

Summary Specification of Scientific Accomplishments of a Thesis Supervisor Candidate
maximum 2 pages - it should be a synthesis of the most important elements of accomplishments

Name and surname, degree, scientific title: dr hab. Mariusz Lewandowski	
Scientific discipline/s	Agriculture and horticulture
Professional development (scientific degrees and titles) chronologically	2015 - Doctor Habilitation in agriculture, Warsaw University of Life Sciences (WULS) 2000 - PhD of agricultural sciences in the scope of horticulture (WULS) 1995 - MSc, (WULS)
Most important publications/patents from the last 3 years (max. 10)	<p>Druciarek T., Lewandowski M., & Tzanetakis I. E. 2023. Identification of a second vector for rose rosette virus. <i>Plant Disease</i>, in press.</p> <p>Szudarek-Trepto N., Kaźmierski A., Skoracka A., Lewandowski M., Dabert J. 2022. Molecular Phylogeny Supports the Monophyly of the Mite Supercohort Eupodides (Acariformes: Trombidiformes) and Greatly Coincides with Traditional Morphological Definition of the Taxon. <i>Annales Zoologici</i>, 72(4):757-786.</p> <p>Skoracka A., Laska A., Radwan J., Konczal M., Lewandowski M., Puchalska E., Karpicka-Ignatowska K., Przychodzka A., Raubic J., Kuczyński L. 2022. Effective specialist or jack of all trades? Experimental evolution of a crop pest in fluctuating and stable environments. <i>Evolutionary Applications</i>, 15:1639–1652.</p> <p>Slazak B., Jędrzejska A., Badyra B., Sybilska A., Lewandowski M., Kozak M., Kapusta M., Shariatgorji R., Nilsson A., Andrén P.E., Göransson U., Kielkiewicz M. 2022. The involvement of cyclotides in mutual interactions of violets and the two-spotted spider mite. <i>Scientific Reports</i>, 12:1914.</p> <p>Laska A., Przychodzka A., Puchalska E. Lewandowski M., Karpicka-Ignatowska K., Skoracka A. 2022. Mechanisms of dispersal and colonisation in a wind-borne cereal pest, the haplodiploid wheat curl mite. <i>Scientific Reports</i>, 12(1):551. Puchalska E., Kozak M., Lewandowski M. 2021. Coniferous plants as potential reservoirs of phytoseiid mites (Parasitiformes: Phytoseiidae) in Poland. <i>Systematic and Applied Acarology</i>, 26(7): 1374-1398.</p> <p>Mansouri F. Richert-Poggeler K.R., Lewandowski M., Rysanek, P. 2021. Transmission characteristics of allexiviruses by the eriophyid mite, <i>Aceria tulipae</i> (Keifer) (Acar: Eriophyidae) from naturally mixed infected garlic (<i>Allium sativum</i> L.). <i>European Journal of Plant Pathology</i>, 160(4): 789-796.</p> <p>Laska A., Magalhães S., Lewandowski M., Puchalska E., Karpicka-Ignatowska K., Radwańska A., Meagher S., Kuczyński L., Skoracka A. 2021. A sink host allows a specialist herbivore to persist in a seasonal source. <i>Proc. R. Soc. B</i> 288(1958): 20211604.</p> <p>Druciarek T., Lewandowski M., Tzanetakis I. 2021. Molecular phylogeny of Phyllocoptes associated with roses discloses the presence of a new species. <i>Infection, Genetics and Evolution</i>, 95, 105051.</p> <p>Labudda, M., Tokarz, K., Tokarz, B. Muszyńska E., Gietler M., Górecka M., Różańska E., Rybarczyk-Płońska A., Fidler J., Prabucka B., Dababat A.A., Lewandowski M. 2020. Reactive oxygen species metabolism and photosynthetic performance in leaves of <i>Hordeum vulgare</i> plants co-infested with <i>Heterodera filipjevi</i> and <i>Aceria tosichella</i>. <i>Plant Cell Reports</i> 39, 1719–1741..</p> <p>Dąbrowska E., Lewandowski M., Koczkodaj S., Paduch-Cichal E. 2020. Transmission of Garlic virus B, Garlic virus C, Garlic virus D and Garlic virus X by <i>Aceria tulipae</i> (Keifer) in leek. <i>European Journal of Plant Pathology</i>, 157:215–222.</p>
Experience in work with PhD students (defended dissertations, initiated dissertation procedures), chronologically	A PhD advisor of Tobiasz Druciarek, doctoral degree obtained on January 4, 2017. Currently, advisor of three PhD candidates.

<p>Project/grant accomplishments (from the last 10 years)</p>	<p>1) Understanding the molecular and ecological interactions between viruses and eriophyoid mites (National Science Centre, Polonez Bis-1, grant no. 2021/43/P/NZ9/03267, 2022-2024, mentor)</p> <p>2) Evolution of the niche breadth in biotic and abiotic dimensions under constant and fluctuating environmental conditions (National Science Centre grant no. 2021/41/B/NZ8/01703, 2022-2026, investigator)</p> <p>3) A bidirectional selection experiment to test the evolution of specialization and dispersal in the invasive wheat curl mite, <i>Aceria tosichella</i> (National Science Centre grant no. 2016/21/B/NZ8/00786, 2017-2022, investigator)</p>
<p>Theme scope - research problem - for the solving of which the PhD student is sought</p>	<p>Eriophyoid mites (Acari: Eriophyoidea) are a group of virus vectors for which the mechanisms of virus-vector-plant interactions are poorly understood. At least 30 viruses are now known to be transmitted by these microscopic mites. Among them, the genus <i>Emaravirus</i> (family <i>Fimoviridae</i>; order <i>Bunyavirales</i>) is an emerging group comprising over 20 classified and putative species with a worldwide distribution and economic impact. One of the most well-known emaraviruses is European mountain ash ringspot-associated emaravirus (EMARaV, <i>Emaravirus sorbi</i>), transmitted by eriophyoid mites. The virus can infect rowans, chokeberries, apples and pears.</p> <p>Specific aims of this research:</p> <ul style="list-style-type: none"> • Identification of the EMARaV vector, <i>i.e.</i>, through transmission tests for species and genotypes of mites prevalent on infected plants. • Development of a sensitive and universal RT-PCR assay that would effectively identify plants infected with EMARaV. • Better understanding of the host range of EMARaV, through vector-based transmission tests and mechanical inoculation of plants. • Investigation whether EMARaV replicates in the vector's body. • Investigation of the possibility of vertical and transstadial transmission of EMARaV by mites. <p>Results will bring us closer to a better understanding of interactions between EMARaV, vector and hosts. This research aims to mitigate the impact of viral plant pathogens on productivity and sustainability in forestry and horticulture.</p>
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