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Academic Degree:	dr hab. (DSc.)
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UPWr Base of Knowledge - link:	<a href="https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr10dff724d2e34149a917b1d058fd5f93&amp;afil=&amp;lang=en">https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr10dff724d2e34149a917b1d058fd5f93&amp;afil=&amp;lang=en</a>
Researchgate:	<a href="https://www.researchgate.net/profile/Magdalena-Szymura">https://www.researchgate.net/profile/Magdalena-Szymura</a>
Personal website / Working group website:	
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	<p>2023-2025 - Innovative methods of breeding beef cattle for fattening in the Sudetes Foothills in order to produce beef with unique properties and introducing it to the market (RF) - - Agency for Restructuring and Modernization of Agriculture under the "Cooperation" action</p> <p>2022-2024 - Integrated approach to the protection of ecosystems against invasive alien plants in southern Poland - IAS/EcoSystemCARE (RF) - Norwegian funds</p> <p>2022-2024 - Improving the state of ecological connectivity in the Karkonosze National Park and its buffer zone (RF) - Norwegian funds</p> <p>2020-2022 - Innovative methods of sheep breeding and breeding in the light of the changing climatic conditions of Lower Silesia (PI) - Agency for Restructuring and Modernization of Agriculture under the "Cooperation" action</p> <p>2020-2023 - Spatial diversity of species richness of vascular plants in Poland - patterns, causative factors and predicted changes (OPUS, NCN), (RF)</p>
PhD topic:	The adaptive potential of grass species in face of climate changes in Central Europe
Research discipline in Doctoral School:	Agriculture and Horticulture
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	<p>Climate change has negatively impacted the grasslands in Europe, and this trend is expected to continue. Plant responses to climate change include morphological and physiological adaptations, and involve changes in plant genes. The quantifying plant responses to changing climate is a fundamental challenge for semi-natural grassland biodiversity protection and management. The aims of research conducted in proposed PhD thesis is to assess the adaptive potential of semi-natural grassland plant species to a changing climate. The research focus on grassland species (grasses and herbs), considered foundation species of Central Europe's semi-natural grasslands. The objectives are to explore differences between species, populations and clones regarding biomass production and distribution, phenology, photosynthetic performance, nitrogen content, morphological and anatomical traits as well as genetic structure. The proposed project is interdisciplinary, and needs collection the plant material from selected sites in Poland, and growing the plants in a greenhouse where temperature and CO2 concentration imitate those predicted for Poland in future according to the selected scenario. The phenology and intensity of photosynthetic processes should be analyzed in growing seasons during the experiment. After three years, the adaptations, including leaf anatomy (stomata density and size, specific leaf area, leaf thickness), biomass allocation (above- to below-ground ratio, investment in reproduction), eco-physiology (photosynthetic apparatus composition) should be assessed. Finally, the variability of measured traits should be correlated with the genetic structure to assess the relative importance of genetic variability and morphological plasticity in plant performance in changing climate.</p>
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	The candidate should have an education in agriculture, environmental or biological sciences. Candidate should have basic skills in recognition of plant species and the basics of work in the laboratory. The candidate is expected to carry out fieldwork, readiness to go on scientific internships and participate in international scientific conferences. The candidate should know English at a communicative level and be able to use English-language literature. The ability to use programs for statistical calculations will also be useful.
a) Project title:	0
b) Agreement number:	0
c) Number of months in the project to support PhD student (in months; starting from 1st of October 2024):	0
Project website:	