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UPWr Base of Knowledge - link:	<a href="https://bazawiedzy.upwr.edu.pl/info/author/UPWr52de048f59f449d48f18e0f1e6eb8ce9/">https://bazawiedzy.upwr.edu.pl/info/author/UPWr52de048f59f449d48f18e0f1e6eb8ce9/</a>
Researchgate:	<a href="https://www.researchgate.net/profile/Iwona-Gruss-2">https://www.researchgate.net/profile/Iwona-Gruss-2</a>
Personal website / Working group website:	
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	<p>"Development of a technology for the use of ozonated water in the cultivation and storage of asparagus, which will significantly reduce the use of plant protection products, and thus protect the soil environment and obtain a significantly improved product in the form of asparagus shoots free from microorganisms, their toxic metabolites and pesticide residues, with longer shelf life" under the aid agreement No. 00024.DDD.6509.00088.2022.15 under Measure M16 "Cooperation" Rural Development Program 2014-2020; Function: RF</p> <p>Innovative methods of sheep breeding and breeding in the light of changing conditions climate change in Lower Silesia" implemented under Measure M16 "Cooperation" RDP 2014-2020 grant agreement no. 00029.DDD.6509.00097.2019.01 Function: RF.</p> <p>The impact of climate change on soil organisms and plant communities in the conditions of mountain pastures. Project N040 / 0005/21 - Support for Leading Research Teams of Wrocław University of Environmental and Life Sciences. Function: PI.</p>
PhD topic:	Assessing the toxicity of pesticide mixtures on soil organisms in agriculture environment
Research discipline in Doctoral School:	Agriculture and Horticulture
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	<p>The use of pesticides promotes higher yields but is associated with strong adverse effects on non target organisms. Pesticide residues penetrate not only plant tissues but also water and soil, leading to their contamination. Before plant protection products are approved for use, it is necessary to conduct an extensive package of ecotoxicological tests to assess the risk to the environment. However, it seems that the scope of these studies is relatively limited and mainly concerns selected model organisms. Especially concerning soil organisms, such studies are often omitted.</p> <p>The soil is inhabited by a variety of organisms, ranging from bacteria and fungi to arthropods and other invertebrates to small vertebrates. It is the presence of these organisms that determines soil fertility. Pesticide residues in soils can negatively impact the organisms found there, which in turn affects soil functions. Additionally, there is an assumption that the use of many different active pesticide substances in crops, both in one season and in the long term, may cause greater toxicity to soil organisms than individual substances.</p> <p>European Union reports and independent studies indicate the presence of pesticide mixtures in soils. Some of these substances are still detectable despite being phased out several years ago. Therefore, the problem of soil contamination with pesticide mixtures is current and requires detailed research into the environmental risk.</p> <p>The main goal of this proposal is to determine the toxicity of the use of pesticide mixtures in the soil environment. It is necessary to investigate how currently used pesticides, found in mixtures, affect different groups of organisms and how this affects soil functions. As part of this proposal, laboratory, pot, and field tests are planned using pesticides approved for use in crops.</p>
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	<ul style="list-style-type: none"> <li>- The pH candidate should be able to carry out research in the laboratory and field conditions.</li> <li>- Ph.D. in environmental, agricultural, or biological sciences.</li> <li>- Proficient in conducting experimental laboratory and fieldwork. Experience working with microorganisms and arthropods would be particularly valuable.</li> <li>- Knowledge of basic principles of working with chemicals.</li> <li>- Expertise in writing scientific papers and proficiency in data analysis.</li> <li>- Excellent proficiency in spoken and written English.</li> <li>- Demonstrated experience in data analysis.</li> <li>- Strong interpersonal and leadership skills.</li> <li>- Effective self-management and work habits.</li> </ul>
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:	