

SARS-CoV-2 and food safety: European Food Safety Authority literature monitoring activities during the pandemic

Main author: Maria Francesca Iulietto (Other)

Co-authors: Pietro Stella, Irene Muñoz Guajardo, Ernesto Liebana

INTRODUCTION

During the COVID-19 pandemic, despite the person-to-person transmission pathway being defined as the predominant route, concerns have been raised about other SARS-CoV-2 exposure pathways, such as via food.

Driven by the mission to contribute to ensuring food safety in the food chain through its independent scientific advice, the European Food Safety Authority (EFSA) implemented constant monitoring of the available evidence from the beginning of the pandemic, to investigate the role of food in the transmission of SARS-CoV-2 to humans.

METHODOLOGY

The search strategy was based on screening of the scientific literature (published in peer-reviewed journals available in the database of Web of Science, Clarivate Analytics) on the basis of two literature search questions: 'SARS-CoV-2 exposure via food' (string 1) and 'SARS-CoV-2 and orofaecal transmission' (string 2). The screening was performed as of July 2020 and is currently ongoing.

RESULTS

The two search strings made it possible to identify a broad spectrum of relevant literature related to the possible transmission of SARS-CoV-2 through the food chain, the occurrence and the survival of the virus in food and food contact materials, its survival in the gastrointestinal tract, the possibility of establishing intestinal infection and shedding of the virus via faeces.

The total number of retrieved articles from the two strings is > 15 000 (string 1) and > 7 000 (string 2), and the average number of new hits available every week is > 300 articles and > 100 articles, for string 1 and string 2, respectively. Around 2 000 articles have been collected in the repository after title screening. The process includes title, abstract and full-text screening to identify and assess new evidence of food-borne transmission and any food safety risk in relation to SARS-CoV-2.

After more than 13 months of screening, it is possible to acknowledge a growing body of knowledge worldwide, resulting from new research and production of original data in the field.

Overall, it is still considered that the agent is not a foodborne pathogen, as stated previously by EFSA and other national and international institutions.

DISCUSSION

Nevertheless, food and food packaging may act as any other surface, carrying the virus in case of contamination from an infected person. The application of all principles and hygienic procedures to ensure food safety along the food chain should be maintained and implemented, along with the current guideline recommendations to avoid human-to-human transmission of COVID-19.

The detection of viral RNA in faeces led to extensive research in the field of wastewater (i.e. wastewater-based epidemiology, detection tools and treatment methods). There is still scientific uncertainty concerning the persistence of infectious viruses through faecal shedding and much more robust evidence is needed before firm conclusions can be drawn.

In conclusion, as stated by EFSA in March 2020, and confirmed in May 2021, no evidence currently exists that food is a source or transmission route of SARS-CoV-2. The scientific literature will continue to be monitored in conjunction with active collaboration and communication with public health institutions and stakeholders.