# OUTCOME OF THE 8th SURVEY ON DRAFT BRIEFING NOTES

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*Knowledge, Innovation and Partnership Management Unit*

EUROPEAN FOOD SAFETY AUTHORITY

# SUMMARY OF THE OUTCOME

## 21 items for pre-assessment

9 draft BNs

1. Alongshan Virus in ticks
2. Acrylamide contamination in plant-based protein ingredients
3. New mycotoxin producing fungi species
4. Quaternary ammonium compounds
5. Ostreopsis in France
6. Health effects of emulsifiers
7. Arcobacter risk to the food industry and human health
8. Food safety and antifungal resistance
9. Chagas disease

43 experts answered

*(31 EREN experts & 12 StaDG-ER experts)*

32 institutions replies

*(21 EREN & 11 StaDG-ER)*

EUSurvey

Detailed results of the 8th survey on draft BN

1

# ALONGSHAN VIRUS IN TICKS AND SEROLOGICAL FINDINGS IN GAME AND DOMESTIC ANIMALS

*Submitted by Hungary (EREN)*

**Issue description:**

Alongshan virus (ALSV) is a **newly discovered virus** that has been shown to infect a wide range of hosts and has been associated with febrile illness in humans.

A recent study published in 2023 shows that **ALSV is widely distributed among ticks in Germany** and suggests that animals are likely to have frequent exposure to it, based on serological investigations [1].

**Sources:**

[1] Ebert CL et al. Detection and Characterization of Alongshan Virus in Ticks and Tick Saliva from Lower Saxony, Germany with Serological Evidence for Viral Transmission to Game and Domestic Animals. Microorganisms. 2023; 11(3):543. https://doi.org/10.3390/microorganisms11030543

**EFSA's feedback:**

This virus seems a new hazard in Europe only six years after its discovery in China.
No discussions have taken place or been planned about this topic.

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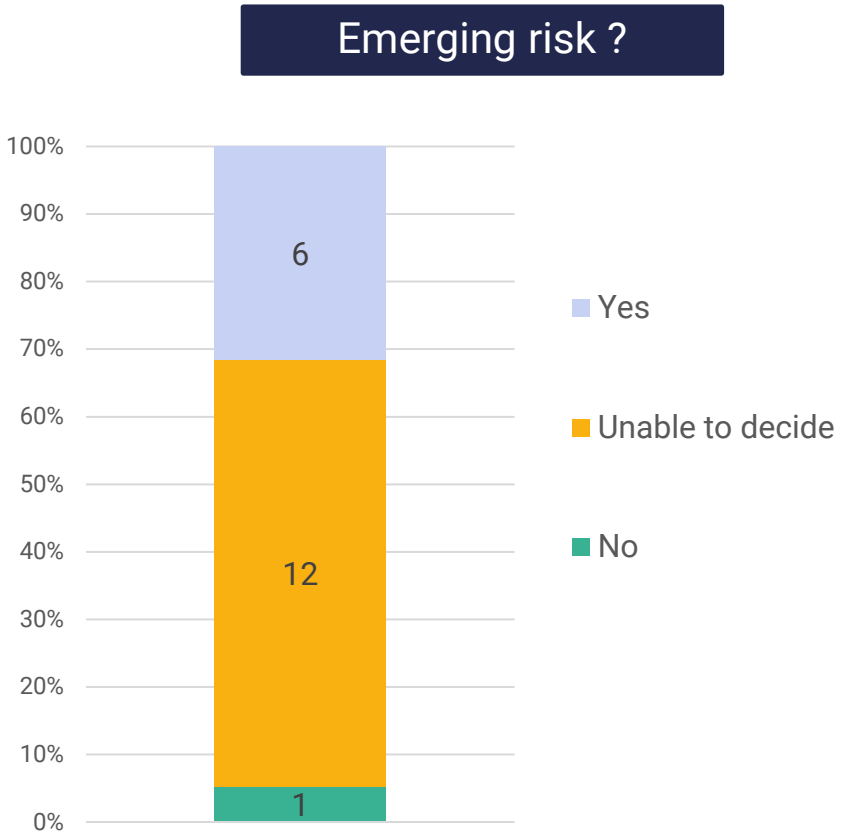
# ALONGSHAN VIRUS IN TICKS AND SEROLOGICAL FINDINGS IN GAME AND DOMESTIC ANIMALS

*19 answers*




- The virus has been recently detected in Europe
- Testing and research are necessary to determine the risk to animals and human
- More epidemiological data are needed because flaviviruses can infect a wide range of animal hosts

Suggested conclusion :

- Further info needed

# ACRYLAMIDE CONTAMINATION IN PLANT-BASED PROTEIN INGREDIENTS: A GROWING CONCERN

*Submitted by Hungary (EREN)*

## Issue description:

Acrylamide is a chemical that is formed when certain foods are cooked at high temperatures. It is suspected of being an endocrine-disrupting chemical that can harm reproduction and has been classified as a probable human carcinogen.

A study published in 2023 found significant differences in acrylamide contamination among different types of plant-based protein ingredients (PBPIs) produced through various processing methods. This study has **raised concerns about the presence of acrylamide in commercially available PBPIs** considering the **increasing demand** and utilization of PBIs [1].

## Sources:

[1] Squeo, G et al. Screening of Acrylamide Content in Commercial Plant-Based Protein Ingredients from Different Technologies. Foods. 2023; 12, 1331. https://doi.org/10.3390/foods12061331

## EFSA's Feedback:

EFSA opinion from the CONTAM panel in 2015: Scientific Opinion on acrylamide in food.

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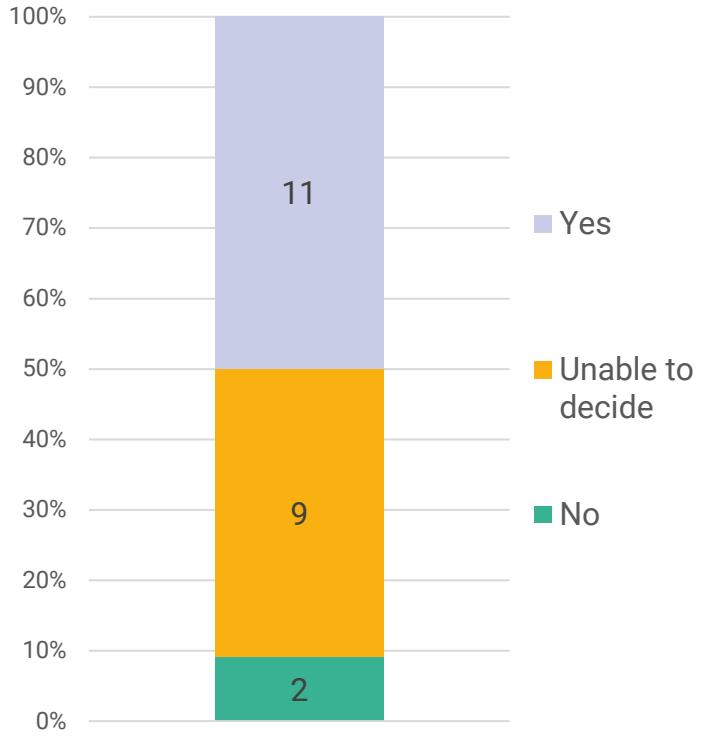
# ACRYLAMIDE CONTAMINATION IN PLANT-BASED PROTEIN INGREDIENTS: A GROWING CONCERN

*22 answers*

## Emerging risk ?




- Acrylamide is a well-known hazard
- There is an increased exposure due to consumption of vegetal products and plant-based protein ingredients ; vegetarians and vegans could be more exposed
- Information about consumption (pattern, amount) of plant-based products is required, as well as occurrences of acrylamide contamination in the different products

**Suggested conclusion :**

- **Emerging risk**

# NEW MYCOTOXIN PRODUCING FUNGI SPECIES

*Submitted by Hungary (EREN), previously underlined by Germany (EREN)*

**Issue description:**

In a study published in January 2021, the Agricultural Research Service (ARS) of the US Department of Agriculture (USDA) identified **33 new strains of mycotoxin-producing fungi** within the genus Fusarium. The objective of the work was to analyze the diversity, trichothecene-producing and wheat-disease-causing capacity of the Fusarium sambucinum species complex (FSAMSC) by examining 171 strains [1].

According to the lead author cited in the Food Safety Africa review [2], “some of these fungi also cause severe symptoms of [Fusarium Head Blight] FHB, an economically important disease of cereal crops in the United States”. The new species are available at the National Center for Agricultural Utilization Research (NCAUR) [2].

**Sources:**

[1] Laraba I et al. Phylogenetic diversity, trichothecene potential, and pathogenicity within Fusarium sambucinum species complex. PLOS ONE. 2021, 16(4): e0250812. https://pubmed.ncbi.nlm.nih.gov/33434214/

[2] Food safety Africa. USDA researchers discover 33 new mycotoxin-producing fungi species, 2022. [website consulted on 05/03/2024]. https://www.foodsafetyafrica.net/usda-researchers-discover-33-new-mycotoxin-producing-fungi-species/

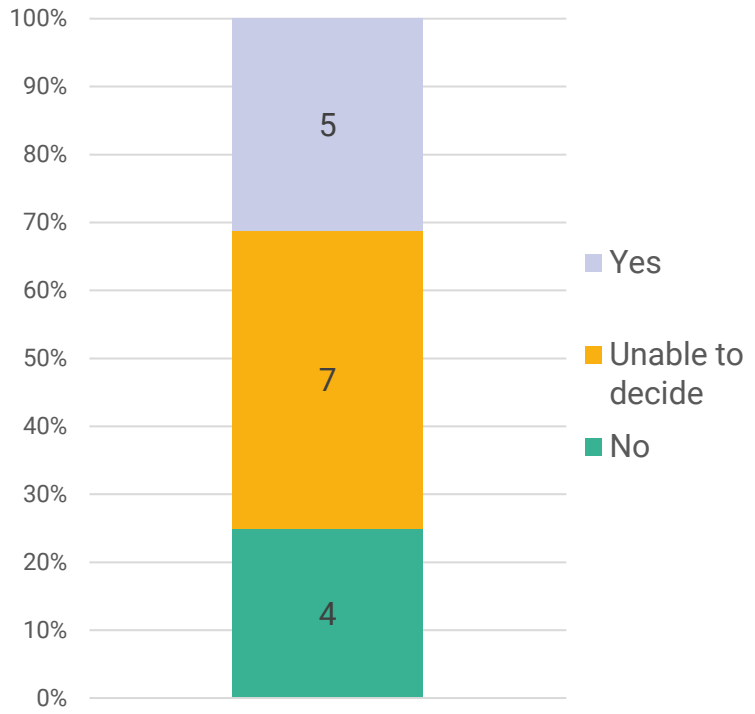
**EFSA's Feedback:**

There are a series of CONTAM opinions on mycotoxins in the past – also on trichotecenes.
No current mandates on mycotoxins.

# NEW MYCOTOXIN PRODUCING FUNGI SPECIES

*16 answers*

## Emerging risk ?




- Fusarium is not a new hazard, but such new stains could be
- The climate change and the reduction of the use of pesticides could lead to an increased exposure to mycotoxins
- More data are needed regarding condition for toxin production, toxicity of these new identified mycotoxins and their occurrence in food.
- Information on the impact of climate change in their prevalence could help to better characterize the exposure.

**Suggested conclusion :**

➢ Further info needed

# POTENTIAL HEALTH HAZARDS OF QUATERNARY AMMONIUM COMPOUND (QACS)

*Submitted by Hungary (EREN)*

## Issue description:

A literature review published in 2023 evaluates the existing information on the ecological and human health effects of Quaternary Ammonium Compounds (QACs) and **identifies several areas of potential concern** [1].
The ecological effects of QACs include acute and chronic toxicity to aquatic organisms, with some QACs reaching levels of concern. QACs are also associated with adverse health outcomes such as dermal and respiratory effects, developmental and reproductive toxicity, and antimicrobial resistance.

## Sources:

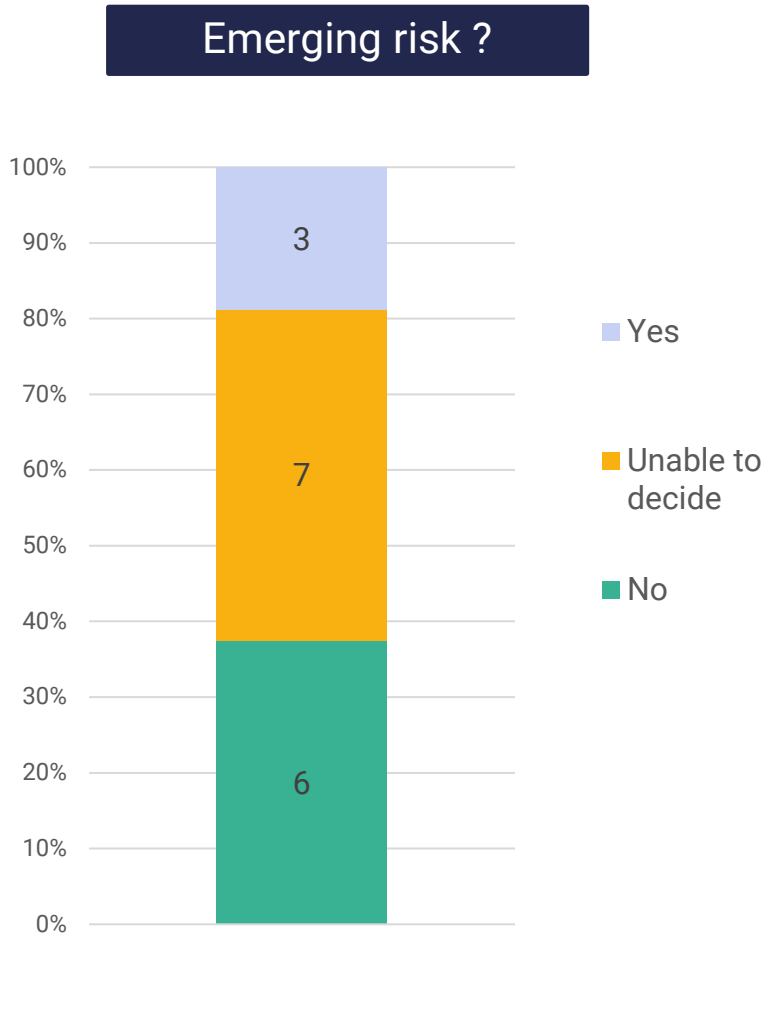
[1] Arnold WA et al. Quaternary Ammonium Compounds: A Chemical Class of Emerging Concern. Environ Sci Technol. 2023, 23;57(20):7645-7665.
https://pubmed.ncbi.nlm.nih.gov/37157132/

## EFSA's feedback:

- EFSA opinion in 2013 about "Evaluation of monitoring data on residues of didecyldimethylammonium chloride (DDAC) and benzalkonium chloride (BAC)"
- EFSA opinion in 2023 about "Risk assessment related to the presence of benzalkonium chloride (BAC), didecyldimethyl ammonium chloride (DDAC) and chlorates in fish and fish products".

# POTENTIAL HEALTH HAZARDS OF QUATERNARY AMMONIUM COMPOUND (QACS)

*16 answers*




- An increased use is suspected since the COVID pandemic
- More data is needed to assess the exposure to these compounds
- The effects and ecological risk are to be studied more thoroughly

Suggested conclusion :

➢ Further info needed

# RISKS TO HUMAN HEALTH ASSOCIATED WITH THE PROLIFERATION OF OSTREOPSIS IN FRANCE (SOUTH-WEST COAST)

*Submitted by France (EREN)*

## Issue description:

During the summer 2021, **Ostreopsis blooms were responsible for human outbreaks** in France (South-West coast) involving at least 674 people who developed flu-like symptoms. The main route of exposure was through exposition to contaminated aerosols. This is considered to be an emerging event, as it is the first time in France that human outbreaks due to Ostreopsis have been reported on the Atlantic coast. **Other outbreaks also occurred in summer 2022 in the same area**.

ANSES issued two opinions on the current state of knowledge on Ostreopsis and its toxins, on an oral acute health-based guidance value, a guideline value in shellfish, recommendations for monitoring, and a decision tree for risk managers regarding bathing activities [1,2].

## Sources:

[1] ANSES. Revised Opinion on the risks to human health associated with the proliferation of Ostreopsis spp. on the Basque coast. ANSES, 40 p.
https://www.anses.fr/en/system/files/EAUX2021SA0212EN.pdf
[2] ANSES. Opinion on the development of a toxicity reference value (TRV) for palytoxin (CAS No 77734-91-9), 19 p.
https://www.anses.fr/en/system/files/VSR2021SA0212-1.pdf

## EFSA's feedback:

EFSA opinion on palytoxins in 2009: Scientific Opinion on marine biotoxins in shellfish - Palytoxin group

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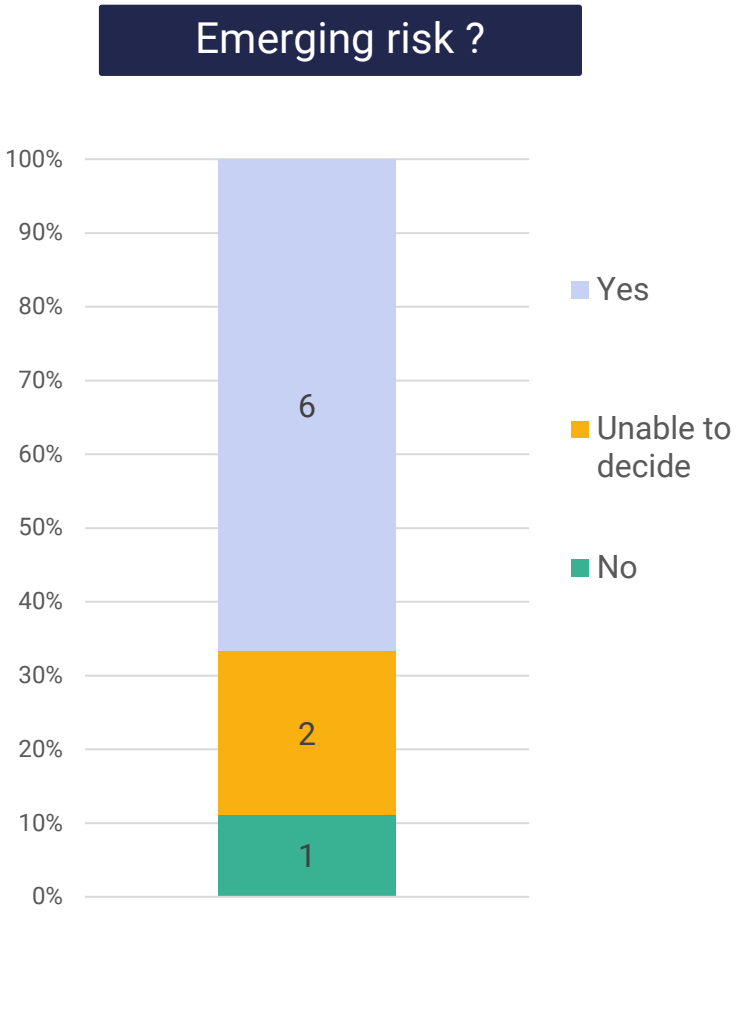
# RISKS TO HUMAN HEALTH ASSOCIATED WITH THE PROLIFERATION OF OSTREOPSIS IN FRANCE (SOUTH-WEST COAST)

*9 answers*




- These are the first human outbreaks that have been reported in Europe
- The climate change is a driver of the increased exposure to microalgae observed in France
- The route of exposure by aerosol contamination seems to be new

Suggested conclusion :

- Emerging risk

# HEALTH EFFECTS OF EMULSIFIERS

*Submitted by Hungary (EREN)*

## Issue description:

Several studies published between 2021 and 2023 underlined the potential link between emulsifiers and intestinal inflammation, colorectal, breast and prostate cancers. In addition, a recent cohort study published in 2024 has unveiled a **potential link between the consumption of certain emulsifiers (E407, E407a, E471) and an increased risk of cancer**.

## Sources:

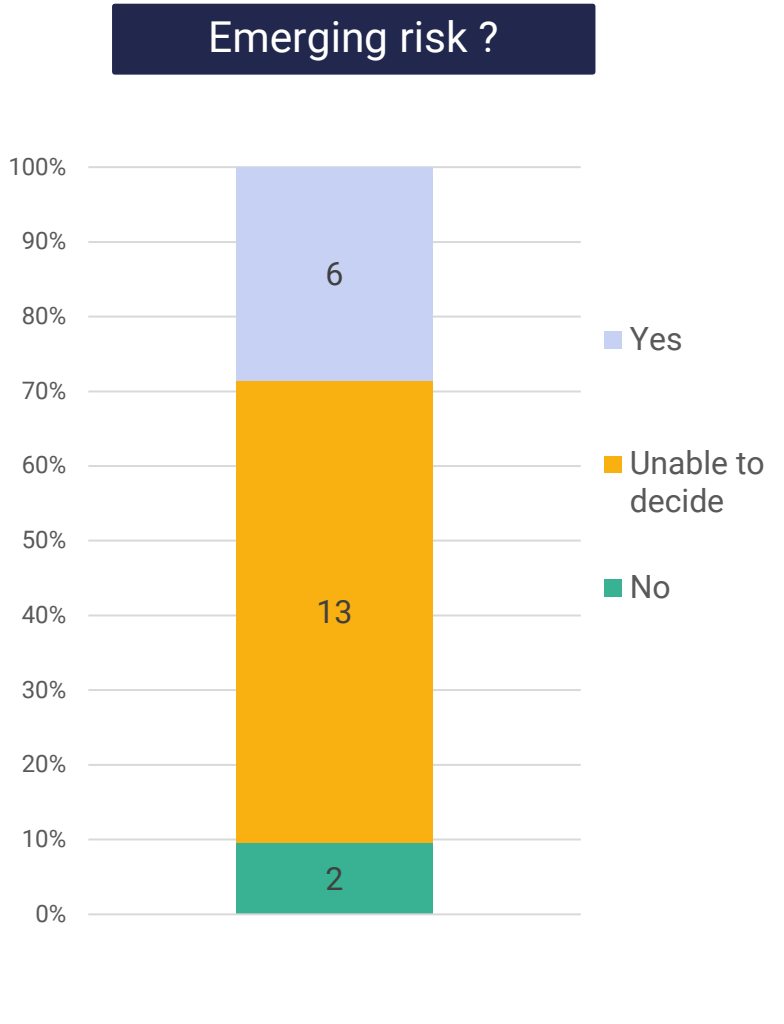
[1] Viennois E et al. Dietary Emulsifiers Directly Impact Adherent-Invasive E. coli Gene Expression to Drive Chronic Intestinal Inflammation. Cell Reports. 2021, 33(1), 108229.
https://doi.org/10.1016/j.celrep.2020.108229
[2] Naimi S et al. Direct impact of commonly used dietary emulsifiers on human gut microbiota. Microbiome. 2021, 9(1), 66.
https://doi.org/10.1186/s40168-020-00996-6
[3] Bancil AS et al. Food Additive Emulsifiers and Their Impact on Gut Microbiome, Permeability, and Inflammation: Mechanistic Insights in Inflammatory Bowel Disease. J Crohns Colitis. 2021, 22;15(6):1068-1079. https://pubmed.ncbi.nlm.nih.gov/33336247/
[4] Lerner A et al. Changes in intestinal tight junction permeability associated with industrial food additives explain the rising incidence of autoimmune disease. Autoimmun Rev. 2015, 14(6):479-89.
https://pubmed.ncbi.nlm.nih.gov/25676324/
[5] Viennois E et al. Consumption of Select Dietary Emulsifiers Exacerbates the Development of Spontaneous Intestinal Adenoma. International Journal of Molecular Sciences. 2021, 22(5), 2602.
https://doi.org/10.3390/ijms22052602
[6] Sellem L et al. Food additive emulsifiers and cancer risk: Results from the French prospective NutriNet-Santé cohort. PLoS Med. 2024, 13;21(2):e1004338.
https://pubmed.ncbi.nlm.nih.gov/38349899/

## EFSA's feedback:

BN ID0330 about “Long term effects of food emulsifiers on intestinal barriers” submitted in 2014 by EREN

# HEALTH EFFECTS OF EMULSIFIERS

*21 answers*




- Although the hazard and exposure have been previously identified, the health effects associated with them are gaining more evidence
- There is needs to better characterize the hazard with more human data, such as epidemiological studies and clinical trials
- This topic is already addressed under EFSA remit on food additives safety reviews

**Suggested conclusion :**

➢ Further info needed

# ARCOBACTER RISK TO THE FOOD INDUSTRY AND HUMAN HEALTH

*Submitted by Hungary (EREN)*

## Issue description:

In July 2022, a publication reported that **Arcobacter** were detected in 22.3 % of the samples (from different foods) collected in 2015 and **the most abundant species in all of them was *A. butzleri***, the one most often associated with human disorders [1].
In August 2023, a study was published about the **antibiotic resistance** of *Arcobacter butzleri* strains isolated from food and clinical samples. All of the tested strains were resistant to tetracycline and cefotaxime [2].

## Sources:

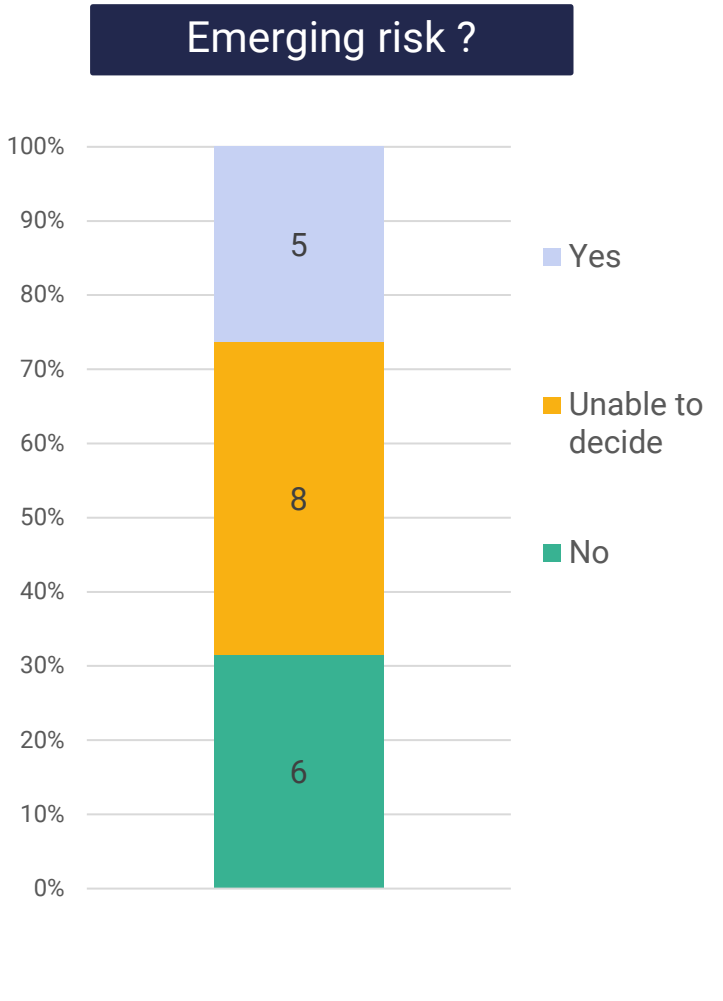
[1] Martinez-Malaxetxebarria I et al. Genetic characterization and biofilm formation of potentially pathogenic foodborne Arcobacter isolates. Int J Food Microbiol. 2022, 16;373:109712. https://pubmed.ncbi.nlm.nih.gov/35567892/
[2] Gabucci C et al. Widespread Multidrug Resistance of Arcobacter butzleri Isolated from Clinical and Food Sources in Central Italy. Antibiotics. 2023, 12, 1292. https://doi.org/10.3390/antibiotics12081292

## EFSA's feedback:

EFSA opinion on "Persistence of microbiological hazards in food and feed production and processing environments" (Arcobacter referred in Appendix C6, page 92) published on January 2024.
The Briefing note (ID444) refers to "Human infections due to enteropathogenic Arcobacter are probably underestimated"

# ARCOBACTER RISK TO THE FOOD INDUSTRY AND HUMAN HEALTH

*19 answers*




- The role of Arcobacter in human disease is not clear, there is a need of robust data linking human illness with contaminated food consumption
- More data on etiology and epidemiology are needed

Suggested conclusion :

➢ Further info needed

# FOOD SAFETY AND ANTIFUNGAL RESISTANCE

*Submitted by Cyprus (EREN)*
*previously underlined by Hungary (EREN)*

## Issue description:

In 2022 WHO launched for the first time the global report/effort to estimate the emerging threat of fungal pathogens and antifungal resistance. **There is increasing evidence that both the niche and the resistance rates of fungal pathogens have dramatically changed** in the environment including the food industry [1].
Additionally, there is alarming data indicating that multi-resistant *Candida* strains are disseminated in the food chain in certain parts of the world [2].

## Sources:

[1] Antimicrobial Resistance Division (AMR) WHO, Control of Neglected Tropical Diseases (NTD) WHO, Global Coordination and Partnership (GCP) WHO. WHO fungal priority pathogens list to guide research, development and public health action. 2022. 48p. https://www.who.int/publications/i/item/9789240060241
[2] Yadav V, Heitman J. On Fruits and Fungi: A Risk of Antifungal Usage in Food Storage and Distribution in Driving Drug Resistance in Candida auris. mBio. 2022 Jun, 13(3):e0073922. https://pubmed.ncbi.nlm.nih.gov/35575501/

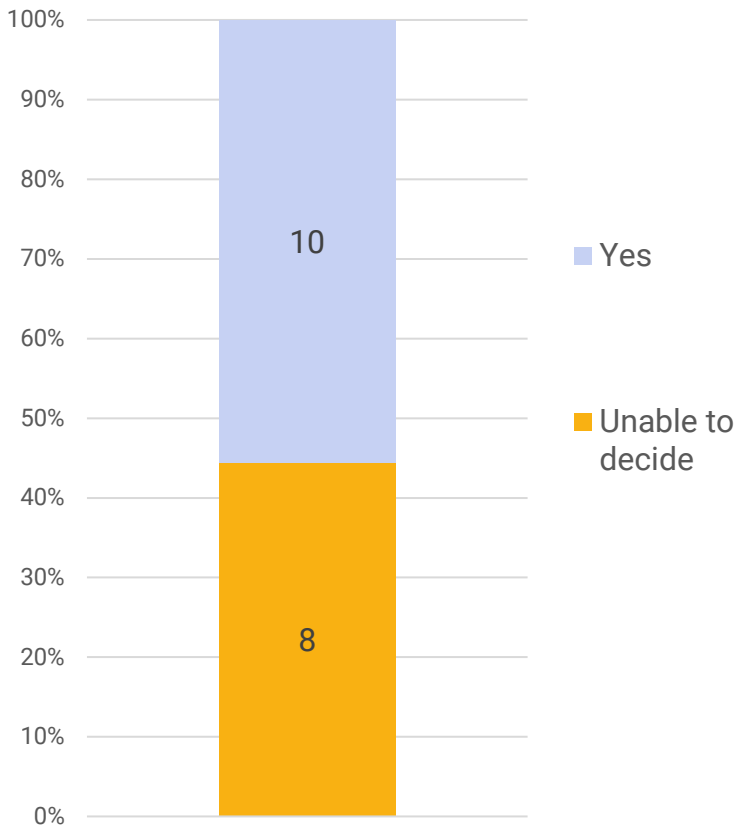
## EFSA's feedback:

Ongoing activity EFSA-Q-2022-00040 "Request for a Scientific Report on the impact of the use of azole fungicides, other than as human medicines, on the development of azole-resistant Aspergillus spp. " Risk assessment deadline on 31/12/2024.

# FOOD SAFETY AND ANTIFUNGAL RESISTANCE

*18 answers*

## Emerging risk ?




- Experts were greatly concerned about the increasing prevalence of fungal pathogens and the lack of available treatment options due to induced resistances
- Climate change and international trade could be drivers of this increased exposure
- More data are needed regarding drivers and especially the role of food in the transmission of these pathogens

* Antifungal resistance presentation (Cyprus) – 31 EREN meeting 2024

**Suggested conclusion :**

➢ **Emerging risk**

# CHAGAS DISEASE: AN UNDERESTIMATED FOODBORNE DISEASE?

*Submitted by Germany (EREN)*

**Issue description:**

A recent study published in 2024 highlights **the global burden of foodborne Chagas** disease.
Its incidence is rising in Europe and North America [1].

**Sources:**

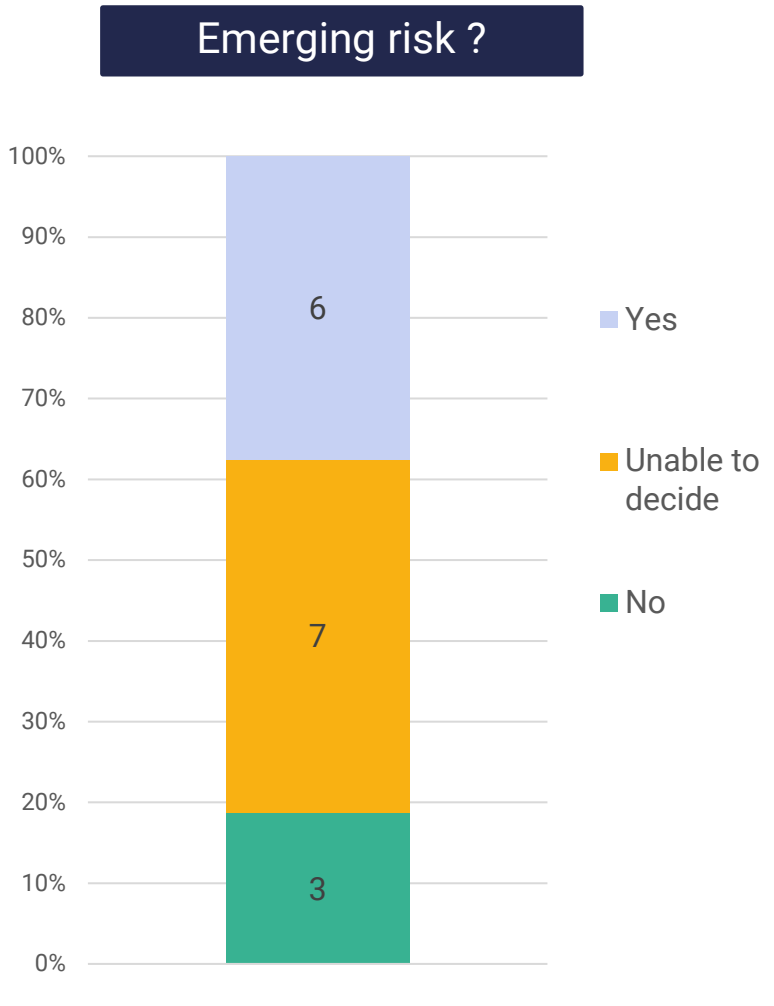
[1] Robertson LJ et al. The importance of estimating the burden of disease from foodborne transmission of Trypanosoma cruzi. PLoS Negl Trop Dis. 2024, 8;18(2):e0011898.
https://journals.plos.org/plosntds/article?id=10.1371/journal.pntd.0011898

**EFSA's feedback:**

The Briefing note (ID429) refers to "Potential Spreading of Vector-Transmitted Chagas-Disease to Europe"

# CHAGAS DISEASE: AN UNDERESTIMATED FOODBORNE DISEASE?

*16 answers*




- Chaga disease is a well-known hazard
- The climate change could be a driver of the increased prevalence observed recently in Europe
- Further information is required regarding the vector species involved, as well as the probability of transmission via the foodborne route

* Chaga disease presentation (Germany) – 31 EREN meeting 2024

Suggested conclusion :

- Emerging risk

# CONCLUSIONS OF DRAFT BRIEFING NOTES SUGGESTED BY EFSA

## Emerging Risk

2 Acrylamide contamination in plant-based protein ingredients: a growing concern

5 Risks to human health associated with the proliferation of Ostreopsis in France (South-West coast)

8 Food safety and antifungal resistance

9 Chagas disease: An Underestimated Foodborne Disease?

## No Emerging Risk

## Further info needed

1 Alongshan Virus in ticks and serological findings in game and domestic animals

3 New mycotoxin producing fungi species

4 Potential health hazards of Quaternary ammonium compound

6 Health effects of emulsifiers

7 Arcobacter risk to the food industry and human health

# Thank you very much for your participation

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EUROPEAN FOOD SAFETY AUTHORITY

safe
Safe Food Advocacy Europe

University of Veterinary Medicine Budapest

fasfc
.be Federal Agency for the Safety of the Food Chain

EBIC
European Biostimulants Industry Council

Federal Office of Consumer Protection and Food Safety

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