Candidate supervisor's information summary form

Name and surname, degree, title: **Małgorzata Ziarno, prof. dr hab. inż.**	
Academic discipline/disciplines	Food Technology and Nutrition
Professional development (degrees and titles) in chronological order	• 1995 Professional title: Master of Science in Agricultural Engineering, Faculty of Food Technology, Warsaw University of Life Sciences (SGGW) • 1999 Degree of Doctor of Engineering in Agricultural Sciences, in the field of Food Technology and Nutrition, Faculty of Food Technology, Warsaw University of Life Sciences (SGGW) • 2009 Degree of Doctor Habilitatus in Agricultural Sciences, in the discipline of Food Technology and Nutrition, Faculty of Food Sciences (currently the Institute of Food Sciences), Warsaw University of Life Sciences (SGGW) • 2025 State title of Professor of Agricultural Sciences, in the discipline of Food Technology and Nutrition, Institute of Food Sciences, Warsaw University of Life Sciences (SGGW)
Most important publications/ patents in the last 3 years (maximum 10)	1. Mituniewicz-Małek, A.; **Ziarno, M.;** Dmytrów, I.; Szkolnicka, K. Survivability of Probiotic Microflora in Fermented and Non-Fermented Mare's Milk: A Comparative Study. Appl. Sci. 2025, 15, 862. https://doi.org/10.3390/app15020862 2. **Ziarno, M.;** Zaręba, D.; Kowalska, E.; Florowski, T. The Effect of Varying Oat Beverage Ratios on the Characteristics of Fermented Dairy–Oat Beverages. Appl. Sci. 2025, 15, 3219. https://doi.org/10.3390/app15063219 3. Kozłowska, M.; **Ziarno, M.;** Zawada, K.; Kowalska, H.; Derewiaka, D.; Chobot, M.; Ścibisz, I. Evaluation of Some Quality Parameters of Pumpkin Seeds and Oil After Roasting with Marjoram. Foods 2025, 14, 172. https://doi.org/10.3390/foods14020172 4. **Ziarno M.,** Zaręba D., Ścibisz I., Kozłowska M. 2024. In Vitro Cholesterol Uptake by the Microflora of Selected Kefir Starter Cultures. Life 2024, 14, 1464. https://doi.org/10.3390/life14111464 5. Zaręba D., **Ziarno M.** 2024. Tween 80™-Induced Changes in Fatty Acid Profile of Selected Mesophilic Lactobacilli. Acta Biochim. Pol. https://doi.org/10.3389/abp.2024.13014 6. **Ziarno M,** Cichońska P, Kowalska E, Zaręba D. 2024. Probiotic-Enriched Ice Cream with Fermented White Kidney Bean Homogenate: Survival, Antioxidant Activity, and Potential for Future Health Benefits. Molecules; 29(13), 3222. https://doi.org/10.3390/molecules29133222 7. Cacak-Pietrzak G., Sujka K., Księżak J., Bojarszczuk J., **Ziarno M.,** Studnicki M., Krajewska A., Dziki D. 2024. Assessment of Physicochemical Properties and Quality of the Breads Made from Organically Grown Wheat and Legumes. Foods, 13, 1244. https://doi.org/10.3390/foods13081244 8. Cichońska P., Kostyra E., Piotrowska A., Ścibisz I., Roszko M., **Ziarno M.** 2024. Enhancing the Sensory and Nutritional Properties of Bean-based and Lentil-based Beverages through Fermentation and Germination. LWT, 116140, https://doi.org/10.1016/j.lwt.2024.116140 9. **Ziarno M.,** Zaręba D., Ścibisz I., Kozłowska M. 2024. Texture and water holding capacity of oat drinks fermented with lactic acid bacteria, bifidobacteria and Propionibacterium. International Journal of Food Properties, 27 (1), 106-122. https://doi.org/10.1080/10942912.2023.2294704 10. Ścibisz I.; **Ziarno M.** 2023. Effect of yogurt addition on the stability of anthocyanin during cold storage of strawberry, raspberry, and blueberry smoothies. Foods, 12(20), 3858; https://doi.org/10.3390/foods12203858
Experience in work with doctoral students (defended doctoral dissertations, initiated doctoral procedures) in chronological order	• Doctoral thesis supervisor: MSc Eng. Dorota Zaręba. Warsaw University of Life Sciences (SGGW); Institute of Food Sciences, defense held on July 9, 2012 – with honors. • Doctoral thesis supervisor: MSc Eng. Joanna Żylińska. Warsaw University of Life Sciences (SGGW); Institute of Food Sciences, defense held on October 21, 2016.

	• Doctoral thesis supervisor: MSc Eng. Patrycja Cichońska. Warsaw University of Life Sciences (SGGW); Institute of Food Sciences, defense held on February 18, 2025. • Doctoral thesis supervisor: MSc Eng. Ewa Kowalska. Warsaw University of Life Sciences (SGGW); Institute of Food Sciences, planned defense date: end of 2026.
Achievements in the area of projects/grants (in the last 5 years)	• 2019 – 2020 Development of a production technology for fermented plant-based beverages constituting an alternative to dairy yogurts. Project number POIR.01.03.01-00-0086/17. • 2020 – 2023 Conducting research on a novel type of butter with improved spreadability parameters and an extended shelf life. ARiMR (Agency for Restructuring and Modernisation of Agriculture) contract number 00012.DDD.6509.00036.2019.05. • 2022 – 2024 Development of a UHT milk production process to reduce milk microflora and its impact on the final product, while simultaneously minimizing negative environmental impact, confirmed by the reduction of the carbon footprint for the final product. European Agricultural Fund for Rural Development, Rural Development Programme for 2014 – 2020, Measure 16 "Cooperation".
Subject area of the research project for which the candidate student is being recruited	**Project Title:** Interactions between cocoa polyphenols and microencapsulated multistrain probiotics: effects on antioxidant activity and probiotic viability during in vitro gastrointestinal digestion. **Research Overview:** This research explores the intersection of biotechnology and functional food design, specifically investigating interactions between cocoa polyphenols and multistrain probiotics. The study addresses a key nutritional challenge: ensuring bioactive stability and probiotic survival during gastrointestinal transit. By providing a mechanistic understanding of how cocoa compounds modulate probiotic functionality, the project aims to develop next-generation synbiotic delivery systems. These findings will offer enhanced health-promoting properties with significant applications for the functional food industry. **Project Title:** Systemic analysis of food-derived probiotics in terms of safety, functionality, and human nutrition. **Research Overview:** The research focuses on a systemic analysis of food-derived probiotics, integrating several scientific domains to evaluate their safety, functionality, and impact on human nutrition. The project aims to develop a comprehensive framework linking clinical evidence regarding long-term safety in at-risk populations with genomic architecture, protein-level functional inference, food-matrix metabolic modeling, and ecological mechanisms of pathogen suppression. **Project Title:** Development of technology for hybrid (milk-plant) fermented beverages using underutilised legumes. **Research Overview:** This research project explores the interface of dairy science and plant biotechnology to develop sustainable, hybrid fermented beverages. The study encompasses the bioprocessing of underutilised legumes to enhance nutrient bioavailability, the analysis of microbial kinetics in hybrid matrices, and the use of enzymatic treatments to ensure structural stability. Ultimately, the work involves a comprehensive assessment of the products' health benefits, rheology, and sensory appeal to create high-quality, "clean label" functional foods.
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