

# Poison on plates?

## **Chemicals.** **Unsafe.**

Some chemicals used in farming are unsafe, particularly when poorly stored.



**GMO**

## **GMOs.** **Not allowed.**

Government clarifies that Uganda has no reported cases of growing GMO crops. The country does not have a law permitting the importation of GMO seeds.

# 42

## **Sampling.**

Using the stratified random method, qualitative data were collected from 42 restaurants.



## **Water bodies.** **Toxins.**

"...rainwater washes pesticides and fertilisers from farms into streams and rivers. These contaminants eventually make their way into major water bodies, affecting fish stocks, irrigation water and drinking supplies."

## **Chicken.** **Dangerous.**

"These days, within three weeks you have a chicken weighing 12 kilogrammes. Can you reflect on this—and yet we are enjoying it."



There is growing concern that toxic substances are steadily embedding themselves into the country's food chain.

BY YAHUDU KITUNZI

Every day, millions of Ugandans sit down to meals prepared from food bought in open markets, roadside stalls, supermarkets and village trading centres. Matooke, posho, beans, vegetables, fish and fruits form the backbone of daily diets. They look fresh. They taste normal.

But increasingly, food safety experts warn that what we are eating may be laced with invisible poisons—chemicals that enter the food system long before meals reach the table.

There is growing concern that toxic substances are steadily embedding themselves into the country's food chain. Pesticide residues on vegetables, fears of unregulated genetically modified organisms (GMOs), and contamination of natural water bodies by industrial and human activity are raising alarm about the long-term health of the population.

From farm production and cross-border trade to water sources used for irrigation and food processing, toxic substances are quietly infiltrating Uganda's food system.

Vegetables, long promoted as essential for good health, are paradoxically among the most chemically contaminated foods on the market. Sukuma wiki, tomatoes, cabbages, onions and eggplants dominate urban and rural markets, yet they are also the crops most heavily sprayed with pesticides.

Farmers, under pressure to maximise yields and minimise losses from pests and diseases, increasingly rely on chemical pesticides. However, many apply them without adequate training, protective equipment, or adherence to recommended withdrawal periods—the time required between spraying and harvesting.

### Food safety challenges

Mr Jimmy Moses Tindamanyire, a senior lecturer in the Faculty of Science, Department of Biological Sciences at Kabale University, explains that food safety challenges arise from different sources of food poisoning. "These can occur right from the garden if farmers use chemicals, or during post-harvest handling. For example, vegetables may be contaminated not only by agrochemicals but also by microorganisms."

Farmers often use chemicals such as macozede to kill insects. A common example is when tomatoes are sold with a visible white residue—this indicates chemicals applied to protect them from infections. However, these poisonous chemicals remain on the vegetables for long periods and can penetrate into the food itself.

Mr Tindamanyire highlights that Ugandan vegetables have been rejected in European markets due to contamination with certain agrochemicals. He emphasised that while some forms of poisoning are natural, others are artificial, and both can be harmful to humans, sometimes even causing cancer.

### GMO question

On the subject of genetically modified organisms (GMOs), he clarifies that Uganda has no reported cases of growing GMO crops. The country does not have a law permitting the importation of GMO

# How poison ends up on the plates of Ugandans



Food safety experts warn that what we are eating may be laced with invisible poisons—chemicals that enter the food system long before meals reach the table. PHOTO/FILE

seeds. However, processed foods in supermarkets may contain ingredients derived from GMO products. He cautions against the misconception that poor taste in food automatically means it is GMO. For instance, matooke from Buganda tastes different from matooke grown in Bugisu, but this difference is due to regional variation, not genetic modification.

A change in taste does not qualify a crop as GMO. He adds that many Ugandans mistakenly equate GMOs with hybrids, yet GMO cultivation in Uganda is highly regulated.

Mr Michael Hilary Otim, a senior research officer at the National Agricultural Research Organisation (NARO), however, says GMO products are already with us. He cites one of the spices used to enhance the flavour of eggs, vegetables, meat, soups, and pasta in many Ugandan kitchens, domestic and commercial.

### Food safety management

Mr Job Mukisa, an agro-chemical expert, explains that food-borne disease outbreaks often result from the consumption of contaminated foods, which may be linked to improper handling practices at food-serving establishments. He notes that in Uganda, the major factors contributing to food-borne illnesses include: low levels of awareness and poor practices in food handling during production, processing, storage, transportation, and retailing.

### WATER SOURCES

Elsewhere, Mr Chris Mafabi, an environmentalist, said factories located near water sources often release untreated or partially treated effluent containing heavy metals, oils and chemical by-products.

"In agricultural areas, rainwater washes pesticides and fertilisers from farms into streams and rivers. These contaminants eventually make their way into major water bodies such as Lake Victoria, affecting fish stocks, irrigation water and drinking

Mr Mukisa stresses the importance of strengthening food safety systems to protect both local communities and international markets. He further points out that many small-scale food vendors lack access to training and resources on proper hygiene standards. This gap, he says, increases the risk of contamination and makes it difficult to enforce consistent practices across the food supply chain.

To address these challenges, Mr Mukisa calls for collaboration between government agencies, private sector players, and civil society organisations to raise awareness and implement stricter monitoring mechanisms.

"Food safety is everyone's responsibility. From the farmer to the consumer, each step matters in ensuring what ends up on our plates is safe and healthy," he says.

A recent study that assessed the performance of food safety management systems (FSMS) of restaurants within Kampala had some startling findings. The study evaluated the context riskiness, core control, and assurance activities of an implemented FSMS in the Ugandan capital. It also evaluated the microbial load of food sold in the restaurants in Kawempe and Kampala Central Divisions of Kampala.

Additionally, the 2023 study by Lillian Nabaggala, a Makerere University researcher, identified the challenges food service establishments in Kampala face in implementing FSMS.

"Using the stratified random meth-

od, qualitative data were collected from 42 restaurants using a semi-structured questionnaire and an observation checklist. Food samples [totalling 126] were analysed for Total Plate Counts, Salmonella Spp., Staphylococcus Aureus, total coliforms, and Escherichia coli following standard methods," the researcher revealed.

"Further analysis of data was carried out using analysis of variance and post hoc Scheffe tests to analyse the level of contamination according to the type of food. Results showed that the context riskiness, core control and assurance activities of implemented FSMS in Kampala ranged from moderate to high-risk performance," the researcher added.

### Govt responds

Maj Gen David Kasura Kyomukama, the Permanent Secretary (PS) in the Ministry of Agriculture, Animal Industry and Fisheries (Maaif), said food in Uganda is safe. "We test our food regularly, and it is very safe," he told *Sunday Monitor*.

He revealed that the government is establishing a new Food and Agricultural Chemical Authority, which will be operational soon. In addition, infrastructure is being developed to strengthen laboratory capacity across the country.

"The agricultural market is a recurring issue, but Uganda's economy is booming. Inflation is down, the dollar is stable, and food plays a central role in this stability. Uganda not only produces enough food,

and institutions mandated to protect food safety, environmental health and public wellbeing. However, implementation remains inconsistent. "Laboratory testing capacity is limited. Market surveillance is irregular. Border inspections are under-resourced. Coordination between agencies is often weak. This creates an environment where unsafe food production and trade practices carry little risk of punishment, while consumers bear the health consequences."

but also exports significant quantities to neighbouring countries such as Tanzania, Kenya, Rwanda, and South Sudan," PS Kasura noted.

Highlighting Uganda's regional trade, he added that last Christmas, Ugandans exported 27,000 cows to the Democratic Republic of the Congo (DRC). Maaif's top accounting officer warned that spreading misinformation about chemicals in food harms local farmers and threatens the agricultural sector.

PS Kasura also assured the public that GMOs do not enter the country, reiterating that Uganda is in competition with other nations and must protect its agricultural industry.

Ms Angella Auma, an agricultural expert, said there is a lot of work to be done, pointing to pesticide residues that eventually reach consumers.

"Washing reduces but does not eliminate many of these chemicals. Some pesticides commonly used in Uganda are either restricted or banned in other countries due to their association with cancer, endocrine disruption, neurological disorders and reproductive health complications. Yet they remain readily available in agro-input shops, often sold without clear guidance," she said.

### Long-term effects

Ms Auma observed that the problem is compounded by weak enforcement. Regulatory agencies struggle with limited resources to inspect farms, monitor markets or routinely test food samples.

As a result, unsafe practices continue largely unchecked. While every actor in the food system plays a role—from farmers and traders to industries and consumers—responsibility must be proportionate to power and capacity.

Stronger regulation, better enforcement, public education and investment in testing infrastructure are urgently needed. Without political will and coordinated action, poison will continue to travel quietly through Uganda's food system.

Health professionals warn that the danger lies not only in acute poisoning, but in long-term exposure to low levels of toxic chemicals. These effects are subtle, cumulative and difficult to trace.

The expert said the repeated consumption of food contaminated with pesticide residues has been linked to headaches, stomach disorders, respiratory problems, hormonal imbalances and weakened immunity. Children, pregnant women and the elderly are particularly vulnerable. "Because symptoms often appear gradually, many cases go undiagnosed or are attributed to other illnesses, masking the true scale of the problem," Ms Auma said.

### Porous borders

Beyond chemical use on farms, another concern sits quietly at Uganda's borders—particularly the long and porous frontier shared with Kenya. Kenya's decision in recent years to give GMOs the green light has heightened anxiety among Ugandan consumers and civil society groups. While Uganda has not fully approved commercial GMO food production, trade realities complicate enforcement.

"Large volumes of food, including maize, grains, processed products and fresh produce, cross the border daily—much of it informally. With limited inspection capacity, fears persist that GMO foods may already be circulating in Ugandan markets without proper labeling, testing or public awareness," Ms Auma said, adding that without strong border controls and regular testing, the food system becomes vulnerable to unregulated entry of products whose long-term impacts remain contested.