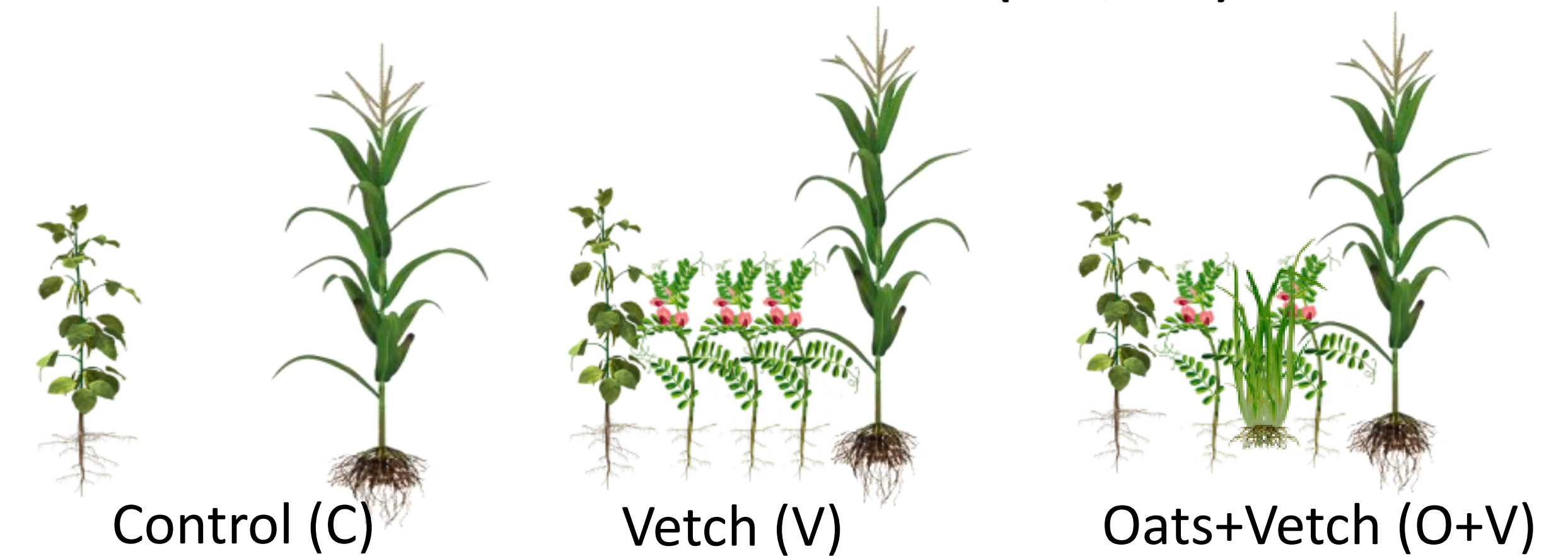


## INTRODUCTION

Cover crops can influence soil organic carbon sequestration and GHG emissions. However, in a context of climate change with a greater risk of extreme events (e.g. prolonged droughts), it is not clear how cover crops could modulate nitrogen and carbon flows.

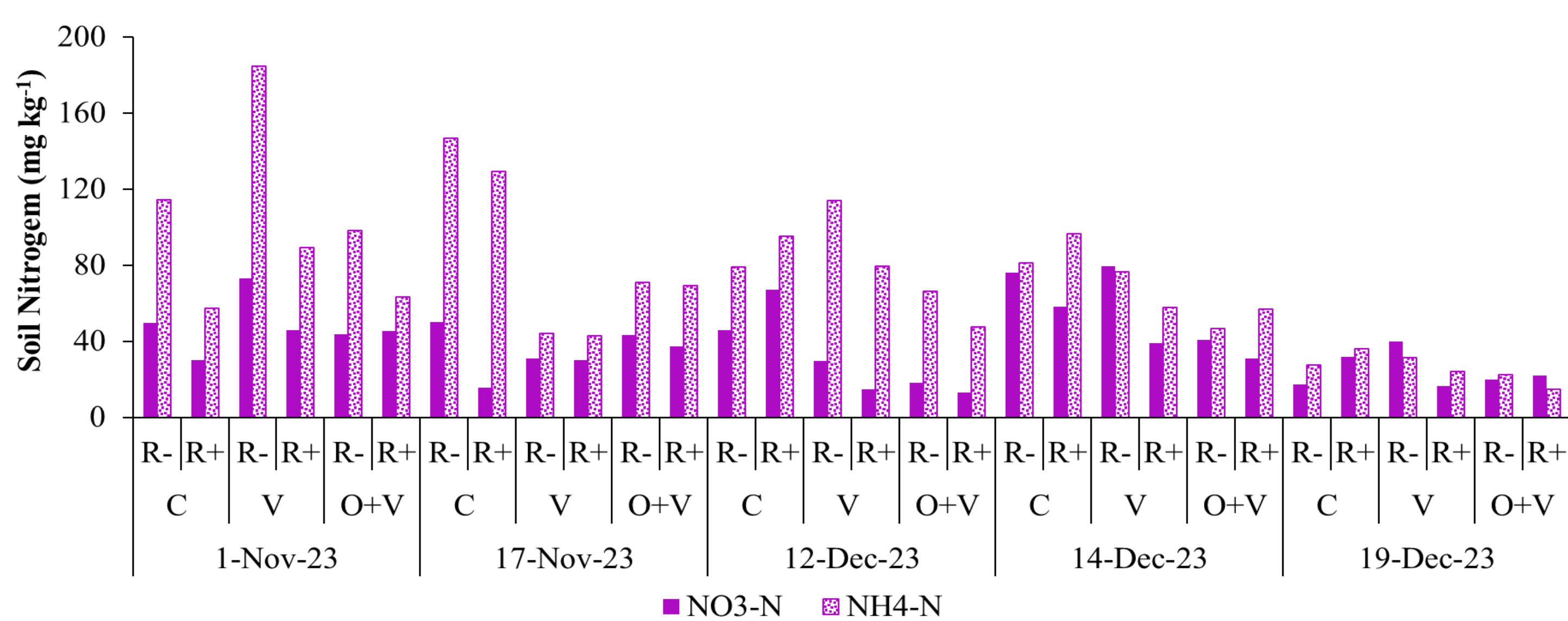
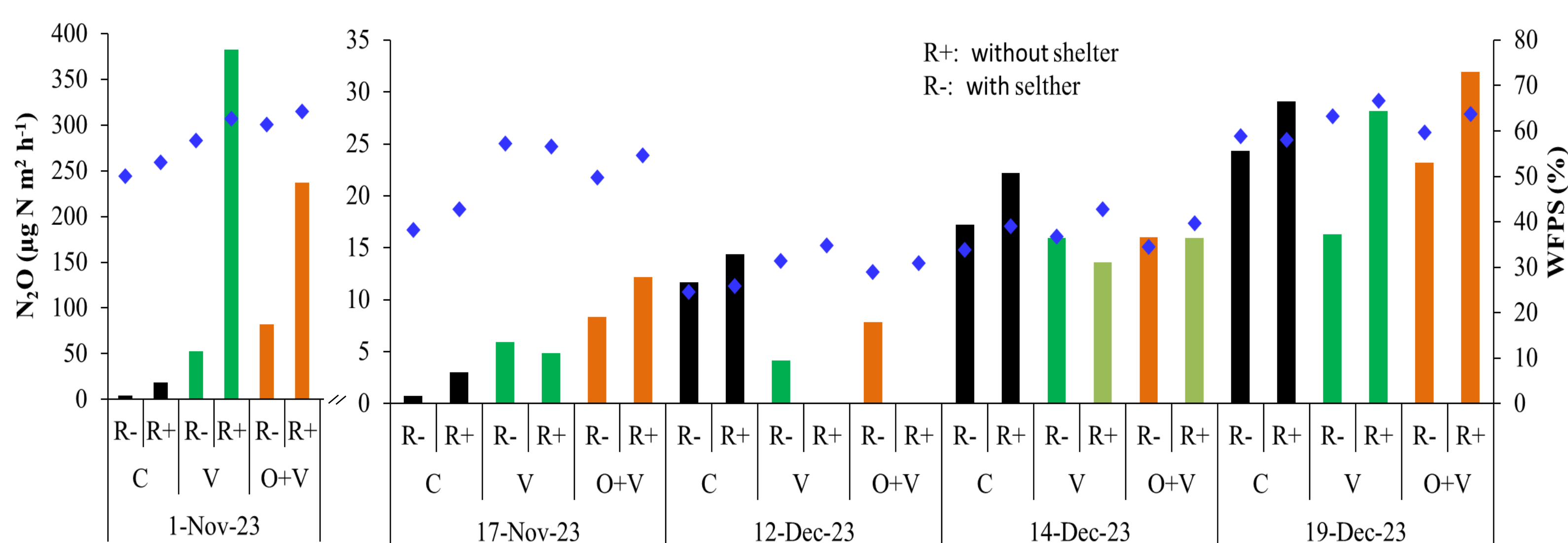
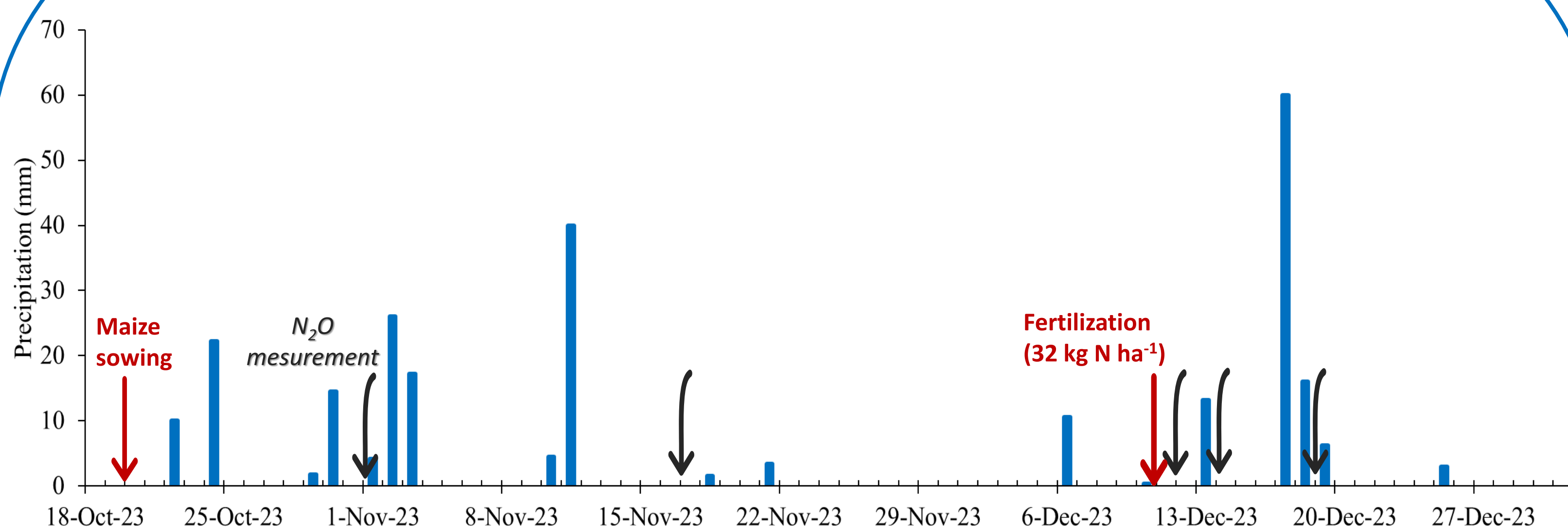
**Objective:** evaluate the effect of reduced rainfall on N<sub>2</sub>O emissions in rotations of the Argentinean Humid Pampas.

We started measuring on maize sown on cover crop residues (vetch and oats+vetch) or on bare soil (control) and installed rain shelters that exclude 50% rainfall (R+, R-).



N<sub>2</sub>O emissions were estimated using vented static chambers

## RESULTS



-Initially, treatments without rain shelters emitted more N<sub>2</sub>O than those with rain shelters, and maize sown on cover crop residues emitted more than maize without cover crops.

-Thereafter, N<sub>2</sub>O emissions were similar between treatments with and without rain shelters and with and without cover crops.



These partial results are framed in the TRUESOIL project of the European Joint Programme (2022-2025) which explores trade-offs between carbon sequestration and GHG emissions, across agroecosystems with different crop rotations, soil types and climates.