

We are currently offering a bachelor's thesis, master's thesis, or research internship

Changes in Antinutritional Compounds During Germination of Different Cowpea (*Vigna unguiculata*) Varieties

Background

Cowpea (*Vigna unguiculata*) is a legume known for its high nutritional value. It contains important nutrients such as proteins, dietary fiber, vitamins, and minerals, which make it a promising plant-based food ingredient. In addition to its nutritional benefits, cowpea is also adaptable to various environmental conditions, making it suitable for cultivation in many regions, including tropical and semi-arid areas. However, despite its potential, cowpea remains underutilized in Europe and has yet to receive as much attention as other legume crops. The Bavarian Research Center for Agriculture (LFL Bayern) has identified cowpea as a "future crop," recognizing its role in promoting agricultural diversity and sustainability. Like many other legumes, cowpea contains antinutritional compounds such as phytic acid, tannins, and trypsin inhibitors. These compounds can interfere with the absorption of nutrients and limit the digestibility of proteins, thus reducing the overall nutritional value of the crop. One effective and natural method for reducing antinutritional compounds is germination, which triggers a series of biochemical reactions in the seed. In addition to being cost-effective, germination is a clean-label and consumer-friendly approach that does not require chemical additives or complex processing steps. In this study, we aim to examine the changes in antinutritional components of cowpea during the germination process. By analyzing several cowpea varieties, we seek to understand how different genotypes respond to germination in terms of reducing compounds such as phytic acid, tannins, and trypsin inhibitors.

Your Task

- You will conduct an independent small-scale research project focused on analyzing the changes in antinutritional compounds during the germination process of various cowpea varieties.
- The project includes both experimental work and literature review to support the interpretation of biochemical changes occurring during germination.

We hope you

- Start Date: As soon as possible (preferably June 2025).
- Field of Study: Food Technology, Nutrition, Biochemistry, or related study.
- Candidates should have completed at least one practical laboratory course.
- Language Requirements: Thesis and presentation slides must be prepared in English; however, the oral defense does not necessarily need to be conducted in English.

We offer

- Publication Opportunity: You may have the chance to become a co-author of future publications, depending on your contributions.
- Facilities: Access to a student office and to laboratory and pilot-scale processing facilities.
- Comprehensive Mentorship: Friendly and detailed guidance will be provided in areas such as experiments, data analysis and presentation, thesis writing, academic reporting, and personalized advice for future research interests.

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