

Title: Risk Factors Affecting the Food Safety Risk in Food Business Operators for Risk-based Inspection: A Systematic Review

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Abstract:

Foodborne illnesses result in a high disease burden worldwide, making food safety control of food business operations (FBOs) an urgent issue. With public agencies and FBOs facing challenges in monitoring the complex food supply chain with limited resources, scientific and objective insights into those factors that are related to food safety at FBOs are needed. These factors can be used as input for risk-based inspection. We conducted a systematic review to identify and analyse risk factors affecting the FBOs' food safety risk. We used a predefined search string in Scopus and Web of Science to search for scientific manuscripts published in the English and Chinese languages between 1 January 2003 and 1 February 2023. The review identified 53 relevant studies and 43 risk factors. The presence of certified personnel turned out to be the most cited factor related to FBO food safety risks. Nearly half of the extracted factors had only been investigated in one study. Other challenges were identified for developing a universal ready-to-use list of factors for the building of a risk-based inspection method, such as the limitation in the applicability of identified factors in different types of FBOs, and the variability in conclusions between publications for certain factors (i.e., food safety management system certification, FBO location, and inspection history), stressing the need for additional research. Future studies should also prioritize standardizing definitions and measurement methods, particularly regarding compliance factors. In general, the current list of risk factors brought forward in our review lays the groundwork for the goal of building a transparent, objective, and risk-based method for food safety inspections of FBOs.

Biography:

Yuanxiao Ze, a second-year Ph.D. student at Wageningen University & Research, currently working on developing risk-based methods for food safety inspection frequencies. She received master's degree in food security from the University of Edinburgh and a bachelor's in food safety and quality. Yuanxiao's research focuses on identifying factors that affect food safety risks in food business operations. In the upcoming presentation, she will highlight key findings from a systematic review that examines various risk factors and underscores the need for further research and standardization in the field.



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Notes or Comments: