Pre-crop effects of grain legumes

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Key Facts:

- **Location:** France
- **Pedoclimatic Region**: Oceanic region
- **Legume(s) Studied**: Pea, Faba bean, Lentil
- **Stakeholders:** No

Aim

- Establish the response curve of wheat to nitrogen application depending on whether or not it is preceded by a grain legume crop;
- Analyse components of the pre-crop effect of grain legumes over nitrogen flows (and its variability) in the succession segment.

Description

Experiment with 5*7 modalities with 4 repetitions.

- Year 1: 5 modalities: Wheat, Rapeseed, Pea, Faba bean, Lentil
- Year 2: After each preceding crop: Wheat with 6 doses + Oilseed rape 0N as a control to estimate nitrogen uptake in autumn.

This will be repeated in 2025-2026 campaign.

This type of trial is also repeated in a Mediterranean site with Wheat, Sunflower, Pea, Chickpea, Soya in a French project "Insérez Les").

Work Planned in 2025

- Following-up of plant cycle in Year 1
- Measurements (especially N in the plant-soil compartments)
- Harvest Year 1
- Implementation of following crops of Year 2
- Recruitment of a temporary staff
- Report of the first campaign

Ecosystem Services Indicators

- Plant biomass and nitrogen content
- Yield
- Soil chemical composition
- Soil mineral nitrogen content

(and complementary soil indicators followed by a partner in a French project over this trial)

Data Relevance

Nitrogen Dynamics

Water Quality, Flood and Erosion control

Yield & Productivity

Soil Quality

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