

Impact of multi-species mixtures and edaphic context on soil functioning in sown grasslands: a mesocosm experiment

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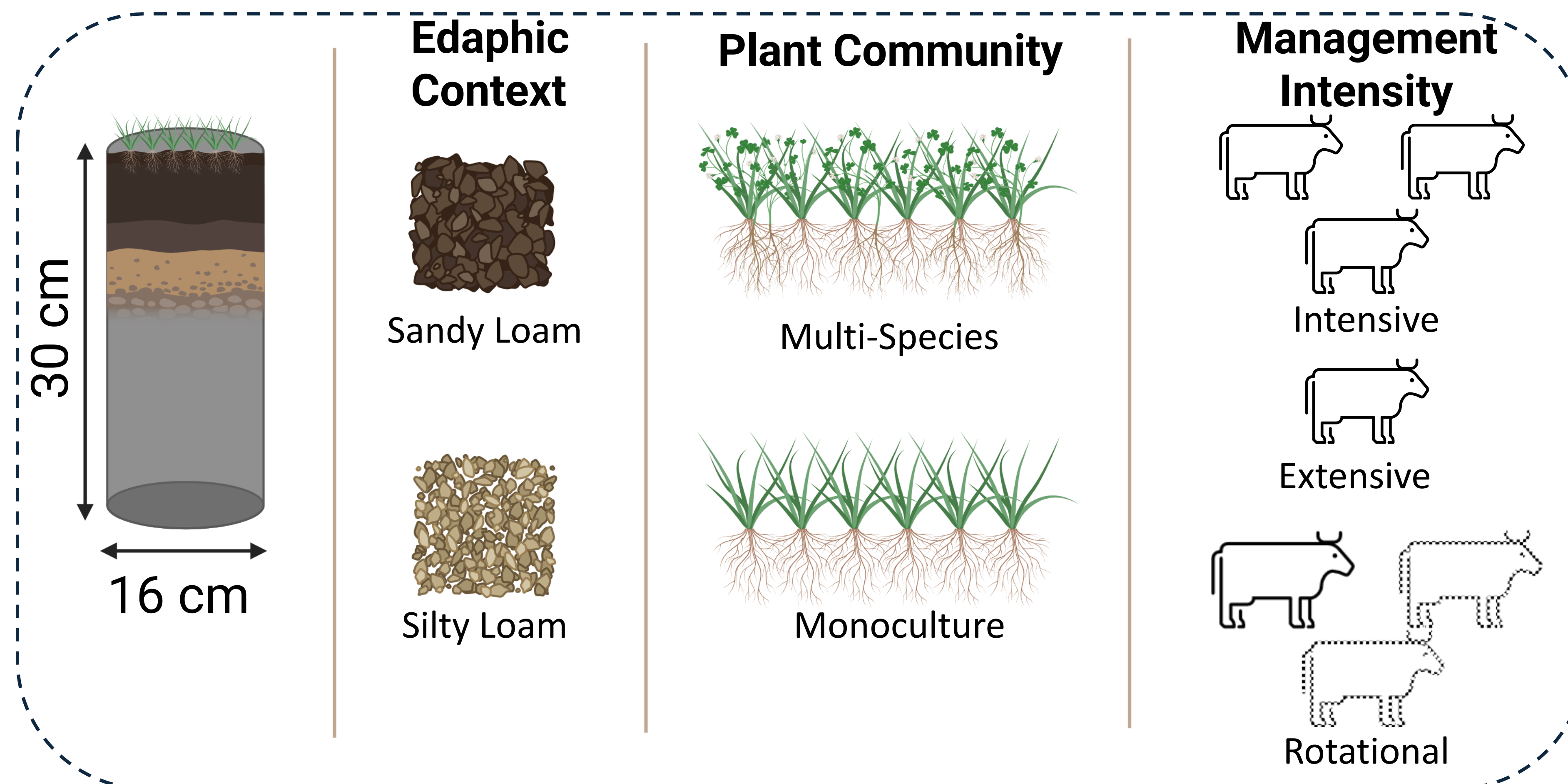
Context

Multi-species grassland mixtures are gaining popularity, yet their effect on **belowground functioning** remains poorly quantified. We conducted a full-factorial mesocosm experiment with 5 replicates.

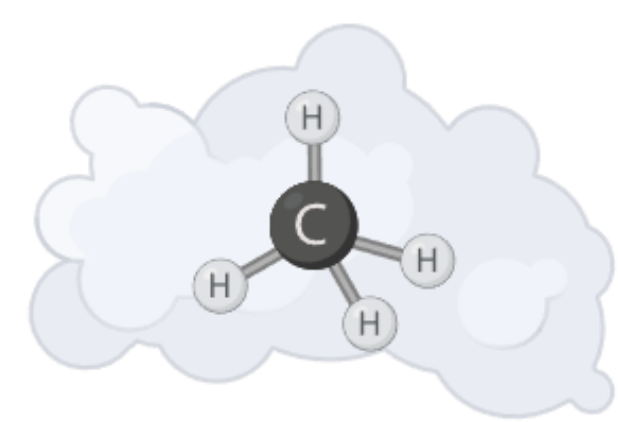
Research Aim

Investigate if **multi-species grassland mixtures** can lead to significant **differences in greenhouse gas fluxes, productivity and functional microbial activity in different contexts**

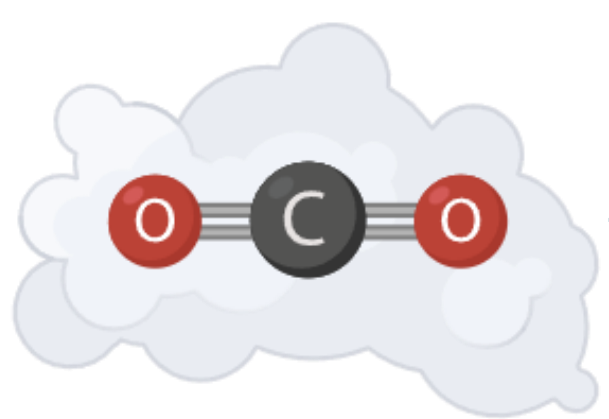
Setup



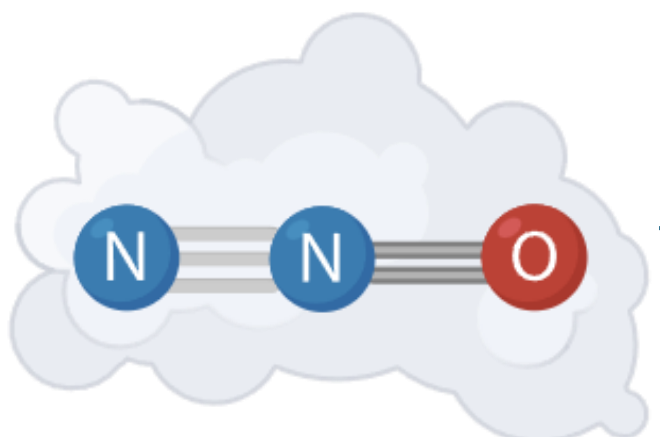
Results



- Plant Community***
- Edaphic Context**
- Soil Moisture*



- Plant Community***
- Edaphic Context*
- Management Intensity***
- Soil Temperature***

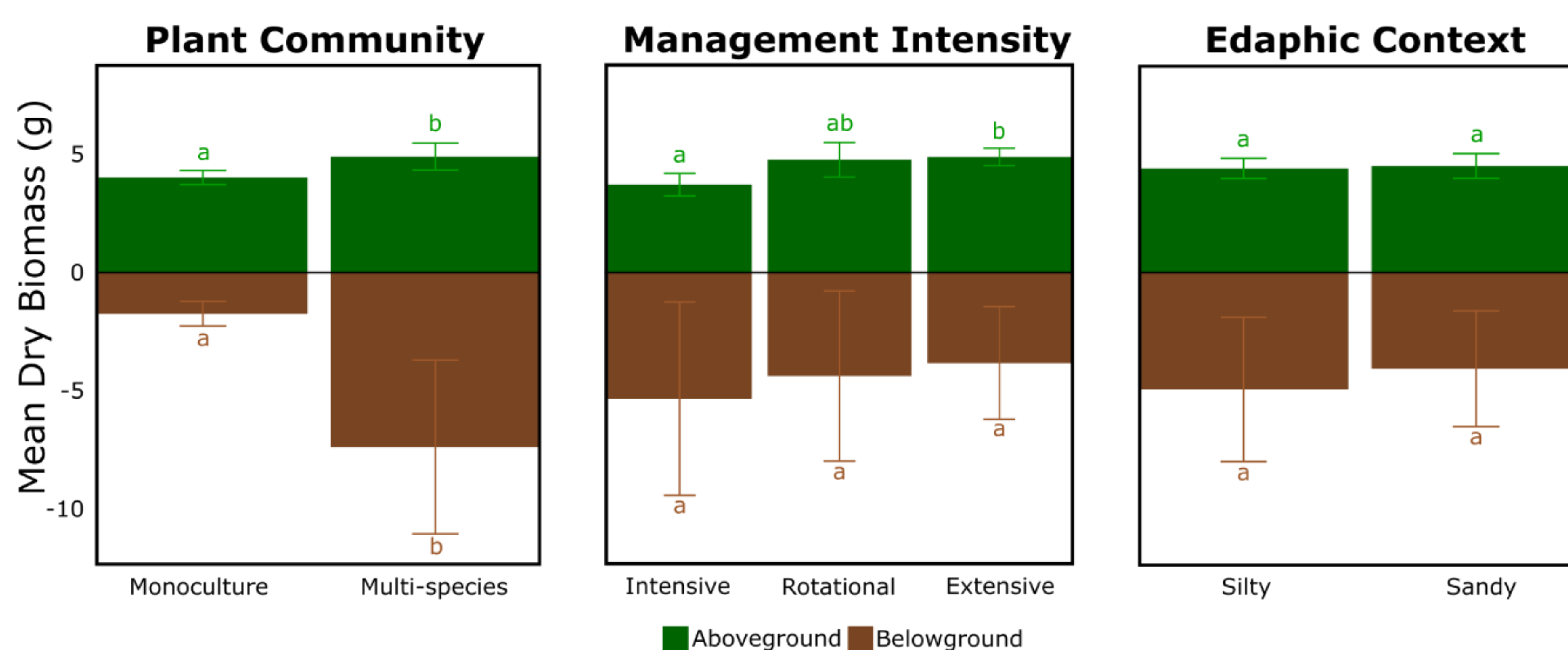


- Plant Community*
- Edaphic Context***

Conclusion

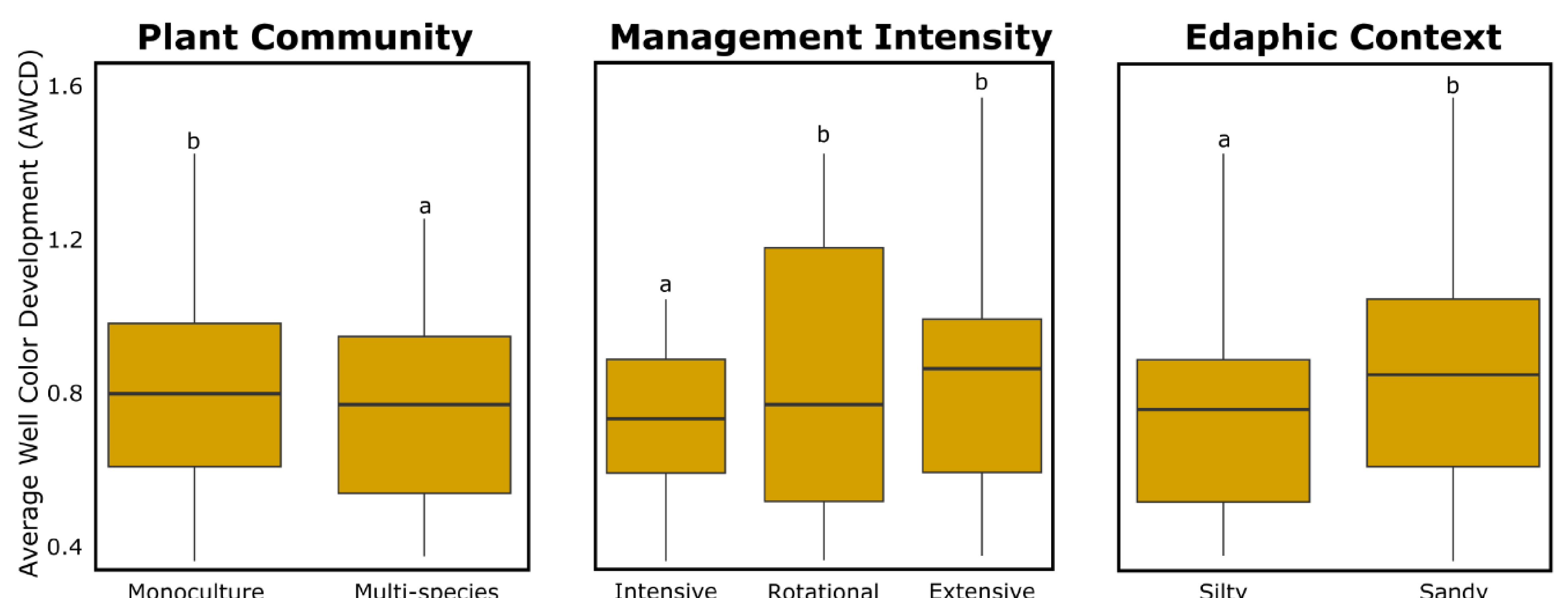
- Consistent increase in yield for multi-species mixture compared to monocultures
- Plant community explained most variation of functional microbial diversity
- Multi-species grassland mixtures have potential to improve productivity and soil functioning in future grassland systems

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Multi-species grassland mixtures have a consistently **higher productivity**, both in **roots and shoots**

Microbial activity is consistently **higher** in a **multi-species grass mixture** and under an **extensive** management regime



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