

Master thesis (m/f/d)

Method development and validation: Tea Bag Index.

The master thesis is based on the Citizen Science project “Expedition Erdreich”, which aims to bring the subject of soil and soil protection more into the focus of society and also to collect scientifically relevant data on soils in Germany. In addition to the simple determination of soil properties using field soil science methods, the so-called **tea bag index method (TBI)** is also used to determine the rate of decomposition of organic matter.

Together with the data collected by citizen science, various scientific studies are carried out to validate the data and further develop the tea bag index method. To determine the TBI, tea bags of a specific brand and a certain composition are used that are not available in Germany. This limits the use of the method severely. As part of the master thesis, it is checked whether other tea bags available in Germany can be used in addition to the standardized tea bags to reliably determine the tea bag index. For this purpose, it is determined experimentally how much the decomposition rates of different tea bags determined by means of TBI differ under the same conditions (location, weather). Is it possible to develop a Tea Bag Index 2.0 in order to make the method available to the broader population in Germany?

Specific Tasks:

- Determination of different soil parameters for different locations (including field and laboratory work)
- Determination of the Tea Bag Index for different locations with different tea bags
- Chemical analysis of the different types of tea
- Comparison and evaluation of the results, suggestions for the further development of the method
- Literature research on the use of the method

Your Profile:

- Environmental sciences, geosciences or geography with a focus on soil science
- Experience with field and laboratory work in soil science is an advantage
- Language: German or English

Our offer:

- Very good supervision during the work
- Networking with other students and researchers who are also working on the Tea Bag Index

Start:

- earliest May 2021

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Further Literature and Links:

www.expedition-erdreich.de; www.teatime4science.org ; Keuskamp et al. 2013: Tea Bag Index: a novel approach to collect uniform decomposition data across ecosystems. <https://doi.org/10.1111/2041-210X.12097>