

Candidate supervisor's information summary form

maximum 2 pages – it should be a summary of most important achievements

Name and surname, degree, title: dr hab. Katarzyna Bączek, assistant professor	
Discipline/ disciplines of science	Agriculture and horticulture
Professional development (degrees and titles) in chronological order	MSc degree (2002) PhD in agricultural sciences (2010) Postdoctoral degree (habilitation) in agricultural sciences in the field of horticulture (2018)
Most important publications/patens over the last 3 years (maximum 10)	<p>The most important publications (2019-2021):</p> <ol style="list-style-type: none"> 1. KOSAKOWSKA O., WĘGLARZ Z., PIÓRO-JABRUCKA E., PRZYBYŁ J.L., KRAŚNIEWSKA K., GNIEWOSZ M., BĄCZEK K. 2021. Antioxidant and antibacterial activity of essential oils and hydroethanolic extracts of Greek oregano (<i>O. vulgare</i> L. subsp. <i>hirtum</i> (Link) Ietswaart) and common oregano (<i>O. vulgare</i> L. subsp. <i>vulgare</i>). <i>Molecules</i> 26: 988 (IF=3.060) 2. SZYMBORSKA-SANDHU I., PRZYBYŁ J.L., KOSAKOWSKA O., BĄCZEK K., WĘGLARZ Z. 2020. Chemical Diversity of Bastard Balm (<i>Melittis melisophyllum</i> L.) as Affected by Plant Development. <i>Molecules</i>: 25(10): 2421 (IF=3.060) 3. SZYMBORSKA-SANDHU I., PRZYBYŁ J.L., PIÓRO-JABRUCKA E., JĘDRZEJUK A., WĘGLARZ Z., BĄCZEK K. 2020. Effect of shading on development, yield and quality of bastard balm herb (<i>Melittis melisophyllum</i> L.). <i>Molecules</i> 25: 2142 (IF=3.060) 4. BĄCZEK K., WIŚNIEWSKA M., PRZYBYŁ J.L., KOSAKOWSKA O., WĘGLARZ Z. 2019. Arbuscular mycorrhizal fungi in chamomile (<i>Matricaria recutita</i> L.) organic cultivation. <i>Industrial Crops and Products</i> 140: 111562 (IF=4.191) 5. BĄCZEK K., KOSAKOWSKA O., PIÓRO-JABRUCKA E., WĘGLARZ Z. 2019. Intraspecific variability of wild thyme (<i>Thymus serpyllum</i> L.) occurring in Poland. <i>Journal of Applied Research on Medicinal and Aromatic Plants</i> 12: 30-35 (IF=1.966) 6. BĄCZEK K., PRZYBYŁ J.L., KOSAKOWSKA O. WĘGLARZ Z. 2019. Impact of shading on selected developmental, physiological and chemical parameters of southern sweet-grass (<i>Hierochloe australis</i> (Schrad.) Roem. et Schult)". <i>European Journal of Horticultural Sciences</i> 84(2):99-105 (IF=0.726) 7. BĄCZEK K., KOSAKOWSKA O., GNIEWOSZ M., GIENKA I., WĘGLARZ Z. 2019. Sweet basil (<i>Ocimum basilicum</i> L.) productivity and raw material quality from organic cultivation. <i>Agronomy</i> 9: 279 (IF=2.259) 8. POBIEGA K., KRAŚNIEWSKA K., PRZYBYŁ J.L., BĄCZEK K., ŻUBERNIK J., WITROWA-REJCHERT D., GNIEWOSZ M. 2019. Growth biocontrol of foodborne pathogens and spoilage microorganisms of food by polish propolis extracts. <i>Molecules</i> 24: 2965 (IF=3.060) 9. MATUSIEWICZ M., BĄCZEK K., KOSIERADZKA I, NIEMIEC T., GRODZIK M., SZCZEPANIAK J., ORLIŃSKA S., WĘGLARZ Z. 2019. Effect of juice and extracts from <i>Saposhnikovia divaricata</i> root on the colon cancer cells Caco-2. <i>International Journal of Molecular Sciences</i> 20: 4526 (IF= 4.183) 10. KOSAKOWSKA O., WĘGLARZ Z., BĄCZEK K. 2019. Yield and quality of 'Greek oregano' (<i>Origanum vulgare</i> L. subsp. <i>hirtum</i>) herb from organic production system in temperate climate. <i>Industrial Crops and Products</i> 141: 111782 (IF=4.191).

Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened) in chronological order	Supervisor of doctoral dissertation, defended in 2021. Izabela Szymborska-Sandhu. Developmental and chemical characteristics of bastard balm (<i>Melittis melissophyllum</i> L.) in the conditions of its cultivation.
Project/grants achievements (from the last 10 years)	<p>Managing of 10 projects, including:</p> <ul style="list-style-type: none"> • 1 National Science Center (NCN) project (2011-2014 own research project) • 9 projects commissioned by the Ministry of Agriculture and Rural Development (7 – in the field of organic farming, 2 - in the field of plant genetic resources protection), including 2 currently carried out. <p>Manager of 3 implementation projects (KZL) commissioned by Herbatpol Lublin, including 1 currently carried out.</p> <p>The main contractor of 10 projects, including:</p> <ul style="list-style-type: none"> • 1 NCBiR project (2007-2010 research and development project) • 1 PARP project (2018 research project) • 1 NCN project (2008-2010 research project) • 7 projects commissioned by the Ministry of Agriculture and Rural Development (5 in the field of organic farming, 1 in the field of biological progress in plant production, 1 in the field of plant genetic resources protection) <p>All of the above projects concern / concerned wild-growing and cultivated medicinal and aromatic plant species.</p>
Topic – research problem – for which the candidate supervisor seeks a doctoral student	<p>The research will concern stinging nettle (<i>Urtica dioica</i> L.). It is a common plant in Poland, preferring synanthropic sites. Every year, from wild-growing plants of this species large amounts of herb and leaves are collected for the purposes of food and phytopharmaceutical industries, as well as underground organs which are used for medicinal purposes. Due to the rapidly growing quality requirements for the above-mentioned raw materials, including their standardization, as well as the dramatically declining number of herb collectors, the introduction of singing nettle into cultivation seems to be necessary in the near future. Although it is a commonly known plant, so far it has been the subject of relatively little research, concerning mainly plant development, and in the field of agrotechnics - simple methods of establishing plantations and fertilizing.</p> <p>The aim of the proposed research is to determine the phenotypic diversity of nettle. Under the conditions of cultivation, its genetic, developmental and chemical diversity will be determined, important both from the utilization and cognitive point of view. Selected populations and clones of nettle will be subjected to detailed investigations on their development, including the dynamics of raw materials mass increment (over a period of at least 2 years) and the accumulation of chemical compounds responsible for biological activity.</p>
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