

Background

Securing the food chains from primary production to consumer-ready food against major deliberate, accidental or natural contaminations is directly related to the safety of food products. Many alerts from European Countries via the Rapid Alert System for Food and Feed (RASFF) over the past years included spices and herbs, indicating the need of monitoring this commodity.

Despite the low water activity of the final spice and herb products, which inhibits biological growth, spices and herbs are natural products that can be contaminated with several microorganisms, among them pathogenic species. However, also chemical contaminations may occur, mainly due to natural or unintentional inclusion, but also because of economical benefits. Microbial and chemical contaminations can take place at numerous vulnerable points within the production, processing and/or supply chain and can pose a tremendous risk for farmers, producers and consumers, leading to e.g. severe food-borne infections and intoxications.

Spices and herbs are contained in almost every processed food, including ready-to-eat products; thus consumers can be directly exposed to contaminated spices and herbs. The identification of condiments as a cause of a natural, accidental or intentional outbreak would be difficult, as consumers and experts that are investigating the outbreak often focus on major food ingredients instead of minor components, as seen during the enterohemorrhagic *Escherichia coli* crisis in Germany in 2011.

The EU market is one of the largest markets for spices and herbs in the world. These commodities are mostly imported in dried or crude form from producing regions outside of the EU. A large proportion of imported spices and herbs are used in the industrial sector, especially in the processing of meat and production of ready-to-eat products in general; but also the retail sector for private consumers and the catering sector have large turnovers in spices and herbs.



Aims

- To characterize the heterogeneous matrices of spices and herbs and their respective production and supply chains in context with relevant biological and chemical hazards that can lead to major natural, accidental or intentional contaminations in the food supply chain.
- To improve the knowledge on biological hazard properties as well as on-site and high throughput diagnostic methods for appropriate detection.
- To reduce (industrial) chemical adulterations and to ensure authenticity of spices and herbs by evaluation and improvement of non-targeted fingerprinting methods.
- To improve alerting, reporting and decontamination systems as well as techniques to ensure prevention and response on high quality level.

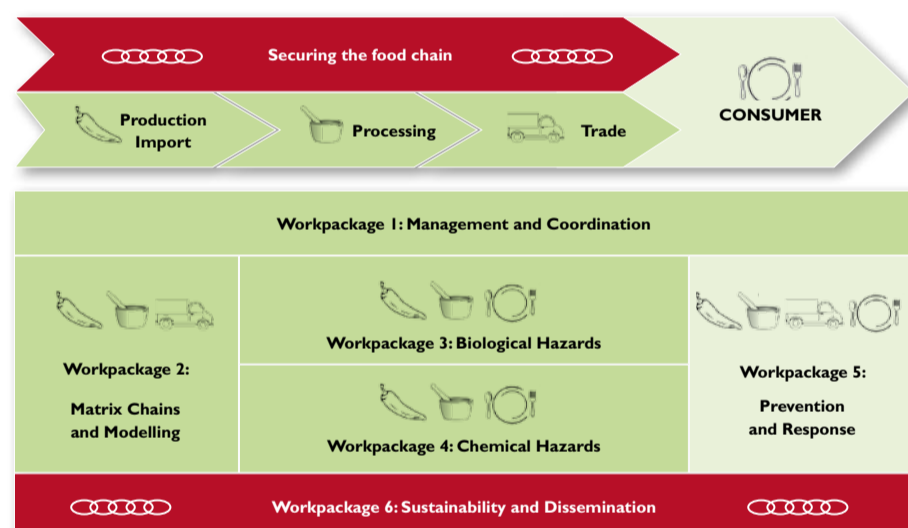


SPICED principles

- Natural, accidental or intentional contaminations within the food chain are realistic events and have to be considered together, not individually.
- Measures against intentional attacks need to be based on available (food safety) systems.
- Food safety and food security are still a major concern in many EU member states due to repeated food borne outbreaks and issues caused by contamination.
- The complexity and vulnerability of food supply chains are correlated to available opportunities for pathogen transmission.
- Minor components hold major potential to contaminate a wide range of products in a large-scale distribution area.

SPICED concept

The structure of SPICED aims at securing the food supply chain of spices and herbs against natural, accidental or intentional biological and chemical contaminations and, therefore, at the protection of the European consumers' health as well as a protection against economic loss.



The structure of the project SPICED spanning from production and import to the consumer within all workpackages.

Coordinator



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Consortium

This unique consortium is composed of experienced institutions from the European Union and includes partners from industry, academia and food authorities.

Project partners

1. Federal Institute for Risk Assessment, Germany
2. Austrian Agency for Health and Food Safety, Austria
3. Institute of Food Safety, Animal Health and Environment, Latvia
4. DLO foundation – RIKILT, the Netherlands
5. FUCHS Gewürze GmbH, Germany
6. National Agricultural Research and Innovation Center, Hungary
7. RTD Services, Austria
8. University of Limerick, Ireland
9. National Agricultural and Food Center, Slovakia
10. Bundeswehr Research Institute for Protective Technologies & NBC-Protection, Germany
11. Wageningen University, the Netherlands

Associated partners

12. European Spice Association, Germany
13. Fachverband der Gewürzindustrie, Germany
14. Van Hees GmbH, Germany
15. Kräuter Mix GmbH, Germany

