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UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info/author/UPWr51adaaa2352649068c09331a4c4ef8a0/Sylwia+Lewandowska+title?r=publication&lang=pl
Researchgate:	https://www.researchgate.net/profile/Sylwia-Lewandowska/publications
Personal website / Working group website:	https://legumegap.eu/work-package-2/
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	<p>Member (RF) of EU GREEN project (European University alliance for sustainability: responsible GRowth, inclusive Education and Environment). WP3 Research (Structuring research-based learning through Excellence Clusters (led by University of Angers (France); co-led by University of Parma (Italy). Cluster 2. Agriculture, food and environmental sustainability (cluster led by University of Parma (Italy) with Wroclaw University of Environmental and Life Sciences (UPWr), Poland as a co-leader.</p> <p>Member (PI from Polish side) of an international project ERA-NET Co-Fund SusCrop, acronym LegumeGap „Increasing productivity and sustainability of European plant protein production by closing the grain legume yield gap”. Time 01.04.2019 – 31.12.2022</p> <p>Member (RF) of an international project funded by Federal Ministry of Education and Research, EIG Concert Japan, Connecting and Coordinating European Research and Technology Development with Japan. Main leader Tokyo University of Agriculture and Technology (TUAT), Japan and Leibniz Centre for Agricultural Landscape Research (ZALF), Germany. Topic of the project: "Innovation network to improve soybean production under the global change", acronym INNISOY. Time 01.06.2017 –30.09.2021</p> <p>Member (RF) of an international project "Smart University Grid Saxony5, Wissensströme intelligent vernetze“, acronym Saxony5. Main goal: transfer of knowledge into practice. Participating universities from Germany: HTW Dresden, HTWK Lipsk, HSMW Mittweide, HSZG Zittau/Görlitz, WHZ Zwickau. Time 2018 - 2023</p>
PhD topic:	Application of modern and environment friendly seed treatment methods
Research discipline in Doctoral School:	Agriculture and Horticulture

<p>Short description of the research problem to be solved in the PhD (minimum 1000 characters):</p>	<p>Quality of seeds and yield are the basic parameters determining the effectiveness of crop production. It depends on the environmental conditions during seed germination, plant growth and development, maturation and seed storage after harvest. Seed germination is a complex physiological process that begins with water absorption and ends with the emergence of radicle. Improvement of germination rates are challenges in modern agriculture. Various methods of seed improvement are tools for this purpose. The development of agriculture and the related rational use of natural environment resources forces seed companies to search for novel methods of increasing germination ability and vigour of seeds, uniform seed emergence, and high yields.</p> <p>The aim of the research will be:</p> <p>(a) to increase plant yields by: using non-chemical methods of plant growth stimulation (physical factors) and macroalgae-based bio-products, (b) to reduce the chemicalisation of agriculture (c) to increase germination ability of seeds of different crop species. The germination tests will be carried out according to the International Seed Testing Association (ISTA) methodology. Experiments will be performed in 4 replications, using different concentrations of algae products, which are rich source of biologically active compounds that can positively stimulate plant growth or/and by physical methods (magnetic field, near infrared radiation). The aim of these studies is to select optimal doses of algae concentration for plants and other tested factors. The following will be analyzed: (1) seed germination ability, (2) percentage share of normal and abnormal seedlings and dead seedlings, (3) chlorophyll content (4) evaluation of effectiveness of tested factors.</p>
<p>Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):</p>	<p>A candidate should have basic knowledge of agricultural botany and should be familiar with laboratory work. He/She is expected to carry out field and laboratory experiments, be ready to go on scientific internships abroad and participate in international scientific conferences. A candidate should be fluent in English, be able to study scientific papers in this language (writing, reading, listening, speaking). The ability to use programs for statistical analyses will be also an advantage. A candidate should have a comprehensive knowledge in the science of crop production and organic farming. Good social manners are welcome.</p>
<p>a) Project title:</p>	<p>None</p>
<p>b) Agreement number:</p>	<p>None</p>
<p>c) Number of months in the project to support PhD student (in months; starting from 1st of October 2024):</p>	<p>0</p>
<p>Project website:</p>	<p></p>