

<b>Name and surname:</b>	<b>Anna Dąbrowska</b>
Academic Degree:	dr hab. (DSc.)
Institute/Department:	Department of Functional Food Product Development
e-mail address:	anna.dabrowska@upwr.edu.pl
ORCID:	0000-0002-8524-5802
UPWr Base of Knowledge - link:	<a href="https://bazawiedzy.upwr.edu.pl/info/seam?id=UPWrc58fd01a102f44df83403afc82047c06&amp;affil=&amp;lang=en">https://bazawiedzy.upwr.edu.pl/info/seam?id=UPWrc58fd01a102f44df83403afc82047c06&amp;affil=&amp;lang=en</a>
Researchgate:	
Personal website / Working group website:	
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	Currently since 10.2023 til 10.2027 "The Research Network of Life Sciences Universities for the Development of the Polish Dairy Industry – Research Project" funded under the designated subsidy of the Minister of Education and Science, RF 2021-2022 „The use of plant extracts rich in polyphenolic compounds with high antioxidant potential for the preparation of fermented milk drinks”, Projekt "MISTRZ"; PI
PhD topic:	The application of plant and animal protein preparations and polyphenol compounds as factors influencing the rheological properties and stimulating the viability of microbiota in functional fermented beverages
Research discipline in Doctoral School:	Nutrition and Food Technology
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	<p>Fermented milk drinks, produced with active microbiota, both classic and probiotic, are classified as functional food. The beneficial effect on human health resulting from the consumption of this group of products depends, among other things, on the type of microbes used in their production, which should remain alive and active until the last day of their shelf life, as well as the additives used. Currently, the food industry offers many additives that can enrich and make fermented drinks more attractive, as well as increase their biological value. This activity is aimed at improving the nutritional, organoleptic and physicochemical properties, increasing the biological potential and the survival of microbial cultures. It is particularly important in the context of bacteria belonging to the Bifidobacterium group, which is characterized by relatively poor growth in milk, what is why many different substances with prebiotic properties are used and analyzed in dairy products. There are many information in the literature on the growth stimulation and improvement of the survival of Bifidobacterium genus by oligosaccharides, but much less research concerns the use of various proteins and plant additives belonging to the group of polyphenols as substances that stimulate the growth and improve the survival of this group of microorganisms. The use of plant extracts with a high content of antioxidant compounds may also become an attractive alternative to typical fruit pulps with high sugar content used in production. Another advantage is the low pH of fermented milk drinks, at which polyphenolic compounds remain stable and reveal their colour enhancing properties. However, the most important feature is their positive impact on consumers' health, which results from their very high antioxidant potential, and allows a significant reduction in the occurrence of many lifestyle diseases. The appropriate combination of protein and plant components makes it possible to produce functional fermented drinks, characterized by increased bioactivity, numerous and stable probiotic microbiota and good physico-chemical and rheological properties. However, this requires a detailed analysis of the interactions between these ingredients in fermented drinks, their potential utilization by the microbes and determining the impact on its number and on the course of the technological process, including the rheological properties of the final product.</p> <p>The main goals planned in the doctoral thesis are:</p> <ul style="list-style-type: none"> <li>- analysis of food proteins (plant and animal) in terms of their antioxidant activity, their hydrolysis, and analysis of the impact of their addition on the survival of yogurt cultures, including bifidobacteria, in the production of functional fermented drinks (analysis of the impact on the technological process)</li> <li>- selection of polyphenolic compounds isolated from fruit and preserved by various methods, in terms of their antioxidant activity, its stability in fermented drinks, influence on color and the course of the technological process</li> <li>- analysis of the physico-chemical properties of the obtained fermented drinks, with special impact on rheological and sensory analysis.</li> </ul>
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	Completed master's studies in biological sciences (e.g. food technology, biotechnology, quality management and food analysis, related), preferably in the field of dairy technology. Practical, good knowledge of basic biochemical analytical techniques (protein determination, determination of enzymatic and antioxidant activities, hydrolysis reactions, determination of the degree of hydrolysis, rheological determinations) and microbiological techniques (cultures, preparation of media). Very good knowledge of spoken and written English. Independence in laboratory work, skills in organizing and planning work.
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:	