

THIS ISSUE

- LegacyNet's Multisite Grassland Research Published in Science
- Matej's First PhD Publication

Watch a [summary of the published LegacyNet paper](#) by scanning the QR code below.



Matej Orešković's First PhD Publication

Matej, PhD researcher at PULS, has reached an important milestone in his PhD with the publication of his first research article, titled "Effects of Grassland Ley Sward Diversity on Soil Potassium and Magnesium Forms in Two Contrasting Sites." In this study, he examined how grassland mixtures of grasses, legumes, and herbs influence different forms of soil potassium (K) and magnesium (Mg) across two contrasting soil types. The results show that plant functional composition plays a key role in soil nutrient dynamics, with grass-dominated swards maintaining higher potassium levels and legume-rich mixtures showing lower soil K. These findings provide valuable insights for soil fertility assessment and sustainable grassland management.

Raniel Valencia

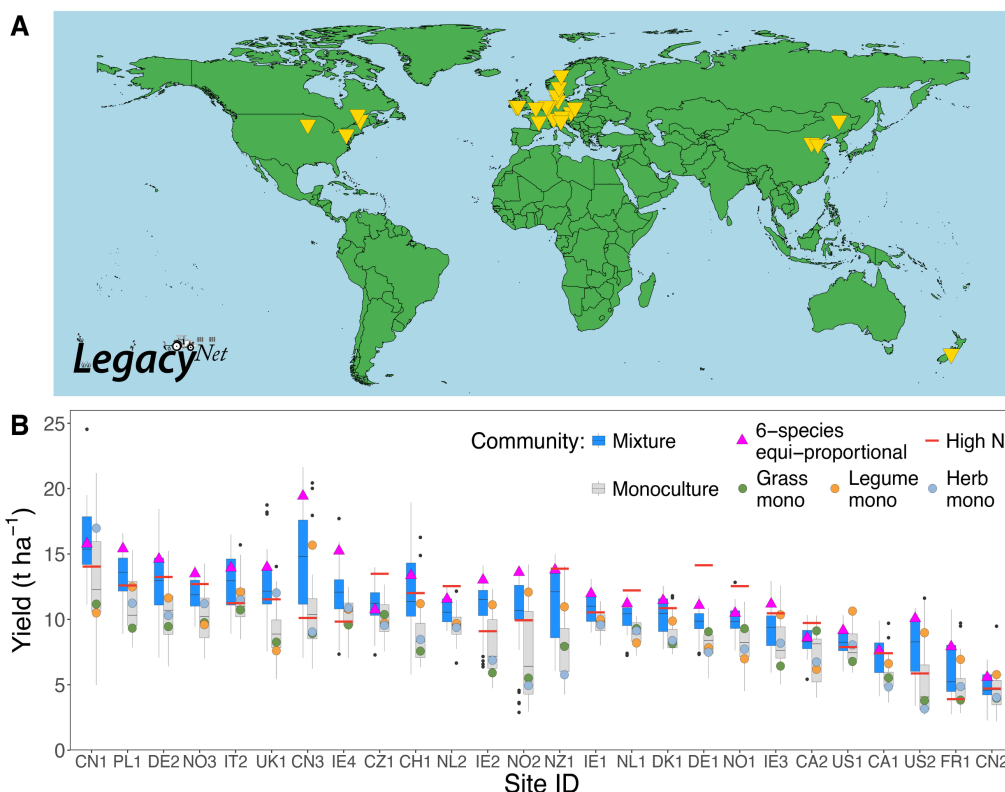
LegacyNet's Multisite Grassland Study Published in Science

Recently, [LegacyNet](#), in collaboration with LegumeLegacy, published its international multisite paper titled "[Multispecies grasslands produce more yield from lower nitrogen inputs across a climatic gradient](#)" in leading journal *Science*.

The study draws on data from 26 experimental sites across 15 countries, where researchers tested grasslands sown with up to six high-yielding forage species, including grasses, legumes, and herbs, under moderate nitrogen inputs. The findings show that multispecies mixtures consistently outperformed conventional grassland systems, including high-input grass monocultures and two-species grass-legume mixtures.

Crucially, the higher yields in multispecies grasslands were driven by strong grass-legume and legume-herb synergistic interactions, rather than by increased fertilizer use. The yield advantage of multi-species mixtures was even greater at warmer sites, highlighting their potential to support productive and resilient grasslands under climate change.

Overall, this landmark study demonstrates that well-designed, diverse grassland mixtures can deliver high forage yields with lower nitrogen inputs, offering a more environmentally sustainable pathway for grassland agriculture. These insights strongly reinforce the scientific foundation of the LegumeLegacy project and its goal of developing climate-smart, biodiversity-based forage systems.



Raniel Valencia



LegumeLegacy is an MSCA Doctoral Network

<https://legumelegacy.scss.tcd.ie/>

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Linn Huser, Raniel Valencia and Emery Wang.



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