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Book of Abstracts



PATTERNS OF α AND β -DIVERSITY HIGHLIGHT UNIQUENESS-BASED CONSERVATION PRIORITIES FOR PLANT COMMUNITIES IN ITALIAN AGRICULTURAL LANDSCAPES

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Agrosilvopastoral management can enhance biodiversity in agricultural landscapes by promoting ecosystem diversification¹. To assess their conservation priority based on contribution to plant diversity, we surveyed plant communities in 25 m² plots across croplands, grasslands, shrublands, forests, and wetlands in 50 agricultural areas all over Italy in the spring-summer of 2023. We compared the plant communities in terms of α -diversity, β -diversity, and species composition using analysis of variance (PERMANOVA) and Indicator Species Analysis (INSPAN). Grassland plant communities had the highest α -diversity and wetland plant communities had the lowest. All ecosystem types contributed to β -diversity; however, we observed a negative correlation between local contribution to β -diversity (LCBD) and α -diversity. Wetland plant communities had the highest LCBD and species uniqueness, followed by croplands and grasslands. Wetland species such as *Phragmites australis*, *Myriophyllum spicatum*, and *Lemna minor*, along with woody species like *Prunus spinosa*, *Rubus ulmifolius*, and *Quercus* spp., were key contributors to β -diversity. Each ecosystem type had a distinct plant community composition (PERMANOVA) and indicator species (INSPAN). Based on our evidence, wetland plant communities had the highest conservation priority due to their unique species composition. Nevertheless, our findings highlight the importance of maintaining diverse agricultural landscapes encompassing a range of anthropogenic, natural, and semi-natural ecosystems to safeguard the overall plant diversity. Conservation efforts should prioritize the preservation of such diversified agricultural landscapes.

[1] Benton, T.G., Vickery, J.A., Wilson, J.D. (2003). Farmland biodiversity: is habitat heterogeneity the key? *Trends in ecology & evolution*, 18(4), 182-188.