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"Global food security and food safety:
The role of universities"

# MYTOX-SOUTH: An Intercontinental Partnership to Improve Food Security and Food Safety in Developing Countries

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**Abstract**

Mycotoxins are toxic fungal secondary metabolites and can contaminate agricultural commodities during cultivation, harvesting, transport, processing, and storage. Mycotoxins are globally distributed and are observed in a vast range of agriculture commodities and environments. This results in contaminated cereal crops, spices, nuts, fruits not suitable for human consumption, leading to enormous economic losses, worldwide. Mycotoxins are present in a wide range of products, from agricultural crops (rice, wheat, rye, barley, corn, soybeans, sorghum, nuts, spices), cereal-based foods (baking products, pasta, breakfast cereals), beverages (fruits, juices and purees, beer and wine), and animal feed to several animal products (dairy products, meat, eggs). Mycotoxin intake may lead to autoimmune illnesses, metabolic and biochemical deficiencies, allergic manifestations, reduction of reproductive efficiency, and may also lead to teratogenicity, carcinogenicity, mutagenicity, and death.

The co-occurrence of different types of mycotoxins results in serious food safety issues all over the world, with sub-Saharan areas being one of the regions at high risk. Moreover, in Africa and other developing countries, the possibilities for regular mycotoxin analysis are scarce to non-existent: analytical tests are expensive; there is a lack of expertise and training; there is insufficient technical support from companies selling analytical instruments, and focus is mainly put on the aflatoxins, while other mycotoxins are being neglected.

To tackle in an efficient and global way the mycotoxin problem the MYTOX-SOUTH partnership was created. MYTOX-SOUTH (http://mytoxsouth.org) intends to harness the expertise and infrastructure available at Ghent University to strengthen the capacity of the southern partners to tackle the mycotoxin problem and the associated food safety and food security issues at global level. For this reason, the long-term aims for MYTOX-SOUTH are: 1) building human and infrastructural capacity through training of the Southern scientific community, 2) bridging the gap between research and development, and 3) stimulate the scientific environment to create a sustainable network.

**Keywords:** Aflatoxins, capacity building, mycotoxins

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