

Fighting Mold: Toxic molds are a major problem in Kenya. They even cause cancer. Researchers from the University of Nairobi are searching for solutions in Landau.

By Matthias Rinck

Landau. Everyone knows the problem of mold on bread. It grows quickly and looks unappetizing. But what many people don't know: mold can be highly dangerous. Some species produce toxins that can cause serious illnesses such as cancer. In Kenya, toxic mold is a widespread problem.

Researchers from the University of Nairobi are therefore working together with scientists from the Rhineland-Palatinate Technical University of Kaiserslautern-Landau (RPTU). Since 2018, they have been researching how to combat toxic mold fungi more effectively.

At the heart of the cooperation is the project **SolFood**. It focuses on soil samples from agricultural land. The aim is to understand how toxic molds develop, how their toxins spread, and how these harmful substances can be reduced or prevented.

The project is funded by the German Academic Exchange Service (DAAD) and involves numerous cooperation partners. The exchange is intensive: Kenyan researchers regularly travel to Germany, while German scientists conduct research in Kenya.

Fatuma Fora and Henry Momanyi examine a Kenyan soil sample in the Landau laboratory. They are in Germany for the first time.

Photo: Matthias Rinck

While life in Germany is interesting for them, the focus of Fatuma Fora and Henry Momanyi is clearly on their research. Both scientists work at the RPTU in Landau in Professor Peter Karlovsky's laboratory. They analyze soil samples from Kenya. The background is alarming: in Kenya, toxic molds frequently contaminate maize, the country's main staple food. Aflatoxins are particularly dangerous. They are produced by certain mold species and can cause liver cancer.

In 2004, there was a documented outbreak in Kenya: 125 people died after eating contaminated maize. Many more suffered long-term health consequences. Aflatoxins are considered one of the most dangerous natural toxins in the world.

The problem is worsened by climate conditions. Warmth and humidity promote mold growth. Once maize is contaminated, the toxins cannot be removed by cooking. For many people in Kenya, maize is the main source of nutrition. A varied diet is often not affordable. Children are particularly affected: aflatoxins can stunt growth and weaken the immune system.

Strict limits – but difficult to enforce

While there are strict limits for aflatoxins in Europe, such regulations are hard to enforce in Kenya. Many farmers store maize under poor conditions. Controls are rare, and contaminated grain often ends up on the market.

Mold fungi naturally occur in soil. Some species are harmful, others harmless. The researchers are investigating which fungi dominate Kenyan soils and how farming practices influence this balance.

One promising approach is to promote harmless mold species that suppress toxin-producing fungi. Another key question is how soil microorganisms interact and how this affects toxin formation.

The scientists are also examining whether certain farming methods can reduce the risk of contamination. Crop rotation, soil treatment, and storage conditions all play a role.

Research with direct impact

The project is not just theoretical. The findings are intended to help farmers directly. If simple, affordable measures can reduce toxin contamination, this could significantly improve food safety.

For the Kenyan researchers, the stay in Landau is a valuable experience. They gain access to modern laboratory technology and exchange ideas with international colleagues.

Despite all the scientific progress, one thing is clear: the problem cannot be solved overnight. But every step toward understanding toxic molds brings hope.

As Fatuma Fora puts it: *"If we can help reduce aflatoxins even a little, we can save lives."*