

Federico Ardenti



KEY-WORDS:
 AGRONOMY · COVER CROPS · GHGS

PROFILE

I am a third-year PhD student in Agricultural Science specialized in Agronomy and Field Crops.

AFFILIATION

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LANGUAGES



Mother language



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PROJECT TITLE

Cover crops and Sub-surface Drip Irrigation: conservation practices to reduce N₂O emissions from agricultural soils

Steps of the research

- Cover crops: evaluating the effects of species, richness and community composition (i.e., with or without legumes) on plant-soil interactions and nutrient cycling.
- Sustainable irrigation: comparing high-efficient irrigation schemes (Sub-surface Drip Irrigation – SDI) with conventional systems (i.e. sprinkler irrigation).

Main Results

Legume cover crops enhanced yield potential but increased environmental impact of agriculture. Mixtures of grasses and legumes improved nutrient cycling because of species complementarity.

Sustainable irrigation schemes (SDI) reduced N₂O emissions from soils and increased maize and soybean yield potential.

Research Contribution

Introducing sustainable and efficient agricultural practices (SDI and cover crops) would sustain farm economic viability while reducing environmental impact.

Collaborations

University of Aarhus - 2021
 Dr. Diego Abalos

Why should you care?

Agriculture is one of the largest sources of N₂O emissions, which is 300 times more active as a greenhouse gas than carbon dioxide. High N₂O emission rates are strongly correlated to improper nitrogen fertilizer and manure management.