

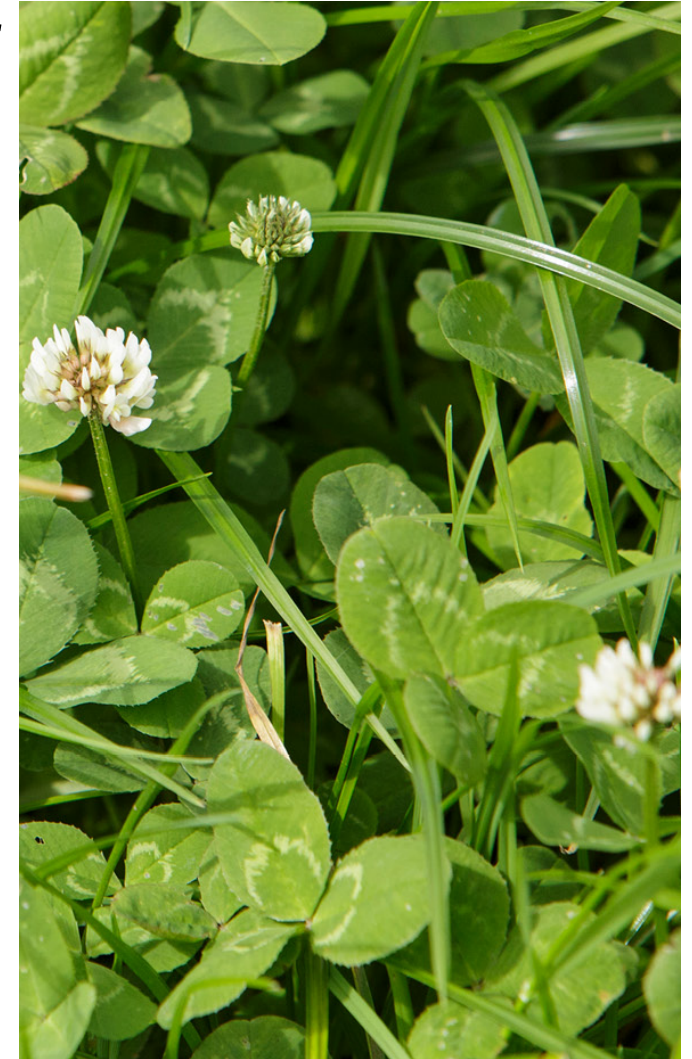
Dry matter production of multispecies swards under grazing in two chemical nitrogen scenarios

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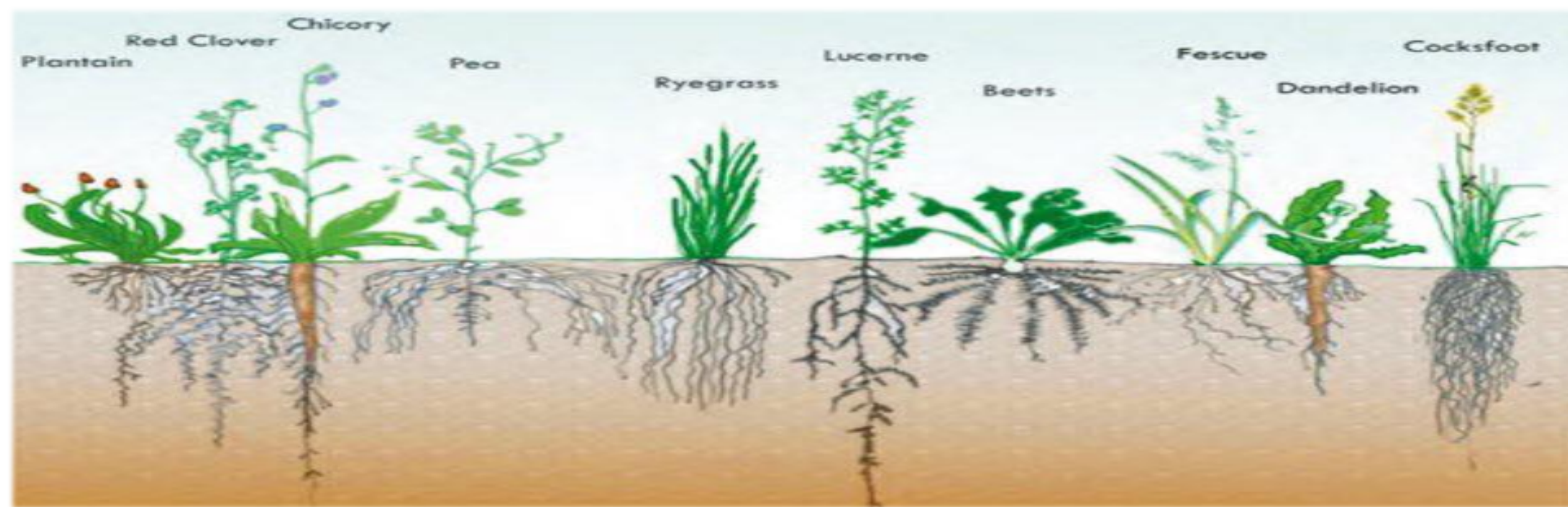
Introduction

- Pasture production key to sustainability of grazing systems – Nitrogen is limiting
- Multispecies swards (MSS) can increase dry matter (DM) production where clovers provide nitrogen to swards
- Most common grazed MSS are perennial ryegrass (PRG) & white clover mixtures
- Can the addition of herbs provide further complementarity?



Complementarity

- Species of different rooting depths access different soil horizons – may lead to greater soil resource use efficiency
- Species with different growth strategies may provide more resilience to stress



Novel Multispecies Swards

- Build on the PRG & clover swards base by adding other species
- MSS including forage herbs – Plantain & Chicory
- Forage herbs have production and environmental benefits
- Intensive grazing systems?
- Objective of the current trial was to evaluate the **production** MSS under two Nitrogen rates in an intensive grazing system

Methodology

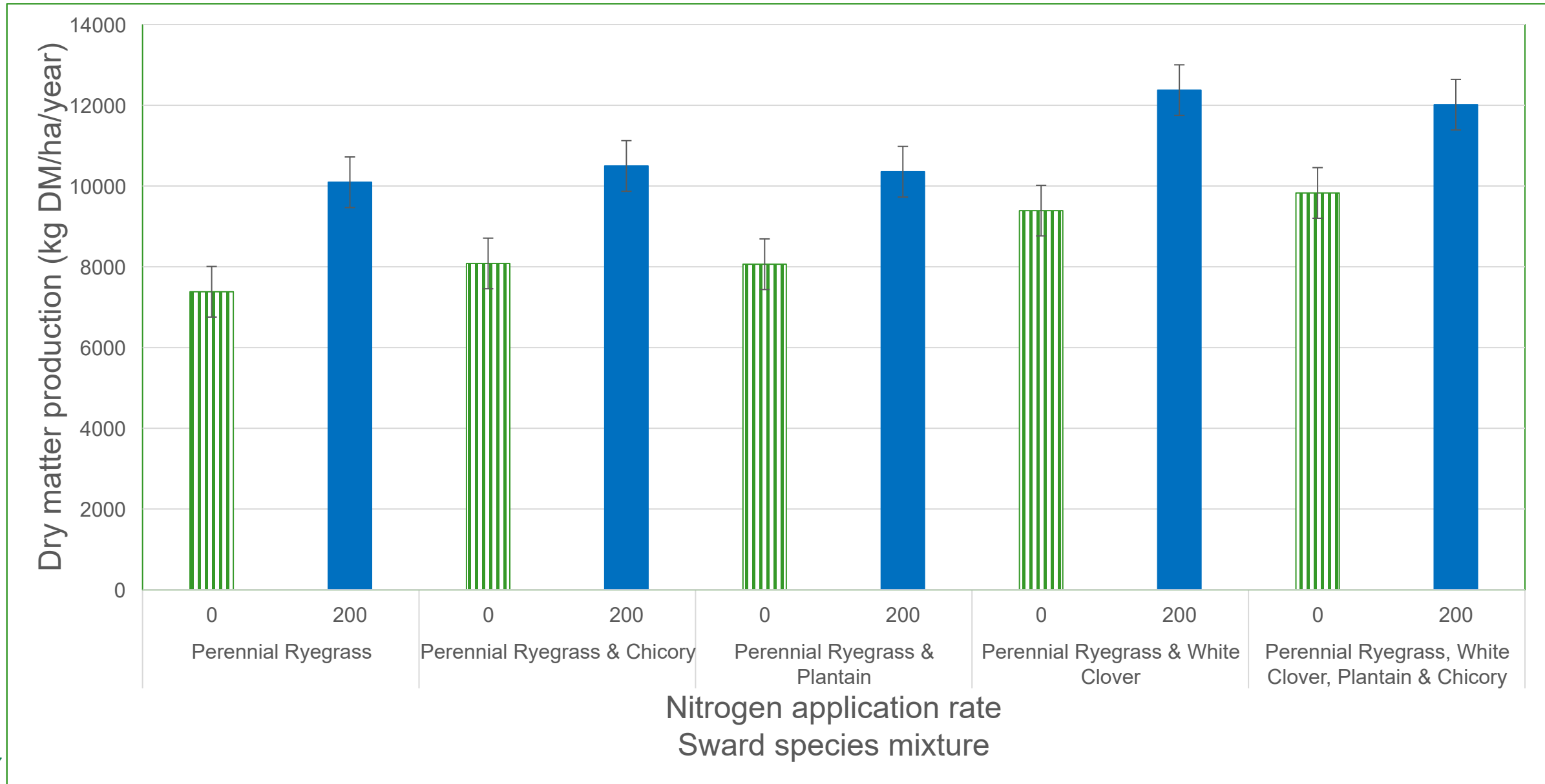
- Plot trial established in 2019
- 5 sward types and two N application rates - 0N & 200N
- Plots managed as Irish dairy farm - all plots were measured and grazed when control reached target cover
- Plots were grazed and measured 8, 9 & 8 times in 2020, 2021 & 2022, respectively



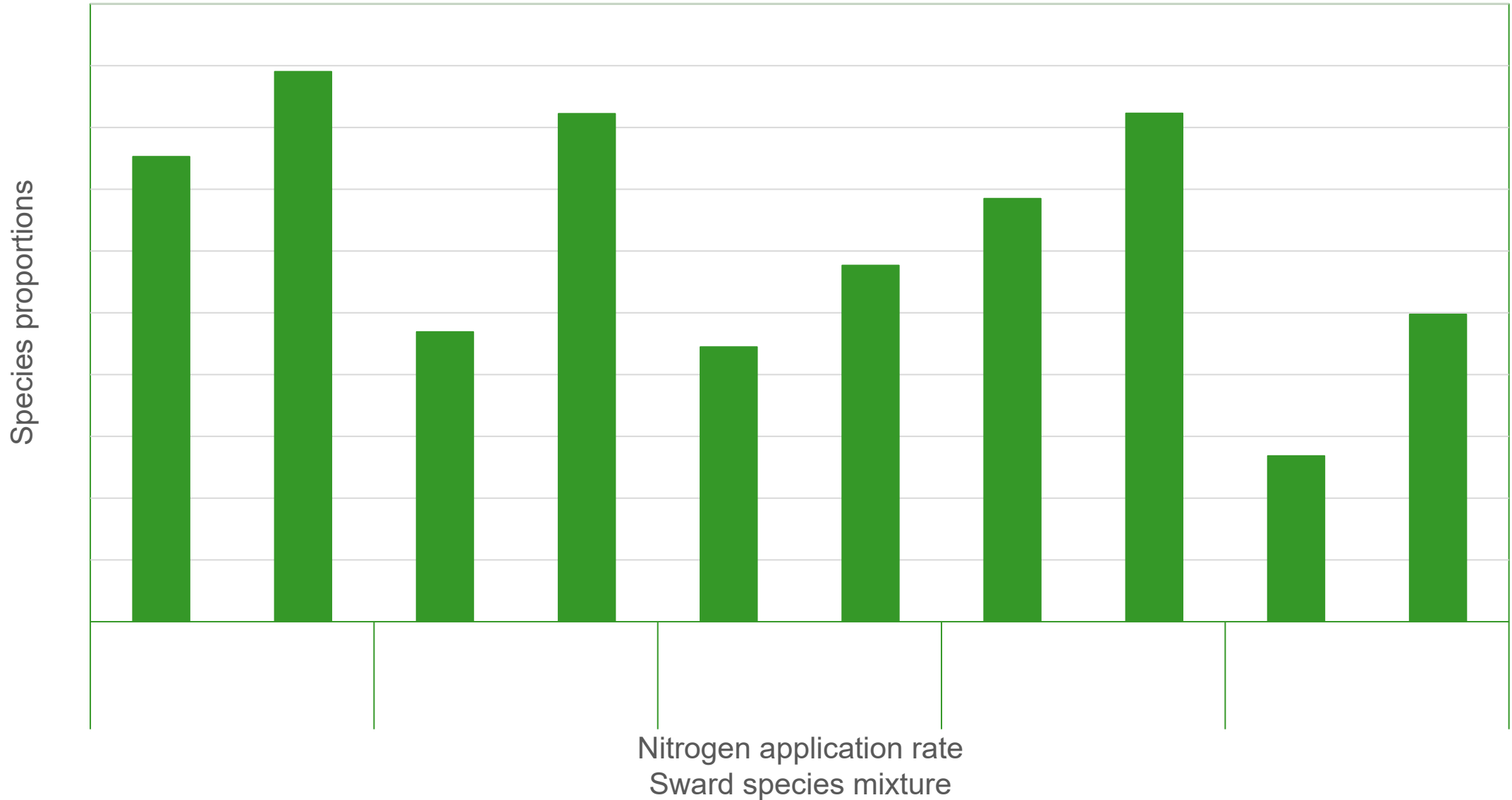
Experimental treatments

Nitrogen application (kg N/ha/year)	Sward description
0	Perennial ryegrass
0	Perennial ryegrass & Chicory
0	Perennial ryegrass & Plantain
0	Perennial ryegrass & White Clover
0	Perennial ryegrass, White Clover, Plantain & Chicory
200	Perennial ryegrass
200	Perennial ryegrass & Chicory
200	Perennial ryegrass & Plantain
200	Perennial ryegrass & White Clover
200	Perennial ryegrass, White Clover, Plantain & Chicory

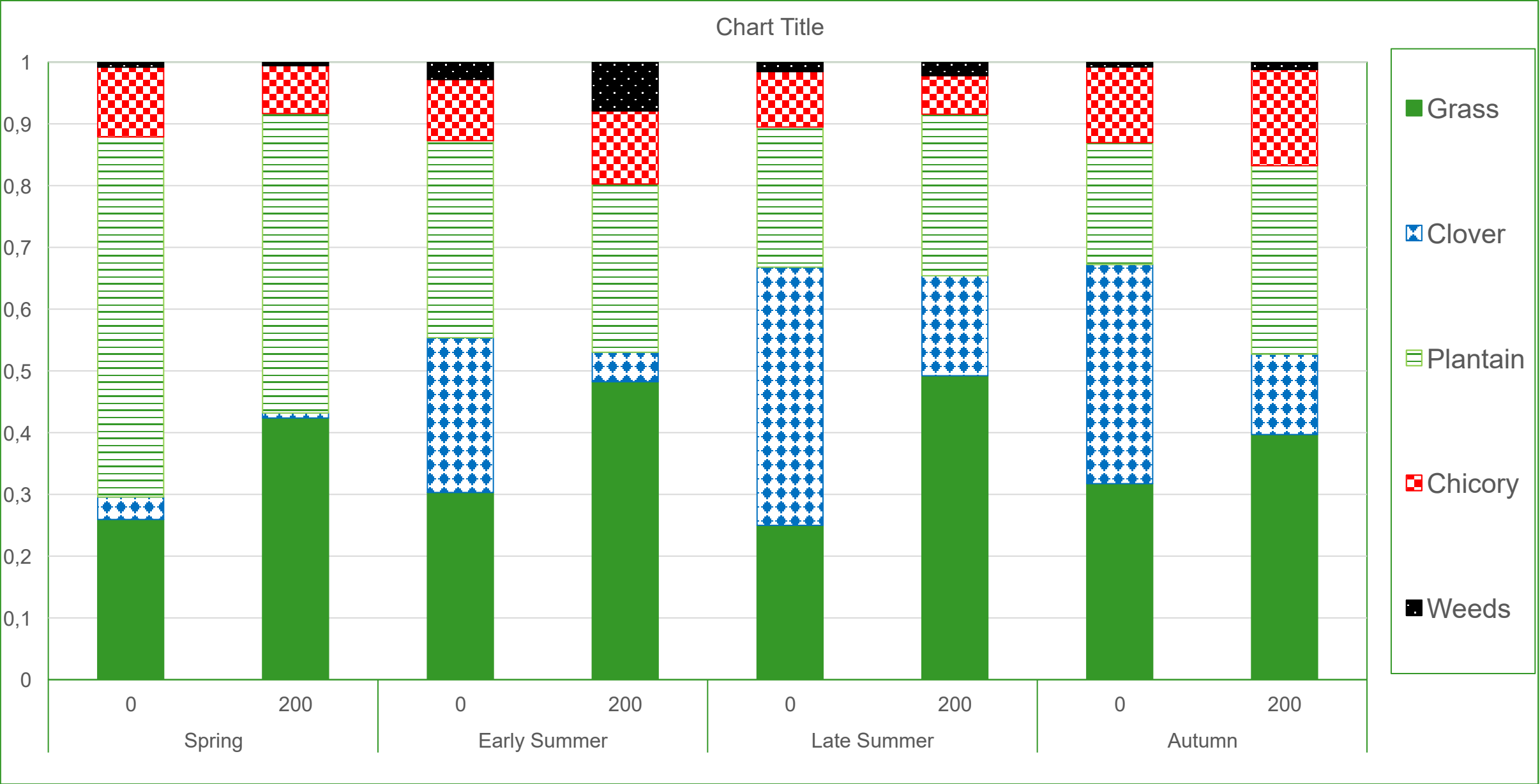
Annual dry matter production



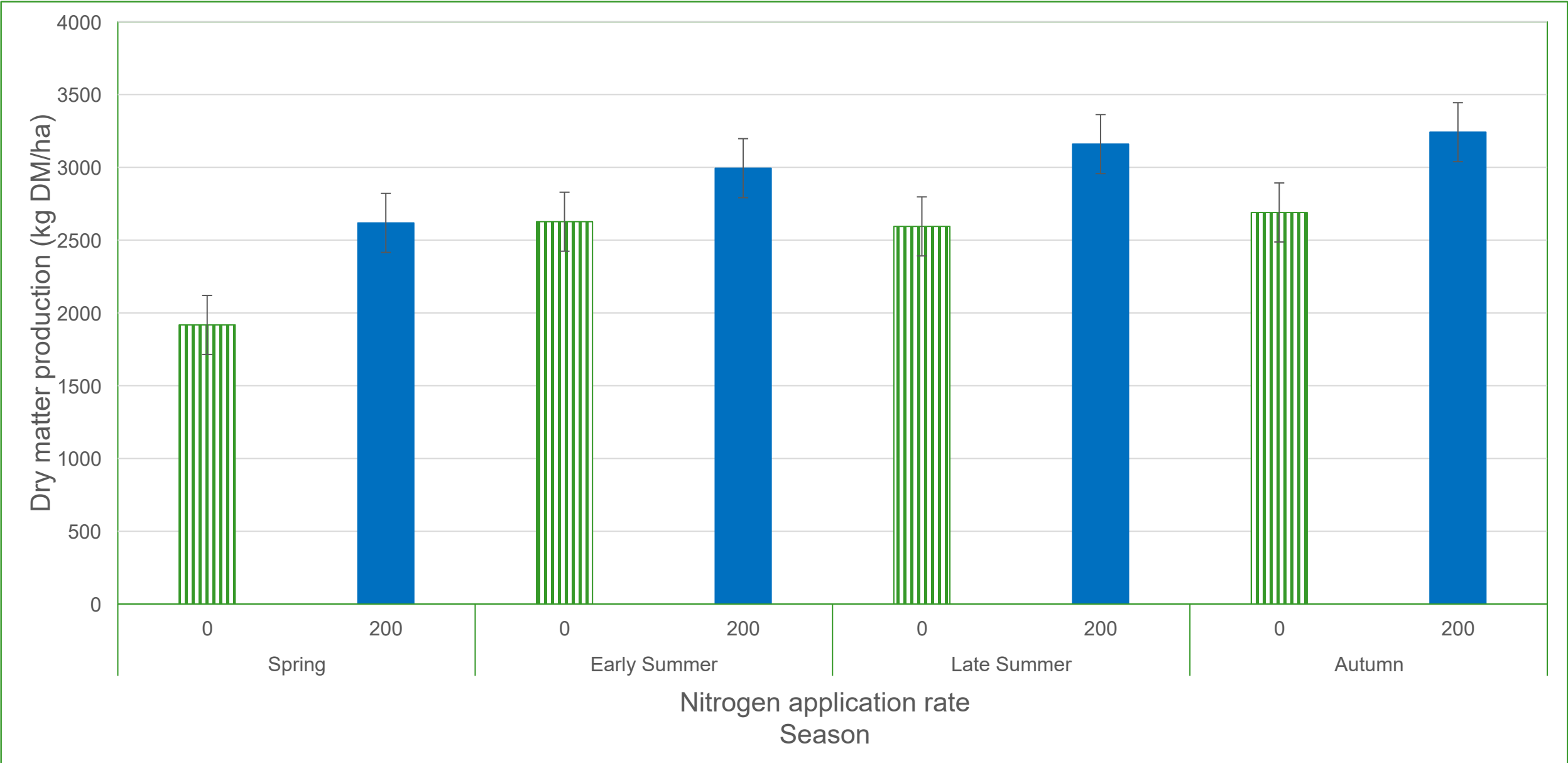
Annual sward composition



Seasonal sward composition (complex MS mixture)



Seasonal dry matter production (complex MS mixture)



Conclusions and Implications

- Inclusion of white clover increases grazed sward DM production
- Inclusion of chicory or plantain does not significantly increase DM production
- Addition of nitrogen increases DM production of simple and complex MSS
- Nitrogen does not affect plantain content of swards
- Further work needed to:
 - Assess optimal nitrogen application rates for MSS
 - Investigate other factors affecting **persistence** of component species in grazed MSS
 - Investigate other novel species for use in intensive grazing systems

Acknowledgements

The authors would like to acknowledge:

- The financial contribution of VistaMilk ([16/RC/3835](#)) and the Walsh Scholarship scheme
- The academic assistance of UCD
- The technical assistance of the laboratory and farm staff at Teagasc Moorepark

Questions?

