



Food Safety in Africa: Major Challenges and Innovative Solutions for Sustainable Public Health

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Abstract:

Food safety remains one of the most urgent and under-addressed public health issues in Africa. Across the continent, foodborne illnesses are frequent and often deadly, stemming from unsafe agricultural practices, poor hygiene during food processing and storage, weak regulatory systems, and limited consumer awareness. Recent incidents such as the poisoning of the President of Madagascar, his spouse, and several ministers during a national event, or the tragic deaths of over twenty children in South Africa after consuming snacks contaminated with a potent pesticide underscore the critical need for transformative action. This presentation highlights the major challenges affecting food safety along the entire value chain, from production and transformation to storage, distribution, and consumption. It also proposes a multidimensional and forward-looking approach to improving food safety in Africa. This includes the integration of innovative digital technologies such as the Internet of Things (IoT), Artificial Intelligence (AI), blockchain-based traceability systems, mobile laboratories, portable DNA sequencers, and smart/active packaging as well as the promotion of agroecological and sustainable practices that reduce dependence on synthetic chemicals. Examples include the use of plant- and spice-based biopesticides and microbial agents like *Bacillus thuringiensis*, currently in use in countries such as Benin, Kenya, Senegal, and Cameroon. Additionally, the presentation emphasizes the need to strengthen institutional and regulatory frameworks through improved training for food quality control officers, regional harmonization of food laws, and the establishment of robust foodborne disease surveillance systems. The role of education and public awareness is also underlined, particularly among consumers and informal food sector actors who are most at risk yet often least informed about food safety hazards. In conclusion, the presentation reinforces the idea that food safety is not just a personal health issue, it is a shared responsibility that requires the commitment of all stakeholders, from policymakers and producers to scientists and consumers. Ensuring access to safe, nutritious, and uncontaminated food is essential for protecting public health, achieving sustainable development goals, and building resilient food systems across Africa.

Keywords: Food safety, innovation, public health, agroecology, foodborne diseases