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Individual microbial risks evaluation: A three-dimensional model to assist consumers in their food safety decision making processes

In the last decades, widespread adoption by the food and beverage industries of hygiene principles and HACCP plans, have strengthened their ability to methodically design programs to ensure the microbiological safety of their products. The ensuing integration of these international standards into dynamic risks assessment models, and the coordinated efforts of risks managers to effectively control known and emerging hazards, have been coupled with unprecedented risks communication efforts worldwide. Nonetheless, in this global arena, the weakest link in food safety remains the consumers. Consumers, who are not only frequently faced with very complex decisions concerning hazards in food chains, but also often unaware of the contributing factors which can make them more susceptible to food borne intoxications and infections. In this novel approach to risks communication, consumers are first taken through questions regarding their age, health status, prior conditions, as well as their geographical origin and current location, and integrated with the available clues and indicators about their immune and gastro-intestinal microbiome status. In the second step, information regarding the nature of the food or drink they intend to consume, is confronted to the applicable epidemiological and risks assessment models, as well as to the established food safety recommendations, and possibly also with the withdrawn and recall data of the food or drink if available. The resulting output is a three-dimensional image, where the individual risks to the consumer are estimated to visually assist the consumer in their food safety decision making processes.

Biography

Aleardo Zaccheo is a plant pathologist and a food microbiologist trained in Switzerland and California. He received his bachelor's degree from Fresno State University and his master's degree and postgraduate in Genetic Engineering from San Francisco State University. In 1992 has cofounded with his wife Sun Lai Zaccheo-Man the firm bioethica food safety engineering, where they are currently acting as CEO and CFO respectively.

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