

Popular scientific project description for project funded by Ekhagastiftelsen

Popular scientific project description is to be submitted within 2 months of project grant.

Application number:	2025-240
Project title:	Agroecological practices for groundnut and small grains aflatoxin mitigation under smallholder farming in Zambia (AGMIS)
Receiver of grant (name, address):	Research Institute of Organic Agriculture FiBL Department for International Cooperation Postfach 219, CH-5070 Frick, Schweiz
Contact / project manager:	Dr. Irene Kadzere
Project start (yyyy-mm-dd): *	2025-10-01
Project end (yyyy-mm-dd): *	2027-10-31
By Ekhagastiftelsen granted sum:	1 085 000 SEK

Project description: (200 - 300 words)

Groundnuts (*Arachis hypogea* L.), sorghum (*Sorghum bicolor*) and pearl millet (*Pennisetum glaucum* L.), are hardy nutritious crops grown for cash and food in Zambia but are susceptible to aflatoxin-producing fungi (*Aspergillus flavus* L.). Aflatoxins are known to pose significant health risks (liver cancer, immunosuppression, child stunting) to humans and animals. They reduce crop/food marketability too. Agroecological practices that improve soil moisture and organic matter have been shown, in Zambia, to lower aflatoxin levels. Yet, the resultant reductions have not yet reached thresholds deemed safe for consumption, highlighting the need for further research on more effective agroecological techniques. To effectively promote agroecological solutions, it is not only important to conduct action research with farmers, but it is also essential to assess their awareness, skills, motivations, and perceptions towards aflatoxin mitigation and combine this with participatory field experimentation. Our AGMIS project aims to contribute to safer, nutritious foods and diets in Zambia through the reduction of aflatoxin in groundnuts and small grains. We will conduct qualitative and quantitative research with smallholder farmers in Chipata and Sesheke/Sioma districts of Zambia to determine their aflatoxin awareness and knowledge levels, extent of knowledge application, economic implications and training needs. Field action research, both on-station and on-farm, will be implemented to evaluate i) the efficacy of selected land preparation practices combined with mulching, and ii) selected organic matter sources and other soil amendments to reduce aflatoxigenic fungi and pre-harvest aflatoxin contamination on the crops. Through the project, we will identify agroecological practices which not only improve soil and environmental health but will also help to provide preventive solutions towards aflatoxin contamination and their negative impacts to humans and animals. We will disseminate our findings widely through workshops, field days, audio-visuals, scientific papers, social media postings, student thesis reports, and other pathways.

* Dates for project start and end should be the dates for which the grant is received (Not dates for total project if longer than period for which grant is received)