵ "Please be aware that EFSA's Register of Questions is unavailable from 21 January until mid-February. The temporary suspension of the tool is necessary to allow us to implement the launch of our new OpenEFSA portal. We apologise for the inconvenience. Further information is available [here](#)"



The draft opinion will be presented for thorough reading at the 144 BIOHAZ Plenary on 9-10 March. Deadline for the opinion is 30 April 2020.

6. Next meetings

The 14th meeting of the *ad hoc* WG will be a web-meeting that take place in early April (date to be confirmed).



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 12th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 12 January 2021

(Agreed on 26 January 2021)

Participants

■ Working Group Members:

Luisa Peixe
Hector Argüello
Thomas Berendonk
Lina Cavaco
Rob Davies
William Gaze
Heike Schmitt
Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

Observers: see apologies

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Ernesto Liébana (partially).

■ Others: Observers

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



EEA: Caroline Whalley

EMA: Ricardo Carapeto (CVMP). Michael Empl (partially), Ana Vidal (EMA staff)

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from EC (DG-SANTE), observer of the scientific opinion.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 11th Working Group meeting held on 30 November 2020.

The minutes of the 11th Working Group meeting held on 30 November 2020 were agreed by written procedure on 10 December 2020.⁴

5. Scientific topic(s) for discussion

5.1. Self-task Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of the current draft scientific opinion, mainly on section 3.2. Resistant bacteria and resistance genes, 3.3. Mitigation options and 3.4. Data gaps and research needs. Main updates in the documents Section 1 and 2, Introduction and Methodology, and section 3.1. Sources, were also presented. The opinion is dealing with the three different production sectors: i) plants (vegetables, fruits, including production fields and processing plants); ii) terrestrial animals (poultry, bovines, swine including primary production and slaughter), and iii) aquaculture. Next steps were agreed, and tasks were distributed. Sections 3.2., 3.3. and 3.4. will be presented

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-amrqpfeedresidues.pdf>

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



for first reading at the 143 BIOHAZ Plenary on 25-26 January. Deadline for the opinion is 30 April 2020.

6. Next meetings

The 13th meeting of the *ad hoc* WG will take place on 12 February (web-meeting).



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 11th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 30 November 2020

(Agreed on 10 December 2020)

Participants

■ Working Group Members:

Luisa Peixe
Hector Argüello
Thomas Berendonk
Lina Cavaco
Rob Davies
William Gaze
Heike Schmitt
Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

Observers: see apologies

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Liébana.

■ Others: Observers

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



EC: see apologies

EEA: Caroline Whalley

EMA: Ricardo Carapeto (CVMP). Michael Empl, Ana Vidal (EMA staff)

1. Welcome and apologies for absence

The Chair welcomed the participants. Marina Marini (DG-SANTE), acting as EC observer of the scientific opinion has change her position within SANTE.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 10th Working Group meeting held on 29 October 2020.

The minutes of the 10th Working Group meeting held on 29 October 2020 were agreed by written procedure on 10 October 2020.⁴

5. Scientific topic(s) for discussion

5.1. Self-task Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of the current draft scientific opinion, mainly on section 3.2. Resistant bacteria and resistance genes, 3.3. Mitigation options and 3.4. Data gaps and research needs. Main updates in the documents Section 1 and 2, Introduction and Methodology, and section 3.1. Sources, were also presented. The opinion is dealing with the three different production sectors: i) plants (vegetables, fruits, including production fields and processing plants); ii) terrestrial animals (poultry, bovines, swine including primary production and slaughter), and iii) aquaculture. Next steps were agreed, and tasks were distributed. Sections 1 and 2 and 3.1. will be presented for

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-amrqpfeedresidues.pdf>

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



first reading at the 142 BIOHAZ Plenary on 9-10 December. Deadline for the opinion is 30 April 2020.

6. Next meetings

The 12th meeting of the *ad hoc* WG will take place on 12 January (web-meeting).



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 10th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 29 October 2020

(Agreed on 10 November 2020)

Participants

■ Working Group Members:

Luisa Peixe
Hector Argüello
Thomas Berendonk
Lina Cavaco
Rob Davies
William Gaze
Heike Schmitt
Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

Observers: see apologies

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud.

■ Others: Observer

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



EEA: Caroline Whalley

EMA: Ricardo Carapeto (CVMP). Michael Empl (EMA staff)

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from Ernesto Liébana and Pietro Stella (EFSA) and the observer Marina Marini (DG-SANTE).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 9th Working Group meeting held on 24 September 2020.

The minutes of the 9th Working Group meeting held on 24 September 2020 were agreed by written procedure on 10 October 2020.⁴

5. Scientific topic(s) for discussion

5.1. Self-task Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of the current draft scientific opinion, mainly on section 3.2. Resistant bacteria and resistance genes, and 3.3. Mitigation options. The comments done by BIOHAZ panel at their last Plenary (21-22 September) on the different sections were discussed. The opinion is dealing with the three different production sectors: i) plants (vegetables, fruits, including production fields and processing plants); ii) terrestrial animals (poultry, bovines, swine including primary production and slaughter), and iii) aquaculture. Next steps were agreed and tasks were distributed.

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-amrqpfeedresidues.pdf>

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



6. Next meetings

The 11th meeting of the *ad hoc* WG will take place on 30 November.



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 9th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 24 September 2020

(Agreed on 10 October 2020)

Participants

■ Working Group Members:

Luisa Peixe
Hector Argüello
Thomas Berendonk
Rob Davies
William Gaze
Heike Schmitt
Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

Observers: Marina Marini (DG-SANTE)

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Pietro Stella, Ernesto Liébana.

■ Others: Observers

EEA: Caroline Whalley

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



EMA:Ricardo Carapeto

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from the member of the WG members, Lina Cavaco.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 8th Working Group meeting held on 19 August 2020.

The minutes of the 8th Working Group meeting held on 19 August 2020 were agreed by written procedure on 01 September 2020.⁴

5. Scientific topic(s) for discussion

5.1. Self-task Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of the current draft scientific opinion, namely the sections 3.3. mitigation options and 3.4. data gaps. The contributions done for the three different production sectors: i) plants (vegetables, fruits, including production fields and processing plants); ii) terrestrial animals (poultry, bovines, swine including primary production and slaughter), and iii) aquaculture were revised and discussed. Tasks were distributed.

6. Next meetings

The 10th meeting of the *ad hoc* WG will take place on 29 October.

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-amrqpfeedresidues.pdf>

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 8th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 19 August 2020

(Agreed on 01 September 2020)

Participants

■ Working Group Members:

Luisa Peixe

Hector Argüello

Lina Cavaco

Rob Davies

William Gaze

Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

Observers, Marina Marini (DG-SANTE)

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Pietro Stella.

■ Others: Observers

EEA: Caroline Whalley

EMA: see apologies

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from the member of the WG members Thomas Berendonk, Heike Schmitt, and the observer Ricardo Carapeto (member of the EMA CVMP), and Ernesto Liébana (EFSA).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 7th Working Group meeting held on 07 July 2020, Parma.

The minutes of the 5th Working Group meeting held on 07 July 2020 were agreed by written procedure on 15 July 2020.⁴

5. Scientific topic(s) for discussion

5.1. Self-task Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of the current draft scientific opinion. The new contributions done for the three different production sectors: i) plants (vegetables, fruits, including production fields and processing plants); ii) terrestrial animals (poultry, bovines, swine including primary production and slaughter), and iii) aquaculture were discussed. Tasks were distributed.

6. Next meetings

The 9th meeting of the *ad hoc* WG will take place on 23-24 September.

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-amrqpfeedresidues.pdf>

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 7th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 07 July 2020

(Agreed on 15 July 2020)

Participants

■ Working Group Members:

Luisa Peixe

Hector Argüello

Lina Cavaco

Rob Davies

William Gaze

Heike Schmitt

Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

Observers, see apologies

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Pietro Stella.

■ Others: Observers:

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



EEA: see apologies

EMA: see apologies

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from the member of the WG Thomas Berendonk, and the observers Ricardo Carapeto (member of the EMA CVMP), Caroline Whalley (EEA) and Marina Marini (EC DG-SANTE).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 6th Working Group meeting held on 05 June 2020, Parma.

The minutes of the 5th Working Group meeting held on 05 June 2020 were agreed by written procedure on 22 June 2020.⁴

5. Scientific topic(s) for discussion

5.1. Self-task Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of the current draft scientific opinion. For the three different production sectors: i) plants (vegetables, fruits, including production fields and processing plants); ii) terrestrial animals (poultry, bovines, swine including primary production and slaughter), and iii) aquaculture, the new contributions done, mainly regarding resistant bacteria and resistance determinants leading to contamination of foods of animal and non-animal origin through the sources identified in the different food production environments were revised. Tasks were distributed.

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-amrqpfeedresidues.pdf>

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



6. Next meetings

The 8th meeting of the *ad hoc* WG will take place on 19 August.



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 6th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 05 June 2020

(Agreed on 22 June 2020)

Participants

- Working Group Members:
 - Luisa Peixe
 - Hector Argüello
 - Thomas Berendonk
 - Lina Cavaco
 - Rob Davies
 - William Gaze
 - Heike Schmitt
 - Ed Topp

- Hearing Experts¹:
 - Not Applicable

- European Commission and/or Member States representatives:
 - Observers, see apologies

- EFSA:
 - BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Ernesto Liébana, Denise Pezzuto.

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



- Others: Observers:
 - EEA: Caroline Whalley (staff)
 - EMA: see apologies

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from the observers Ricardo Carapeto (member of the EMA CVMP) and Marina Marini (EC DG-SANTE).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 4th Working Group meeting held on 20 March 2020, Parma.

The minutes of the 5th Working Group meeting held on 27 April 2020 were agreed by written procedure on 11 May 2020.⁴

5. Scientific topic(s) for discussion

5.1. Self-task Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of the current draft scientific opinion. For the three different production sectors: i) plants (vegetables, fruits, including production fields and processing plants); ii) terrestrial animals (poultry, bovines, swine including primary production and slaughter), and iii) aquaculture, the contributions done regarding resistant bacteria and resistance determinants leading to contamination of foods of animal and non-animal origin through the sources identified in the different food production environments were revised. Tasks were distributed.

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-amrqpfeedresidues.pdf>

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



6. Next meetings

The 7th meeting of the *ad hoc* WG will take place on 7th July. This and other meetings, originally scheduled as a physical meeting, have been converted into a teleconference to avoid travelling to EFSA in line with the measures established to reduce the risk of coronavirus until the end of 2020. The 8th WG meeting will take place on 19 August.



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 5th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 27 April 2020

(Agreed on 11 May 2020)

Participants

■ Working Group Members:

Luisa Peixe
Hector Argüello
Thomas Berendonk
Lina Cavaco
Rob Davies
William Gaze
Heike Schmitt
Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

Observers, see apologies

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Ernesto Liébana, Denise Pezzuto.

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



■ Others: Observers:

EEA: Caroline Whalley (staff)

EMA: Ricardo Carapeto (member of the EMA CVMP).

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from the observers Julia Fábrega (EMA) and Marina Marini (EC DG-SANTE).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 4th Working Group meeting held on 20 March 2020, Parma.

The minutes of the 4th Working Group meeting held on 20 March 2020 were agreed by written procedure on 5 April 2020.⁴

5. Scientific topic(s) for discussion

5.1. Self-task Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of the current draft scientific opinion that focus on the three different production sectors: i) plants (e.g. vegetables, fruits, including production fields and processing plants); ii) terrestrial animal (poultry, bovines, swine including primary production and slaughter), and iii) aquaculture. For each sector, the contributions done on the sources and transfer pathways, resistant bacteria and resistance determinants as well as those factors leading to environmental contamination of foods of animal and non-animal origin with these bacteria and/or determinants were revised. Tasks were distributed.

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-amrqpfeedresidues.pdf>

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



6. Next meetings

The sixth meeting of the *ad hoc* WG will take place on 5th June. This meeting, originally scheduled as a physical meeting, has been converted into a teleconference to avoid travelling to EFSA in line with the measures established to reduce the risk of coronavirus. The next meeting, planned for 7th July will be also converted to a Web-conference due to this reason.



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 4th MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 20 March 2020

(Agreed on 6 April 2020)

Participants

■ Working Group Members:

Luisa Peixe
Hector Argüello
Thomas Berendonk
Lina Cavaco
Rob Davies
William Gaze
Heike Schmitt
Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

See apologies

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Ernesto Liébana, Denise Pezzuto.

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



■ Others: Observes:

EEA: Caroline Whalley (staff)

EMA: Julia Fábrega (staff), Ricardo Carapeto (member of the EMA CVMP).

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from Pietro Stella and Marina Marini (EC DG-SANTE) as well as from ECDC.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Agreement of the minutes of the 3rd Working Group meeting held on 24 January 2020, Parma.

The minutes of the 3rd Working Group meeting held on January 2020 were agreed by written procedure on 5 February 2020.⁴

5. Scientific topic(s) for discussion

5.1. Scientific opinion on the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁵

The *ad hoc* WG meeting focused on the revision of the current draft scientific opinion in order to agree on the structure of the document and level of detail needed for the different production sectors: terrestrial animal, plants (e.g. vegetables, fruits, including production fields and processing plants), and aquaculture. For each sector, the sources and transfer pathways, resistant bacteria and resistance determinants and risk factors leading to environmental contamination of foods of animal and non-animal origin with these bacteria and/or determinants will be reorganized accordingly. Tasks were distributed.

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://www.efsa.europa.eu/sites/default/files/wqs/biological-hazards/wg-amrqpfeedresidues.pdf>

⁵ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



6. Next meetings

The fifth meeting of the *ad hoc* WG will take place before end of April via Web (date to be decided). This meeting will be a second part of the present one, originally scheduled as a physical meeting, and converted into a teleconference to avoid travelling to EFSA in line with the measures established to reduce the risk of coronavirus. The next meeting, planned for 29-30 May will be also converted to a Web-conference due to the same reason.



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 3rd MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 24 January 2020

(Agreed on 05 January 2020)

Participants

■ Working Group Members:

Luisa Peixe

Hector Argüello

Thomas Berendonk (partially)

Lina Cavaco

Rob Davies

William Gaze

Heike Schmitt

Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

Marina Marini (partially), acting as observer.

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Karoline Noerstrud, Katrin Bote.

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



■ Others: Observes:

EEA: Caroline Whalley (staff)

EMA: Julia Fábrega (staff), Ricardo Carapeto (member of the EMA CVMP).

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from Pietro Stella, Ernesto Liébana (EFSA) and Dominique Monnet (ECDC). Due to technical problems, Thomas Berendonk could only join partially the meeting, not being able to follow properly the discussions.

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Scientific topic(s) for discussion

4.1. Scientific opinion the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁴

The *ad hoc* WG meeting focused on the revision and discussion of the workflow diagrams prepared by the experts of the WG for the different production sectors: 1. terrestrial animal (including farms, slaughterhouses and meat processing plants); 2. plants (e.g. vegetables, fruits, including production fields and processing plants), and 3. Aquaculture. These diagrams were produced in order to address ToR1, "Sources and transfer pathways leading to contamination of foods of animal and non-animal origin with antimicrobial-resistant bacteria and/or genetic resistance determinants". The level of detail needed to be considered for the different production steps, as well as the sources and risk factors identified for AMR environmental contamination were discussed.

Caroline Whalley updated the WG on the current status of the EU Water Legislation.

5. Next meetings

The third meeting of the *ad hoc* WG will take place on 19-20 March in Parma.

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 2nd MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

WEB-conference 5 December 2019

(Agreed on 19 December 2019)

Participants

■ Working Group Members:

Luisa Peixe
Hector Argüello
Thomas Berendonk
Lina Cavaco
Rob Davies
William Gaze
Heike Schmitt
Ed Topp

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

See apologies

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Eleonora Sarno, Karoline Noerstrud, Katrin Bote, Alice Vismarra.

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



■ Others:

Observers, see apologies.

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from Pietro Stella, Ernesto Liébana (EFSA); and the observers Dominique Monnet (ECDC), and the observers Julia Fábrega (EMA), Ricardo Carapeto (EMA CVMP), Caroline Whalley (EEA staff) and Marina Marini (EC DG-SANTE).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Scientific topic(s) for discussion

4.1. Scientific opinion the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁴

The experts of the *ad hoc* WG revised and agreed the interpretation of the ToRs done after the discussions of the first meeting. For the present scientific opinion, the term "environment" refers to food-producing environments: all environments where food of animal or non-animal origin is produced/ processed, at primary level (farms, fields, etc.) and post-harvest level (slaughterhouses, processing plants, etc). Retail is not included.

The experts focused the discussions on the contributions received for:

ToR1: *Sources and transfer pathways leading to contamination of foods of animal and non-animal origin with antimicrobial-resistant bacteria and/or genetic resistance determinants* for the three differentiated food production systems previously identified: 1. terrestrial animal (including farms, slaughterhouses and meat processing plants); 2. agriculture regarding vegetables and fruits production (fields, processing plants), and 3. aquaculture.

ToR2: *Antimicrobial-resistant bacteria and genetic determinants contaminating food through the routes identified above.* In relation to this, Frank Bolaert (EFSA) presented the latest data from the "Monitoring of zoonoses and food-borne outbreaks in the European Union".

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



5. Next meetings

The third meeting of the *ad hoc* WG will take place on 24 January (WEB-meeting).



SCIENTIFIC PANEL ON BIOLOGICAL HAZARDS

MINUTES OF THE 1st MEETING OF THE WORKING GROUP ON THE ROLE PLAYED BY THE ENVIRONMENT IN THE EMERGENCE AND SPREAD OF ANTIMICROBIAL RESISTANCE THROUGH THE FOOD CHAIN

(AMR ENVIRONMENT)

held on 24-25 October 2019, Parma

(Agreed on 12 November 2019)

Participants

■ Working Group Members:

Luisa Peixe

Rob Davies

Ed Topp

William Gaze

Thomas Berendonk

Heike Schmitt

Lina Cavaco has participated via teleconference

■ Hearing Experts¹:

Not Applicable

■ European Commission and/or Member States representatives:

See apologies

■ EFSA:

BIOCONTAM Unit: Beatriz Guerra, Pietro Stella, Ernesto Liébana, Eleonora Sarno (24 October), Alice Vismarra.

TS Unit: Marco Conterbia (for agenda item 5)

¹ As defined in Article 17 of the Decision of the Executive Director concerning the selection of members of the Scientific Committee, the Scientific Panels, and the selection of external experts to assist EFSA with its scientific work:
<http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.



■ Others:

Observers:

European Medicines Agency (EMA): Julia Fábrega (EMA staff) has participated via teleconference), Ricardo Carapeto (EMA CVMP).

European Environmental Agency: Caroline Whalley (EEA staff).

1. Welcome and apologies for absence

The Chair welcomed the participants. Apologies were received from Hector Argüello, Dominique Monnet (ECDC) and Marina Marini (EC DG-SANTE).

2. Adoption of agenda

The agenda was adopted without changes.

3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence² and the Decision of the Executive Director on Competing Interest Management³, EFSA screened the Annual Declarations of Interest filled out by the Working Group members invited to the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process, and no interests were declared orally by the members at the beginning of this meeting.

4. Induction to Digital Collaboration Platform and administrative issues

EFSA introduced the digital collaborative platform which will allow the WG members to work simultaneously on the same document, i.e. draft opinion and keep conversation together in a single application.

EFSA also introduced the process for delivering scientific opinions and provided information on administrative issues for the experts.

5. Scientific topic(s) for discussion

5.1. Scientific opinion the role played by the environment in the emergence and spread of antimicrobial resistance through the food chain⁴

² http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/policy_independence.pdf

³ http://www.efsa.europa.eu/sites/default/files/corporate_publications/files/competing_interest_management_17.pdf

⁴ <http://registerofquestions.efsa.europa.eu/roqFrontend/questionLoader?question=EFSA-Q-2019-00343>



The Mandate is a self-task mandate from the BIOHAZ Panel. The scientific opinion shall be adopted by 31 December 2020. The development of the opinion is closely followed by EFSA sister Agencies: One of the experts of the *ad hoc* WG is representing ECDC. Apart from ECDC participation, EMA, EEA and EC DG-SANTE are following the WG discussions as observers. EMA proposed an additional observer from their Antimicrobials Working Party of the Committee for Medicinal Products for Veterinary Use.

The background and Terms of Reference (ToR) of the Mandate (EC) were presented. The chair of the WG and EFSA secretariat (BIOCONTAM Unit) provided additional background information. The WG discussed thoroughly the four ToRs, they were clarified by the WG chair and EFSA staff and agreed on a common understanding of these. The WG discussed on existing data sources and discussed on possible methodology to be used to address the different ToRs. The need to perform uncertainty assessment according to the EFSA Scientific Committee's Guidance on Uncertainty Analysis in Scientific Assessments⁵ was indicated. The preliminary table of contents of the draft opinion was agreed, WG experts were appointed to further develop each of the sections in the draft opinion and tasks were allocated to EFSA staff and WG experts.

The date of the second meeting of the WG was agreed.

6. Next meetings

The second meeting of the *ad hoc* WG is 5 December (Web-meeting). The dates for the planned meetings for 2020 will be agreed in the next weeks.

⁵ <https://www.efsa.europa.eu/en/efsajournal/pub/5123>