



Open Master Thesis

Development of Diversity Parameters using Photo Analysis in a Novel Biodiversity Monitoring Approach

Project Description:

This master's thesis focuses on a novel approach to biodiversity monitoring by integrating photo analysis and metabarcoding techniques to evaluate insect diversity in agroecosystems. The study aims to enhance our understanding of insect biodiversity in these environments while potentially refining existing monitoring methodologies.

The research will involve capturing insects in various agroecosystems using Malaise traps and sorting them into distinct size categories. High-resolution photographs of the specimens will be taken, followed by automated analysis of size and color parameters. Alongside this, metabarcoding analysis will be conducted on the insect samples to identify species and assess overall diversity.

Combining data from photo analysis and metabarcoding, the study strives to develop a more comprehensive understanding of insect diversity in the targeted environment.

Research Questions:

- Can diversity parameters be developed using photo analysis in combination with metabarcoding techniques?
- How does this novel approach compare to the current state of biodiversity monitoring?
- What is the level of insect biodiversity within free-range chicken enclosures, and how does it compare to other agricultural and semi-natural habitats?

Time Frame:

The master's thesis project will commence with a literature review and the formulation of a robust research methodology. Until December, the student will concentrate on photography and lab work, followed by data analysis, interpretation, and thesis writing until May.

Requirements:

Master's students should have a background in biology, ecology, or a related field. Familiarity with photo analysis techniques and metabarcoding is a plus. Students should be proficient in English.

Interested candidates, please contact:

Philipp Meyer, B.Sc. Dipl.-Ing.: philipp.meyer@boku.ac.at

Harald Meimberg, Univ.Prof. Dipl.- Biol.: meimberg@boku.ac.at

