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## The Need to Preserve the Microbiome of African Traditional Fermented Foods and Beverages

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### Abstract

The human population in Africa is estimated at ca. 1.3 billion, it has become essential to support the growing population with safe and healthy foods. Already, traditional fermented foods and beverages play a major role in the diet of people across African countries, where a wide variety of raw agricultural products are fermented to a variety of foods and beverages.

It is well known that microbial biotransformation contributes to the most significant biochemical changes during fermentation with corresponding health, safety and sensorial advantages. Therefore, understanding the microbial population dynamics as well as in situ growth and metabolic signatures would help in the design of specific starter cultures to produce standardized, safer foods, benefit gut health and nutritional intake. Currently, the use of next-generation sequencing technology in combination with bioinformatics to study the microbiome of different African fermented foods and beverages looks very promising. This is helping to specifically identify previously unknown microbes and their functional roles that can be exploited during industrial processes. This can significantly support process optimization and facilitate the continental desire for food security and safety. This presentation depicted the recent advances on the microbiome of African fermented food and beverage and the need to preserve them for food biotechnological benefits.

### Biography: Prof Folarin Oguntinyinbo

Prof. Folarin Oguntinyinbo is a Fermentation Microbiologist at the A.R. Smith Department of Chemistry and Fermentation Sciences, Appalachian State University. He joined Appalachian in 2018 from the University of Lagos, Nigeria where he worked as Professor of Food Microbiology. He attended the 2005 microbial diversity course at the Marine Biological laboratory, Woods Hole, MA. He was a Georg Forster Experienced Researcher of the Alexander von Humboldt at the Max Rubner-Institut, Institut für Microbiologie und Biotechnologie, Kiel, Germany as well as Newton International Fellow of the Royal Society, UK at the Institute of Food Research, Norwich, UK, now Quadram Institute Bioscience. Also, he is a previous visiting guest researcher at the Center for Food Safety and Applied Nutrition, FDA, Maryland, USA. He is the recipient of 2016 Food Safety Award for a Professional in a Country with Developing Economy of the International Association for Food Protection (IAFP), St. Louis, Missouri. He is an active member of Society for Applied Microbiology (SfAM) United Kingdom and American Society for Microbiology (ASM).

His research focuses on the molecular microbial ecology of fermented foods and beverages, the biochemical changes, sensory attributes and process optimization. This is aimed at provision of safe foods, improved quality and organoleptic properties through linkage of the microbiome in fermented foods with their metabolic signatures. In addition, he is testing hypotheses that can support industrial fermentation systems by maximizing microbial in situ growth dynamics, kinetics, functional properties and to determine how fermented foods impact human gut microbiome. His research frontiers is address unanswered questions on development of multifunctional starter cultures for traditional and industrial fermented food processing, agricultural postharvest value addition, reduction of food waste, improvement of nutritional intake and gastrointestinal health. At the SAAFoST Congress 2021 Folarin will be talking about the need to preserve the microbiome of African traditional fermented foods and beverages.