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Matia Mukama, PhD

Lecturer and Examination Coordinator, Food Science and Technology

Kyambogo University, Kampala

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Born in 1988 in Namutumba, Uganda

BSc in Food Science and Technology, Makerere University, MSc and PhD in Food Science, Stellenbosch University

FELLOWSHIP

Iso Lomso-Fellow

ARBEITSVORHABEN

The Cold Chain and Perishable Produce Loss in the Ugandan Food System

The annual increase in the world population puts pressure on the food systems to provide enough food for all global citizens. Among the foods most consumed are those with a short life span, termed perishable produce, that need special handling after harvest or slaughter. They include fish, meat, poultry, dairy products, eggs, fruit, and vegetables. These easily spoil and become unsafe for consumption if not kept at recommended refrigeration conditions long after harvest or slaughter. The handling of perishables under refrigerated conditions during transit, storage, and display is termed cold chain handling. While cold chains are well developed in developed countries, most developing countries have minimally invested in cold chains and therefore contribute greatly to post-harvest losses and the waste of perishable produce globally and to related costs on the environment and climate. This research seeks to establish the cold chain capacity in the Ugandan food value chain and the related costs in terms of losses and waste where absent. The results of this study will guide policy on and investment in this important aspect of the food system.

Recommended Reading

Mukama, Matia, Alemayehu Ambaw, and Umezuruike Linus Opara (2020). "Thermophysical Properties of Fruit—a Review with Reference to Postharvest Handling." *Journal of Food Measurement and Characterization* 14: 2917–2937. <https://doi.org/10.1007/s11694-020-00536-8>.

Mukama, Matia, and Paula Abaasa (2024). "Assessment of the Cold Storage Capacity Used in Bulk Handling of Perishable Agricultural Produce in Ugandan Cities." *International Journal of Refrigeration* 165: 233–244. <https://doi.org/10.1016/j.ijrefrig.2024.05.030>.

Mukama, Matia, Alemayehu Ambaw Tsige, Robert Lufu, and Umezuruike Linus Opara (2024). "Sustainable Package Design for Efficient Pomegranate Cold Chain: Enhancing Storage Space, Sea Freight Efficiency, Material Sustainability, and Energy Conservation." *Food Packaging and Shelf Life* 46: 101380. <https://doi.org/10.1016/j.fpsl.2024.101380>.

The shelf life and quality of perishable produce after harvest is highly dependent on the interplay of a series of activities including, but not limited to, proper (physical) handling, sorting, temperature management, relative humidity levels, air flow, package design, and storage management, including mixing, in-, and outflow. In this talk, I will elaborate on how proper management of this complex network of activities reduces postharvest produce losses and will share recent findings of application in the Ugandan food system.

PUBLIKATIONEN AUS DER FELLOWBIBLIOTHEK

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Sustainable package design for efficient pomegranate cold chain : enhancing storage space, sea freight efficiency, material sustainability, and energy conservation

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