PP-580 [Pollination and Bee Flora]

Assessing pollinator food resources – a step-by-step guide using experimental and/or literature data

Jacek Jachuła[1,2], Aleksandra Splitt[1], Zuzanna Filipiak[3], Michał Filipiak[3], Aleksandra Walczyńska[3], Elżbieta Ziółkowska[3,4,5]
[1]Apiculture Division, The National Institute of Horticultural Research, Skierniewice, Poland
[2]Department of Botany, Mycology and Ecology, Institute of Biological Sciences, Maria Curie-Skłodowska University, Lublin, Poland
[3]Institute of Environmental Sciences, Faculty of Biology, Jagiellonian University, Cracow, Poland
[4]Institute of Geography and Spatial Management, Faculty of Geography and Geology, Jagiellonian University, Cracow, Poland
[5]Social-Ecological Systems Simulation (SESS) centre, Department of Agroecology - Agricultural biodiversity, Aarhus University, Aarhus, Denmark

Establishing and enhancing pollinator-friendly habitats in agricultural landscapes requires an understanding of their nectar and pollen production capacity. In order to assess the spatial and temporal availability of floral resources at the landscape scale, it is essential to first determine the floral resource production and flowering phenology of individual plant species, as well as the flora composition and distribution of habitats within the landscape.

However, for many plant species there is still limited information on their contribution to floral resource production in different habitat types. This gap in knowledge may be due to the labor-intensive and time-consuming nature of the field and laboratory work required, as well as the lack of standardized methodologies. We have, therefore, aimed to develop a method that is cost-effective and user-friendly.

Our method involves the assessment of flora composition, flowering phenology and flowering abundance, followed by quantification of nectar and pollen production per flower unit. The data thus obtained can be integrated into existing databases on floral resource traits, such as the comprehensive database of Filipiak et al. (2022), which is the first to compile data on food resources produced by both wild and cultivated plants in different ecosystems.

Further, we developed quantification methods that allow the extrapolation of species-level information to the habitat level, and further extend the analysis to the landscape level. Our methodology provides a basis for obtaining the total amount of food resources and illustrating their spatial and temporal distribution within a landscape. This approach can facilitate the identification of the most beneficial habitats to support continuity of food supplies for pollinators.

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