



**Addressing food safety challenges in the African
informal sector through innovative strategies & use
cases**

Blog: Transforming Food Safety in Africa

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Transforming Food Safety in Africa: Innovation, Knowledge, and Collaboration for a Safer Future

In Africa, food safety goes far beyond hygiene—it is a matter of survival, livelihoods, and the long-term well-being of communities. Millions are daily exposed to foodborne illnesses caused by harmful microbes, pesticide residues, and food adulterants. According to the World Health Organisation, foodborne hazards are responsible for an estimated 137,000 deaths and 91 million acute illnesses annually across the continent, with children under five being the most vulnerable (WHO, 2015). The economic toll is equally staggering: the World Bank estimates that food safety-related challenges cost low- and middle-income countries, particularly in Sub-Saharan Africa and Southeast Asia, around \$110 billion each year in lost productivity and healthcare expenses (World Bank, 2018).

A study across seven African countries revealed alarmingly high contamination rates from major pathogens in both raw and ready-to-eat foods. For instance, *E. coli* was found in approximately 37.6% of raw foods and 31.6% of ready-to-eat foods, while *Salmonella* was detected in 19.9% and 21.7%, respectively (Paudyal N et al., 2017). Beyond microbial threats, mycotoxins, which are naturally occurring toxins produced by certain fungi, pose a severe and often overlooked food safety risk. Both biological pathogens and mycotoxins can cause serious health effects, ranging from acute symptoms like diarrhoea and vomiting to chronic conditions such as stunted growth, immune suppression, kidney failure, and even cancer. In another comprehensive study across 18 districts in Tanzania, aflatoxins (a particularly dangerous type of mycotoxin) were detected in 92–100% of groundnut samples and 10–80% of maize samples collected from smallholder farmers, with levels reaching as high as 162.4 µg/kg—far exceeding internationally accepted safety limits (Boni et al., 2021). Similarly, a multi-country assessment in Burkina Faso, Ethiopia, Mali, and Sudan found that 33% of sorghum samples contained at least one mycotoxin, with aflatoxins present in 13% (Ssepunya et al., 2018).

These hazards are particularly acute in Africa's informal food sector, where regulatory oversight, food safety infrastructure, and traceability mechanisms are limited or non-existent. As a result, the burden of foodborne disease and contamination falls disproportionately on informal markets, which, despite the risks, remain the primary source of food for most of the population. Addressing this challenge requires a coordinated, multi-sectoral approach that brings together governments, researchers, private sector actors, and communities to strengthen food safety systems from farm to fork.

Food Safety for Africa Project & Knowledge Platform

Enter the [Food Safety for Africa \(FS4Africa\)](#) project, a game-changing EU-funded consortium dedicated to tackling these multifaceted challenges. The project aims to address food safety challenges in Africa, focusing on weak channels for value chain organisation, traceability, and authentication of safe food. It addresses mycotoxin contamination, pesticide residues, microbial contamination, and food adulteration in various crops and products. The primary objective is to improve African food safety systems, especially in the informal sector, through local market transformation, enhancing food security and regional trade while minimising negative impacts on the environment, biodiversity, health, and society. The project utilises expertise, skills, and networks from partners based in Africa, Europe and North America to implement strategies that uplift the informal sector using digital tools and interdisciplinary approaches. By ensuring sustainability, the FS4Africa initiative aims to meet present needs without compromising future generations' ability to meet their own needs.

At the heart of FS4Africa lies the [Food Safety for Africa Knowledge Platform](#)—a dynamic, AI-enabled space that brings together knowledge, solutions, news, and events related to food safety across the continent. The platform is designed to serve as a central hub of curated, reliable, and context-specific information focused on improving food safety across Africa, with a strong emphasis on the informal sector. Launched in Beta on World Food Safety Day on June 7, 2024, the platform has already started bridging the gap between global knowledge and local application. With the full version set to launch on World Food Safety Day 2025, this platform is poised to become a critical resource for professionals and institutions alike.

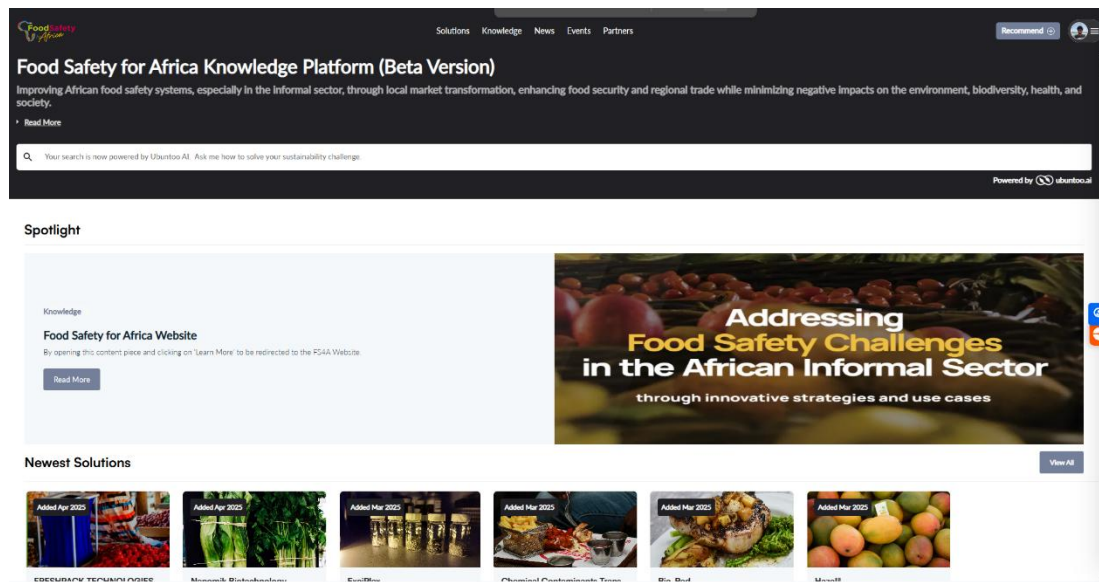


Figure 1 The Food Safety 4 Africa Knowledge Platform

What Type of Knowledge Powers the Platform?

The most vital pillar at the core of the FS4Africa Knowledge Platform is Knowledge itself. Addition of knowledge onto the platform is done with the help of a two-pronged approach: Open-Access, Published & Scientific Knowledge and Practical Grey Knowledge.

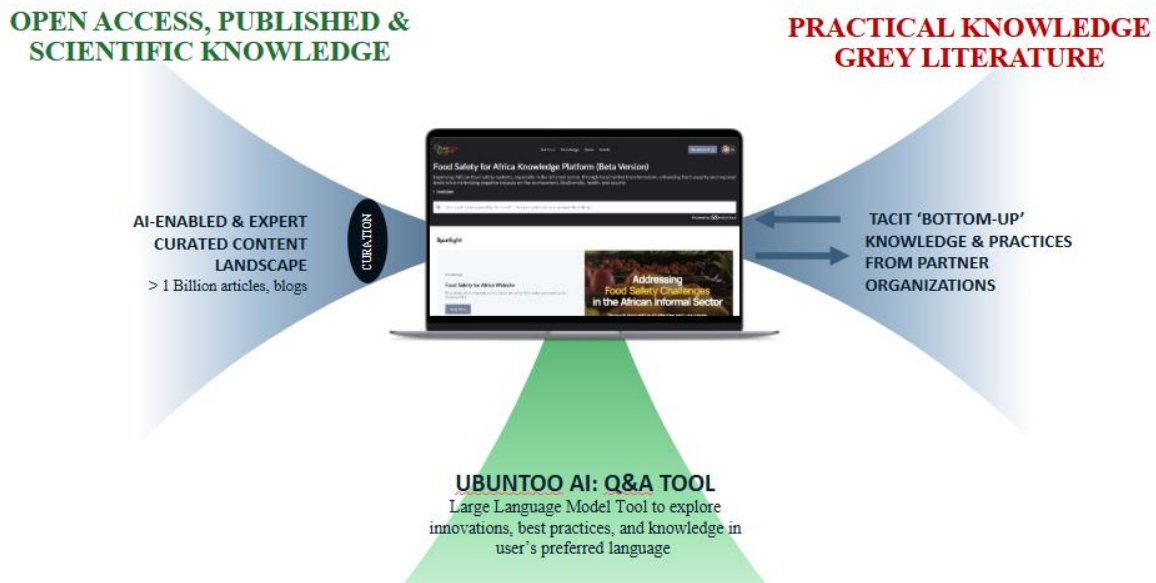


Figure 2 Two-pronged approach to adding knowledge to the platform

On one side of the two-pronged approach, open-access published knowledge is added onto the platform by an expert team of curators from partner organisations within the project consortium. The curators bring in diverse expertise across scientific disciplines such as social sciences, economics, life sciences, business, and environmental studies. These partners include organisations like the International Institute of Tropical Agriculture, Wageningen University & Research, the University of Pretoria, Egerton University, Food Systems Transformation Solutions, Reframe Food, the Council for Scientific & Industrial Research in Ghana, and the Innovation Technology Cluster.

Research Analysts from Ubuntu also use AI tools to gather, organise and add African food safety-related information from scanning over 1 billion articles and blogs, collected from sources like CGSpace, Microsoft Academic, PubMed, CrossRef, and the Media, etc. Some of the common open-access knowledge added to the platform includes scientific papers, government policy documents, how-to guides, best practice reports, and industry whitepapers—each selected to inform and inspire food safety efforts on the continent. As of May 2025, 80% of the knowledge on the platform comes from academic sources.

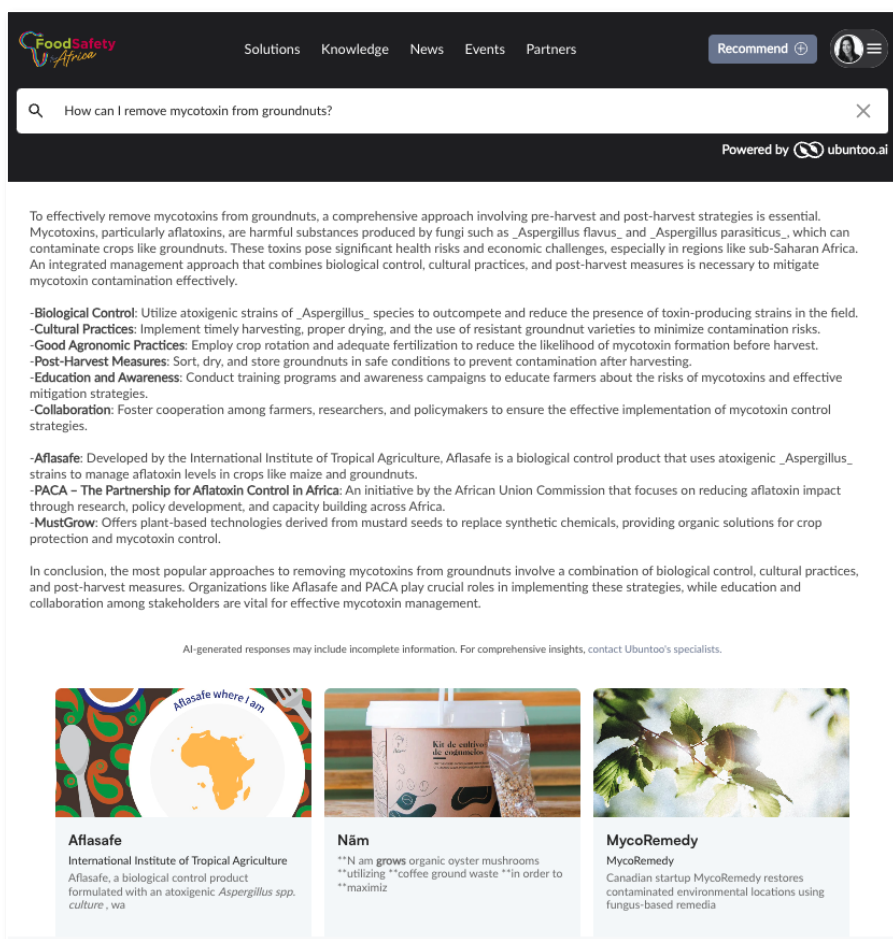
On the other side of the two-pronged, practical & ground-level tacit knowledge is added through information shared by expert members within the consortium. Such practical knowledge is also added to the platform with a growing number of interviews and video presentations shared by professionals working at different stages of the food safety value chain. The interviewees range from researchers and farmers to regulators and industry leaders in the African Food Safety Space. Their perspectives, when added to the platform, provide a rare window into real-world challenges, lived experiences, and emerging solutions within diverse African contexts. This tacit knowledge is typically not documented or published elsewhere, making it a unique and exclusive asset to the platform.

This two-pronged approach has also allowed for identifying countries and regions leading in best food safety practices, recognising key global and regional frameworks and authorities, mapping out focus areas and top contributors to food safety knowledge, unearthing grey literature & informal knowledge typically absent from formal sources. Overall, this benefits the platform members, as highlighting such practices and frameworks showcases replicable models for others to learn from and adapt to strengthen their food safety efforts within the continent. Along with this, the platform is also supported with a large language Q&A tool called Ubuntu AI, as shown at the bottom of figure 2.

Ubuntu AI (Harnessing Collective Intelligence for Food Safety in Africa)

Ubuntu AI turns the FS4Africa knowledge platform from a static database into an interactive learning assistant. With this Q&A tool, the platform members can ask any questions related to Food Safety in Africa. Based on the question received, the tool then scans the curated database to provide:

- Instant, contextual and reliable answers
- Recommended content from the curated Food Safety library
- Reliable insights supported by academic and practical sources
- Answers in multiple languages based on the specified language by the user asking



The screenshot shows the Ubuntu AI interface on the Food Safety for Africa website. At the top, there is a navigation bar with links for Solutions, Knowledge, News, Events, and Partners. A search bar contains the query "How can I remove mycotoxin from groundnuts?". Below the search bar, the AI-generated response is displayed, providing a comprehensive overview of mycotoxin removal strategies, including biological control, cultural practices, and post-harvest measures. The response is supported by several key initiatives: Aflasafe, PACA (The Partnership for Aflatoxin Control in Africa), and MustGrow. At the bottom of the response, three recommended resources are highlighted: Aflasafe (International Institute of Tropical Agriculture), Nãm (a startup growing organic oyster mushrooms), and MycoRemedy (a Canadian startup using fungus-based remediation).

Figure 3 Ubuntu AI in action!

There is more to the platform than just knowledge:

While knowledge is the cornerstone, the platform is also home to three additional categories of content:

- **Solutions:** From tech-based innovations, start-ups, academic pilot projects, toolkits, actionable best practices to Food Safety NGO's & organisations, the platform highlights scalable models and technologies that enhance food safety.
- **News:** Weekly updated feed of media articles and updates related to food safety developments in Africa.
- **Events:** Listings of relevant conferences, webinars, symposiums, and workshops to keep members connected to the evolving food safety landscape.

Each of these contents is also supported & recommended by curators of the platform. Each content piece, whether it is a solution, news, knowledge or event, is presented through a dedicated profile on the platform. These profiles provide a brief description of the content, making it easy for the platform members to understand its context and value. Importantly, each profile also includes a redirect link to the source or external webpage, ensuring that users can access the full depth of information directly from the original provider. Each content profile is drafted by the Ubuntu content development team, before being reviewed & activated with the help of the consortium members. Once activated, they can be viewed by all the platform members.

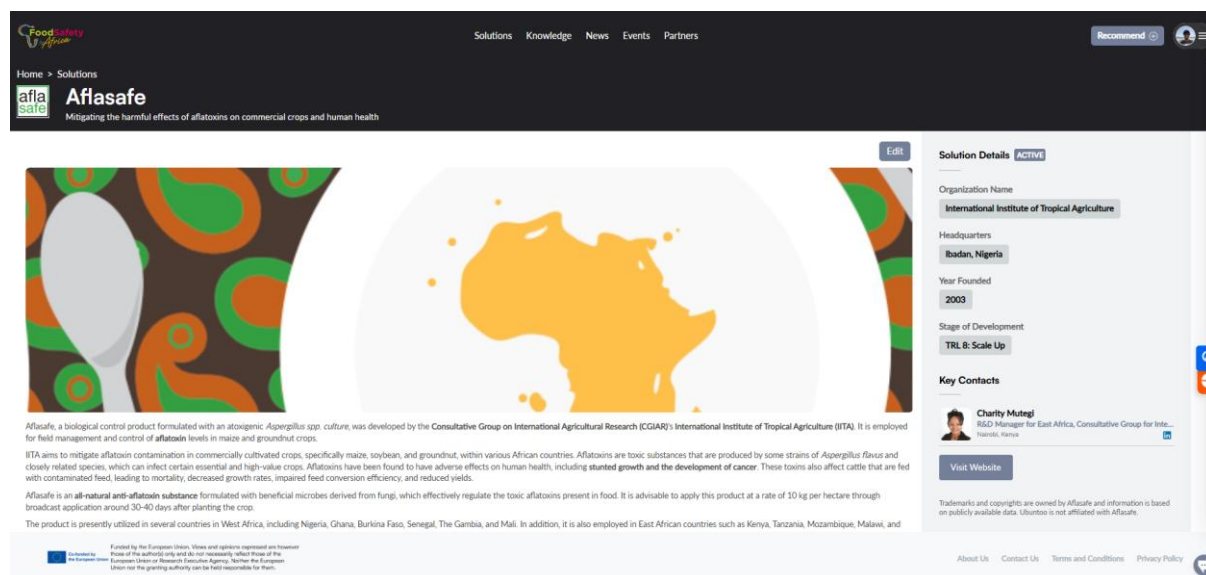


Figure 4 A profile of a solution, 'Aflasafe' on the platform

Who is the platform for?

The FS4Africa Knowledge Platform is designed for a diverse ecosystem of food safety stakeholders. Whether you're a policymaker or a food-safety practitioner, there's a place for you. Here's are some of the types of members that are commonly found in the platform: Food Safety Professionals, Field Practitioners, Food Safety Researchers & Scientists, Food Safety Managers & Consultants, Government Officials & Regulatory Officers, Industry Professionals and Food Manufacturers, Consumer Health Experts, Students & Scholars and Farmers & Agro Processors. This rich mix creates a vibrant community of practice where science, policy, knowledge sharing and grassroots experience come together. As of April 2025, there are 285 members on the platform, indicating high relevance and growing demand for accessible, reliable food safety knowledge in Africa.

How consistent is the growth of content on the platform?

Since its inception, the FS4Africa Knowledge Platform has shown **steady and consistent growth of content**. Its content is updated every week and is tracked monthly. This growth is not just in numbers but in impact. As more professionals discover the platform, the diversity and depth of content continue to expand, turning it into an evolving library and learning hub for Food Safety in Africa.

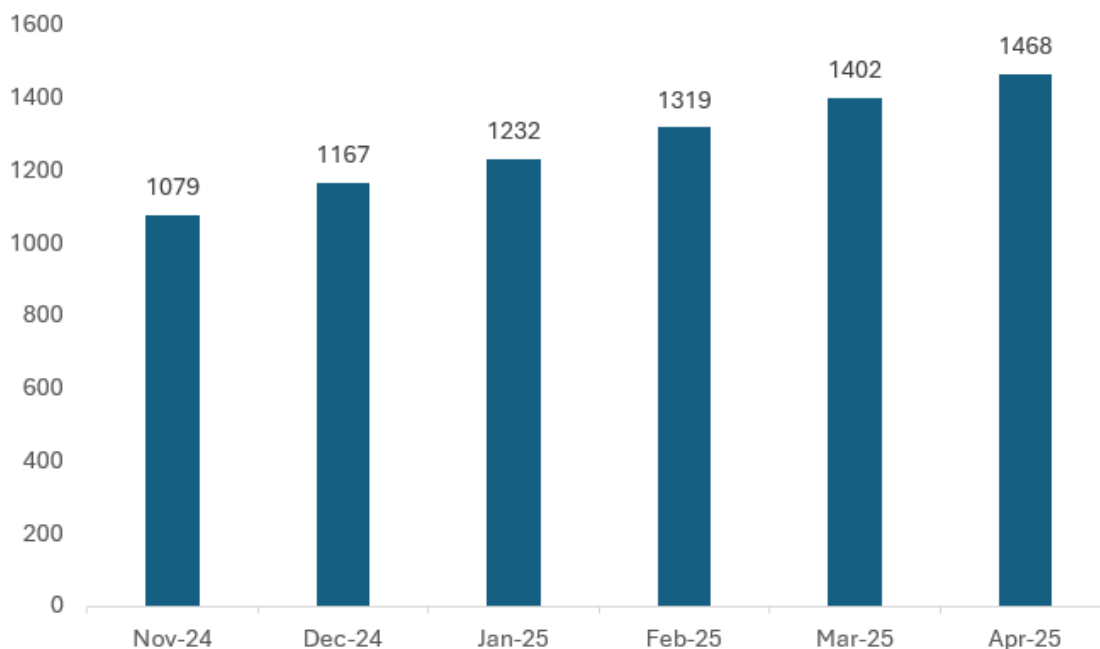


Figure 5 Growth of content in the platform in the past 6 months.

What are some of the other unique features in the platform?

- **Knowledge Categorisation (Making Information Easy to Find and Use):** To ensure users can easily navigate and make sense of the vast library of content, the FS4Africa Knowledge Platform uses a structured categorization system. This system organizes every piece of content into clearly defined themes and filters, enhancing both discoverability and user experience. Content is tagged based on multiple criteria, including:
 - Type of Crop (e.g., tomatoes, groundnuts, maize)
 - Region of Focus (specific countries or African regions)
 - Knowledge Source (academic, government, industry, media, etc.)
 - Knowledge Type (research, best practices, guides, policy documents)
 - Type of Contaminant (bacterial, microbial, chemical, etc.)
 - Technology Category (digital tools, machinery, biotech solutions, etc.)
 - Value Chain Segment (production, processing, packaging, distribution, retail, consumption)

By categorising knowledge across these dimensions, the platform enables targeted searches, easier comparisons, and practical learning.

- **Newsletters (Sharing Insights, Progress, and Solutions):** The platform regularly delivers insightful newsletters to its members, offering a curated digest of the most relevant food safety updates from across Africa. These newsletters are often signed & reviewed by Food Safety Experts within the consortium before they are shared with its members. These newsletters serve multiple purposes: they highlight key challenges in the informal sector, share practical solutions and best practices, and feature new content added to the platform, including interviews, research findings, and event highlights. More importantly, the newsletters act as a communication bridge between the platform and its member community.

YOUR DIGEST
Food Safety for Africa Knowledge Platform (Beta Version)

Dear Anna,

Ensuring **food safety for tomatoes** is critical for Africa, as it significantly influences food security, economic stability, and public health. **Tomatoes are a staple in many African diets and are often consumed raw, which increases the risk of food-borne diseases if they are contaminated.** The predominantly informal structure of tomato value chains in regions such as Eastern Ethiopia increases these risks due to practices including the use of contaminated irrigation water and inadequate hygiene during handling. The safety of tomatoes plays a vital role in **mitigating health risks, enhancing nutritional outcomes, and fostering economic growth.** This, in turn, increases consumer confidence and supports economic growth which expands access to premium market segments.

Improving tomato food safety in Africa involves a **multifaceted approach** that includes infrastructure development, regulatory enhancements, education, and technological innovation. **Collaborative efforts** among stakeholders are essential to effectively address the challenges and ensure the safety and quality of tomatoes, thereby supporting public health and economic development in the region. Key technologies that can contribute towards tomato-based food safety include:

- Implement **sensor-based sorting systems** to detect and remove contaminants and defects in tomatoes.
- Use **biological sanitizers** to reduce microbial contamination without relying on chemical preservatives.
- Implement **protective coatings** to mitigate spoilage rates and inhibit dehydration, oxidation, and microbial proliferation.
- Optimize **irrigation water quality** and implement sanitization protocols for facilities to ensure compliance with established safety standards.
- Integrate **advanced packaging technologies** to maintain tomato freshness during transportation and storage.

In this newsletter, we provide you with more insights on the recent trends in enhancing Food Safety of Tomatoes in Africa!

Tomato Handling | Restaurant Food Safety
EUK - 2024-09-11

What Not To Plant With Tomatoes: 9 Companions To Avoid
Soulless Living - 2024-09-04

(Malawi Africa) Chinese Tomato Grafting Technology Broadening Revenue Streams for Kenyan Farmers-Xinhua
English News CN - 2024-09-27

Knowledge Posts

Knowledge, Attitude and Practice of Tomato Retailers Towards Hygiene and Food Safety in Harar and Dibe Dawa, Ethiopia
The study highlights the importance of basic infrastructure, such as access to clean water and sanitation facilities, which are essential for maintaining food safety standards during handling and retailing of tomatoes.

Isolation and Characterization of Ralstonia Solanacearum Causing Wilt Disease in Tomato
The study confirms Ralstonia solanacearum causes tomato bacterial wilt in Ethiopia, suggesting management strategies.

News Highlights

New Disease Resistant and Market-Preferred Tomato Varieties Developed in Switz
Daily Trust - 2024-07-16

How to Store Tomatoes So They Stay Fresh and Flavorful
Bette Homan & Gardens - 2024-09-26

Latest Solutions

ColdHub
Solar-powered cold storage to reduce food spoilage

ThruTech
Delivery systems using essential oils to reduce food decay

Use of Sulfur Dioxide to Reduce Postharvest Decay and Preserve the Quality of Fresh Tomatoes
Ferdinag support 300 generating clients for commercial use on special tomato varieties to reduce decay and shrinkage, with an average impact on farmers.

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Tomato Handling | Restaurant Food Safety

Knowledge Posts

Knowledge, Attitude and Practice of Tomato Retailers Towards Hygiene and

Figure 6 A newsletter on the microbial quality of tomatoes that was shared in November 2024

Conclusion: Building a Safer Food Future for Africa

The FS4Africa Knowledge Platform plays a critical role in advancing food safety by providing access to a wealth of knowledge, solutions, and best practices. By supporting informed decision-making, the platform helps improve food safety systems, particularly in Africa's informal sector. It bridges the gap between science, policy, and practice, connecting professionals across the value chain to foster knowledge exchange and drive meaningful progress. The platform not only generates valuable insights into food safety but also provides a collaborative space for experts, practitioners, and policymakers to engage and learn from each other. Whether you're looking to stay updated on the latest research, find solutions for local challenges, or connect with like-minded professionals, the FS4Africa Knowledge Platform offers something for everyone. What's more, the platform is free and open to all. Anyone with an interest in food safety, whether you're a researcher, policymaker, farmer, or consumer health professional, can [request to join](#) and be part of this growing community. Together, we can work towards a safer and more sustainable food future for Africa.

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