Candidate supervisor's information summary form

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

Name and surname, degree, title: Katarzyna Kowalczyk PhD Prof. SGGW	
Discipline/ disciplines of science	Agriculture and horticulture
Professional development (degrees and titles) in chronological order	2001 PhD in agricultural sciences in horticulture 2019 Associate Professor in discipline of science agriculture and horticulture 2021 the position of professor at SGGW
Most important publications/patens over the last 3 years (maximum 10)	Cetner M. , Kalaji M., Borucki W., **Kowalczyk K**., 2020. Phosphorus deficiency affects the I-step of chlorophyll a fluorescence induction curve of radish. Photosynthetica, vol. 58, nr SPECIAL ISSUE, s.671-681. DOI:10.32615/ps.2020.015 **Kowalczyk K**., Olewnicki D., Mirgos M., Gajc-Wolska J., 2020: Comparison of selected costs in greenhouse cucumber production with LED and HPS supplemental assimilation lighting, Agronomy, E-ISSN:2073-4395, Vol:10, s. 1-14, DOI:10.3390/agronomy10091342. **Kowalczyk K**., Gajc-Wolska J., Mirgos M., Geszprych A., Kowalczyk W., Sieczko L., Niedzińska M., Gajewski M., 2020.: Mineral nutrients needs of cucumber and its yield in protected winter cultivation, with HPS and LED supplementary lighting, SCIENTIA HORTICULTURAE, ISSN:0304-4238, E-ISSN:1879-1018, Vol:265, s. 1-8, DOI:10.1016/j.scienta.2020.109217. Sobczak A., **Kowalczyk K**., Gajc-Wolska J., Kowalczyk W., Niedzińska M., 2020.: Growth, yield and quality of sweet pepper fruits fertilized with polyphosphates in hydroponic cultivation with LED lighting, Agronomy, E-ISSN:2073-4395, Vol:10, s. 1560, DOI:10.3390/agronomy10101560. Łaźny R., Mirgos M., Przybył J., Nowak J., Kunka M., Gajc-Wolska J., **Kowalczyk K.,** 2021. Effect of re-used lignite and mineral wool growing mats on plant growth, yield and fruit quality of cucumber and physical parameters of substrates in hydroponic cultivation, Agronomy-Basel, ISSN:2073-4395, E-ISSN:2073-4395, Vol:11, s. 1-14, DOI:10.3390/agronomy11050998. Sobczak A., Sujkowska-Rybkowska M., Gajc-Wolska J., Kowalczyk W., Borucki W., Kalaji M., **Kowalczyk K**., 2021. Photosynthetic efficiency and anatomical structure of pepper leaf (Capsicum annuum L.) transplants grown under High-Pressure Sodium (HPS) and Light-Emitting Diode (LED) supplementary lighting systems, Plants-Basel, ISSN:2223-7747, E-ISSN:2223-7747, Vol:10, s. 1-14, DOI:10.3390/plants10101975. Gajc-Wolska J., **Kowalczyk K.,** Przybysz A., Mirgos M., Orliński P., 2021. Photosynthetic efficiency and yield of cucumber (Cucumis sativus L.) grown under HPS and LED lighting in autumn–winter cultivation, Plants, E-ISSN:2223-7747, Vol:10, s. 1-14, DOI:10.3390/plants10102042. Elmardy Naif Ali, Yousef Ahmed F., Lin Kui, Zhang Xiwen, Moaaz Muhammad Ali, Kalaji Hazem M., **Kowalczyk Katarzyna**, Xu Yong. Photosynthetic performance of rocket (Eruca sativa. Mill.) grown under different regimes of light intensity, quality, and photoperiod PLoS ONE,

	2021, vol. 16, nr 9, s.1-19, Numer artykułu:e0257745. DOI:10.1371/journal.pone.0257745. Kusaka M., Kalaji H.M., Mastalerczuk G., Dąbrowski P., **Kowalczyk K.**. 2021. Potassium deficiency impact on the photosynthetic apparatus efficiency of radish, Photosynthetica, , vol. 59, nr 1, s.127-136. DOI:10.32615/ps.2020.077. Łaźny R., Mirgos M., Przybył J., Niedzińska M., Gajc-Wolska M., Kowalczyk W, Nowak J.S., Kalisz St. **Kowalczyk K**., 2022. Lignite substrate and EC modulates positive eustress in cucumber at hydroponic cultivation. Agronomy, vol. 12, nr 3, s.1-19, Article no. 608. DOI:10.3390/agronomy12030608
Experience in work with doctoral students (defended doctoral dissertations, doctoral programmes opened) in chronological order	Assistant supervisor of completed doctoral thesis Kusaka Magdalena: Functioning of photosynthetic apparatus of radish (Raphanus sativus L. var. sativus) grown under conditions of deficiency of selected mineral components, Institute of Biology, Date of defence: 19-11-2020 PhD student Radosław Łaźny M.Sc.
Project/grants achievements (from the last 10 years)	Head of the research project (own) Nr N N310 089836 "Yield and quality of endive (Cichorium endivia L.) in hydroponic cultivation considering salt stress" 2009-2012 Main research project investigator (own) No N310 728640 "Effect of 1-MCP and modified atmosphere on the quality and post-harvest stability of small-fruited tomato fruits grown on rockwool and coconut fibre. 2011-2014 Principal investigator in FP 7 REGPOT programme "Warsaw Plant Health Initiative" Grant agreement no: 286093 WP 3 - Upgrade of Horticulture Team realisation 01.11.2011-31.10.2014 Main research project investigator in research commissioned by Philips Lighting B.V 506-02-042600-M00038-99; 506-02-042600-M00565-99. Subject: Effect of illumination on growth and yield of cucumber under winter growing conditions first research term 20.01.2015 - 30.04.2016, second research term 19.11.2015 - 30.06.2016. Head of the research project "Effect of assimilation illumination with Plantalux LED lamps on growth, yield and fruit quality of greenhouse cucumber" Plantalux Ltd. (14.09.2020 - 30.06.2021). Head of the research project "Growth, yield and quality of lettuce in hydroponic cultivation using amino acid based growth stimulators" Biopharmacotech Sp. z o.o. (15.07.2020 -15.01.2021). Head of the research project "Effect of L-Amino + Ca preparation on the yield and quality of pepper fruit in hydroponic cultivation" Biopharmacotech Sp. z o.o (26.02.2020 - 15.12.2020). Head of the research project "Effect of assimilation lighting on tomato fruit yield in autumn-winter cultivation" Plantalux Sp. z o.o (15.11.2019 - 30.06.2020). Main research project investigator, Subcontract to carry out R&D work in the POIR project "Development of technology for efficient commodity propagation and acclimatisation of potato, artichoke, rhubarb, coneflower and hellebore using selective LED light colours and associated nutrient solution compositions to obtain high

	quality material for cultivation". NORWA PLANTS Sp. z o.o. (01.04.2020 - 30.06.2021). Main research project investigator "Increase in market competitiveness through the implementation of product, technological and marketing innovation related to the production of horticultural tomatoes in Dziecinów", under "Cooperation" in the Rural Development Programme 2014-2020" ARiMR under the Cooperation measure of the Rural Development Programme 2014-2020 (12.06.2019- 11.06.2021).
Topic – research problem – for which the candidate supervisor seeks a doctoral student	Subjects related to mineral plant nutrition and growing factors in hydroponic technologies to optimize yield and quality of different vegetable species: new, universal and biodegradable substrates for hydroponic cultivation; optimization of growing conditions and the impact of environmental stresses using EC medium and LED assimilation lighting, on the yield and quality of vegetables in year-round cultivation; application in production of tools for diagnosing stress in plant cultivation using, among others, the measurement of chlorophyll fluorescence; research on the impact of the use of plant activators from the group of mineral-organic preparations in vegetable cultivation.
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