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UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info/author/UPWr777d3eb0b40743caad0aac6d5ea0032d/
Researchgate:	
Personal website / Working group website:	
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	<p>"Development of technology for the production of sour beers with fruit juices with the highest antioxidant activity". Project No. RPDS.01.02.02-02-0060/19 co-financed by the European Union under the Regional Operational Programme of the Lower Silesian Voivodeship 2014-2020, (RF)</p> <p>„Designing low-alcohol beer based on the technology available in Browar Profesja”, the Program for Supporting Partnership in Higher Education and Science and the Sector of Economic Activity (the MOZART program), BWU-5/2019/M8, Wrocław Academic Hub, (PI)</p>
PhD topic:	Kvass with new functional and sensory characteristics
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 the research will be to evaluate the potential for the use of unconventional raw materials and microorganisms in the technological process of producing kvass with an improved health promoting properties.</p> <p>The research model assumes conducting of production process for kvass based on rye bread. The potential to enrich the product with new functional and sensory characteristics through the addition of basic and specialty malts and plant materials rich in bioactive compounds will be explored. A key factor influencing the qualitative and sensory features of the product will be the choice of biological material. The effects of ethanol and lactic fermentations, spontaneous and induced inoculation using different microbial cultures, including probiotic microorganisms, on physicochemical parameters and sensory characteristics will be investigated. Another aspect of the research will be to assess the feasibility of introducing a hopping process in the production technology of kvass to ensure microbiological stability to extend its storage life. The research will result in the development of a recipe and technology for the production of kvass, with functional properties and an interesting sensory profile. The research will include: analysis of the carbohydrate profile (glucose, maltose, maltotriose, dextrins) and content of fermentation products (ethanol, glycerol and organic acids) by high performance liquid chromatography HPLC, profile of volatile compounds (higher alcohols, aldehydes, esters, terpenes, terpenoids and others) by GC-FID and GC-MS gas chromatography, physicochemical parameters (pH, extract, degree of attenuation, colour), total phenolic compounds by Folin-Ciocalteu method and antioxidant activity by FRAP, DPPH• and ABTS•+ methods. In addition, microbiological analysis using plate seed and microscopic methods will be carried out. The kvass will also be subjected to a comprehensive sensory analysis.</p>
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	<p>The Candidate is required to have a university degree with an MA in Food and Nutrition Technology or Biotechnology. The candidate's average grade from I and II degree studies should be at least 4,0. The candidate should demonstrate the ability to work in a laboratory, knowledge of basic food analysis methods, including methods for the analysis of raw materials and cereal products and the conduct of basic fermentation processes. The Candidate should demonstrate knowledge of fermentation and cereal technology including bakery technology in particular. In addition, the Candidate should demonstrate knowledge of English at B2 level, operation of basic software, i.e. Word, Excel, Statistica, PowerPoint. The Candidate should have the ability to work in a team.</p>
a) Project title:	none
b) Agreement number:	none
c) Number of months in the project to support PhD student (in months; starting from 1st of October 2024):	0
Project website:	