



Announcement of a Master's thesis on

**Effects of growing plants and N uptake on denitrification and
denitrification product stoichiometry on the field scale**

In the framework of the project

**Denitrification in Agricultural Soils: Integrated control and Modelling at various
scales (DASIM)**

Growing plants control boundary conditions for denitrification by taking up N and water from soil. We aim to investigate how plant N and water uptake control available N and soil moisture, and subsequent N₂O and N₂ fluxes from denitrification.

Two different crop species, winter wheat and sugar beet, will be grown at Reinshof field site. High-resolution gas and soil sampling will start in spring after wheat fertilization/ sowing of sugar beet and will include growing season and post-harvest period. ¹⁵N-labeling with low enrichment will be used to estimate the N budget. To monitor plant N uptake, plants will be harvested and root samples will be taken in regular intervals and analyzed for their N concentration and ¹⁵N labeling. Also, soil samples will be taken and analyzed for soil mineral N and WEOC concentrations. In additional subplots and for selected dates, the novel improved ¹⁵N gas flux method will be employed for situ measurements of soil denitrification and its product stoichiometry.

Your responsibilities:

- Fieldwork including gas, soil, and plant sampling
- Laboratory work including gas, soil, and plant analysis
- Evaluation and interpretation of results
- Writing your master's thesis

Working language is either **German or English**, Start in **early 2021**

If you're interested, please send an email describing your background and your motivation.

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