Food Safety Aspects of Integrated Food Systems: Lessons from the 2021 Parma Summer School

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INTRODUCTION

As part of the 2021 Parma Summer School activities organised by EFSA, the University of Parma and the Catholic University of the Sacred Heart, early-career researchers, experts and practitioners explored the relevance of food safety in supporting the shift to food systems that are more sustainable. Specific attention was given to the advancement of risk assessment approaches to better protect human health, animal health and the environment, accounting for food system transformations.

METHODOLOGY

The School was organised across three areas that explore how food safety integrates into food systems:

- Science-oriented, focusing on new risks posing emerging hazards to humans, animals and the environment;
- Demand-oriented, emphasising the impact on food system dynamics of changing consumer habits, attitudes and risk perception;
- System-oriented, focusing on governance and institutional issues affecting food safety.

These three views were then applied to three cases:

1. Biodiversity and Environmental Safety, illustrating the need to further advance environmental risk assessment (ERA) approaches for regulated products.

2. Chemical Mixtures, dealing with the human health risk assessment of chemical mixtures, a major issue for the assessment of chemical hazards in real-life scenarios.

3. Novel Food and Technologies, addressing the technical, social and regulatory challenges in novel food technologies.

The case studies were addressed in separate thematic sessions: in the morning, scientists and experts provided participants with the advancements derived from the three

perspectives. In the afternoon, selected participants met the experts for sharing experiences and projects.

RESULTS

The 2021 Parma Summer School took place as a virtual event on 28-30 September 2021. In total, 1 241 applicants completed the registration process. Most applicants were young (79 % <40 years) and from EU countries (78 %; Italy 25 %, Spain 14 %, and Greece 10 % the most represented), whereas the most represented non-EU countries were Turkey (4 %) and the UK (3 %). Most of the applications came from universities and public research institutes (57 %) and from the private sector (17 %). The EU national authorities (6 %), institutions and agencies (4 %) were less represented.

Given technical constraints, the organisation committee carried out a selection process to guarantee the wider heterogeneity of the applicants. At the end of the process, 225 applicants were selected to participate at the Summer School. An internal selection process was carried out by the three organising institutions for an extra 75 positions (25 each). Overall, 300 young researchers and professionals took part in the morning sessions and 72 took part in the afternoon sessions. All the materials, including those relating to registrations, have been made available for both accepted and non-accepted registered participants.

DISCUSSION

The 2021 Parma Summer School indicated the need to address the interdependence of food safety aspects with food system dimensions to attain and reconcile food security, food safety, and nutrition for both present and future generations. This requires the combination of different expertise and disciplines, involving tools able to embrace the complex web of interaction that links actors, data, food contexts and institutions, etc. In the Biodiversity and Environmental Safety session, the need for an advanced ERA was further addressed for honey bees, for which a more holistic and integrated (systems-based) approach has been developed by EFSA. The analysis included an economic and legal evaluation of such approaches. The Chemical Mixture session provided a specific focus on harmonised methodologies, developing case studies on mycotoxins; more advanced probabilistic methods are required to take the probability of co-exposure to chemicals into account. Lastly, the Novel Food and Technology session indicated the need to understand societal and market acceptance of novel food products, e.g. in-vitro meat, insect-based products, etc., in order to predict their role in the transformation of food systems.