

<b>Name and surname</b>	<b>Joanna Kolniak-Ostek</b>
Academic Degree	dr hab. inż. (DSc.)
Institute/Department	Department of Fruit, Vegetable and Plant Nutraceutical Technology
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ORCID	0000-0002-1933-2852
UPWr Base of Knowledge - link	<a href="https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr3a292f5d6af9405396715eacb6f6d54f&amp;affil=&amp;lang=pl">https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr3a292f5d6af9405396715eacb6f6d54f&amp;affil=&amp;lang=pl</a>
Researchgate	<a href="https://www.researchgate.net/profile/Joanna-Kolniak-Ostek">https://www.researchgate.net/profile/Joanna-Kolniak-Ostek</a>
Personal website / Working group website	
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca))	<ol style="list-style-type: none"> <li>1. Determination of chemical composition, pro-health properties and antioxidant capacity of pear (<i>Pyrus communis</i> L.). 2014-2017. National Science Centre project 2013/09/D/NZ9/00375; PI</li> <li>2. CFactors affecting the quality of grapes and wine. 2014-2017. National Science Centre project 2013/09/B/NZ9/01745; RF</li> <li>3. Development of chokeberry drink prosperous in bioactive compounds with high antioxidant activity and low turbidity and sediment. 2015-2018. National Centre for Research and Development project PBS3/B/8/21/2015; RF</li> </ol>
Do you plan to engage support of second supervisor or auxiliary supervisor?	YES
	Second supervisor (from other discipline, polish or international research unit)
Name and surname	Claire Dufour
Academic Degree	Dr.
Faculty, Institute/Department	Department of Safety and Quality of Plant Products is joint research unit between Avignon University and INRAE
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ORCID	<a href="https://orcid.org/0000-0002-1745-7053">https://orcid.org/0000-0002-1745-7053</a>
UPWr Base of Knowledge - link or most important publications from last 3 year (JCR) / patents from last 3 years (maximum 5)	<ol style="list-style-type: none"> <li>1. Adriana Gadioli Tarone, Pascale Goupy, Christian Ginies, Mario Roberto Marostica Junior, Claire Dufour. Advanced characterization of polyphenols from <i>Myrciaria jaboticaba</i> peel and lipid protection in in vitro gastrointestinal digestion. <i>Food Chemistry</i>, 2021, 359(1):129959</li> <li>2. Leandro Oliveira Lino, Bénédicte Quilot-Turion, Claire Dufour, Marie-Noëlle Corre, René Lessire, Michel Génard and Jean-Luc Poëssel. Cuticular waxes of nectarines (<i>Prunus persica</i> L. Batsch) during fruit development in relation to surface conductance and susceptibility to <i>Monilinia laxa</i>. <i>Journal of Experimental Botany</i>, 2019, 71(18), 1-17.</li> <li>3. G.Bolea, C.Philouze, S.Risdon, M.Dubois, A.Humberclaude, C.Arnaud, C.Dufour, G.Meyer. Apple polyphenols decrease endothelial dysfunction and atherosclerosis in ApoE mice fed with chronic Western diet. <i>Archives of Cardiovascular Diseases Supplements</i>, 2019, 11(2), 190.</li> <li>4. Claire DUFOUR, Gaëtan Gens Boléa, Christian Ginies, Marie-José Vallier. Lipid protection by polyphenol-rich apple matrices is modulated by pH and pepsin in in vitro gastric digestion. <i>Food &amp; Function</i>, 2019, 10(7).</li> <li>5. Carine Le Bourvellec, Priscilla Bagano Vilas Boas, Pascale Lepercq, Sophie Comtet-Marre, Pauline Auffret, Philippe Ruiz, Romain Bott, Catherine MGC Renard, Claire Dufour, Jean-Marc Chatel, Pascale Mosoni. Procyanidin—Cell Wall Interactions within Apple Matrices Decrease the Metabolization of Procyanidins by the Human Gut Microbiota and the Anti-Inflammatory Effect of the Resulting Microbial Metabolome In Vitro. <i>Nutrients</i>, 2019, 11(3):664.</li> </ol>
Researchgate	<a href="https://www.researchgate.net/profile/Claire-Dufour-4">https://www.researchgate.net/profile/Claire-Dufour-4</a>
Personal website / Working group website:	
Participation projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca))	<ol style="list-style-type: none"> <li>1. Interested in the physicochemical and health properties of dietary polyphenols in relation with their nutritional value - PI</li> <li>2. INFOGEST 2.0 in vitro digestion protocol, <i>Nature Protocols</i> 2019, DOI: 10.1038/s41596-018-0119-1 - RF</li> </ol>
<b>PhD topic</b>	<b>Analysis of bioactive properties and the potential of using haskap berries in the prevention of diet-related diseases</b>
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>The aim of this project is to prove the possibility of using haskap berries in the prevention of non-communicable chronic diseases related to improper nutrition.</p> <p>In order to prove the positive effect and health-promoting properties of haskap berries, the project will determine its antioxidant, anti-inflammatory and anti-cancer activities. The aim of the project is also to confirm the positive effect of haskap berry polyphenol extracts on a living organism by carrying out in-vivo tests. Studies will be carried out on the effect of polyphenols on, among others, weight gain, blood pressure, blood glucose, triglycerides, cholesterol levels and morphology of liver and heart.</p> <p>In order to determine the stability of bioactive compounds of haskap berries, both fresh fruit (7 ecological varieties and 2 commercial varieties) and processed fruit (smoothie juices and cloudy juices) will be tested. The essence of the research will be to learn about the raw material and the chemical changes taking place during the technological process, and to determine the suitability of haskap berries for processing.</p> <p>The project includes 6 research stages, the effect of which will be a detailed characterization of fruits and preparations of haskap berries. Stage 1 - determination of the basic chemical composition of the fruit. Stage 2 - evaluation of the content of polyphenols by UPLC-MS methods, with particular emphasis on the anthocyanin and iridoid fractions. Stage 3 - determination of the antioxidant capacity of the tested haskap berry varieties using the DPPH, ABTS and FRAP methods and anti-inflammatory properties, through spectrophotometric measurement of cyclooxygenase 1 and 2 activity. Stage 4 - use of haskap berries to obtain mixed cloudy juices and smoothie juices with high pro-health values. The obtained products will be assessed in terms of basic chemical composition, physical parameters (color, viscosity, turbidity), profile and content of polyphenolic compounds, as well as antioxidant and anti-inflammatory properties. A sensory evaluation will also be performed. The products will be stored for 6 months. The storage examinations done in specific intervals of time will allow for determining the direction of the changes of qualitative parameters of the obtained products. Stage 5 - determination of chemopreventive activity against colorectal cancer cell lines and normal human dermal fibroblasts (NHDF) cells in selected fresh and processed haskap berries. At the same time, the antioxidant (DCFDA test) and antiinflammatory (COX Colorimetric Inhibitor Screening Assay) properties of the tested samples will be assessed. This stage of research will be performed as commissioned work. Stage 6 - Polyphenolic extracts of selected varieties and haskap berries preserves will be used in dietary experiments. In animals fed with various preparations of haskap berry, the following tests will be performed: measurement of weight gain, blood pressure, of the stimulation of the immune system, measurement of gamma interferon (IFN-<math>\gamma</math>), measurement of glucose, triglycerides and cholesterol, as well as histopathological tests - steatosis liver and body fat measurement. This stage of research will be performed as commissioned work.</p> <p>The implementation of the objectives and research scope of this project will allow to prove the positive impact of the consumption of bioactive compounds on the reduction of the occurrence of diseases related to improper nutrition.</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>- having an academic title of Master in food science and nutrition or biological sciences; average grade for the course of 1st and 2nd cycle studies or uniform Master's studies - at least 4.0;</li> <li>- knowledge of English at the minimum B2 level of the European System for the Description of Languages</li> <li>- scientific achievements in the field of the characterization of bioactive compounds, including polyphenolic compounds</li> <li>- experience in the implementation of research related to the processing of plant products</li> <li>- knowledge of research methods in the field of physicochemical analyzes of plant raw materials</li> </ul>
<b>Details of the project to support PhD research</b>	
a) Project title	none
b) Agreement number	none
c) Number of months in the project to support PhD (in months; starting from 1st of October 2022)	0
d) Project website	