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Non-thermal intervention processing for inactivation bacteria at Eastern regional research center (ERRC)

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Abstract

Physical and chemical treatments are used in food processing to eliminate, or at least reduce, the population of pathogenic and spoilage microorganisms. The needs for a non-thermal intervention technology that can inactivate microbial populations without altering nutrient quality of liquid foods have been proposed and several of these non-thermal technologies have been commercialized including ultraviolet processing. At the Eastern Regional Research Center (ERRC), Agricultural Research Service (ARS) of the United States Department of Agriculture (USDA), we have developed, modified and studied some of the non-thermal processing intervention technologies for their bacterial inactivation on a variety of foods. The objective here is to summarize some of the work on food safety and quality research using our own in house non-thermal processing technologies. The efficacy of these technologies on bacterial inactivation including the mechanism of inactivation will be elucidated to show similarities or differences associated with each technology.

Biography

Dike O. Ukuku got his Ph.D. in Food Microbiology from Wayne State University, Detroit, Michigan, 1995. He is a Fellow of King-Chaves-Parks Future Faculty, 1993, and a Fellow of Japan Society for Promotion of Science, 2006. He was invited to the Membership of Science Advisory Board, 2009-present, a Gold Medalist, for outstanding public service in 2009, USDA-OPEDA Unsung Hero Award, 2010, Outstanding Technical Achievement for Food Safety, 2012 Award. Has authored and coauthored more than 60 publications. He is on editorial board membership of three scientific journals, has numerous invitations to act as an in depth subject matter expert for manuscripts submitted to scientific journals, as well as grant programs including USDA's SBIR phase 1, BARD and 1890 institutions.

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