# WOJCIECH ŚWIĘCICKI

Wojciech Krzysztof Święcicki was born on 16 March 1950 in Poznań. After graduating in 1967 from Karol Marcinkowski No. 1 Secondary School, he enrolled at the Faculty of Agriculture of the Agricultural Academy in Poznań, where he completed his studies in 1972 and obtained the degree of Master of Science in Agricultural Engineering. On 21 March 1977, the Scientific Council of the Agricultural Institute of the University of Technology and Agriculture in Bydgoszcz awarded him the degree of Doctor of Agricultural Sciences in agronomy, based on a doctoral dissertation *Response of selected botanical forms and cultivars of field pea to varying soil moisture levels*. His doctoral supervisor was Professor Jerzy Sypniewski. On 14 June 1984, the Scientific Council of the Institute of Plant Breeding and Acclimatization in Radzików awarded him the degree of Doctor Habilitated of Agricultural Sciences in genetics and plant breeding, on the basis of his dissertation *Studies on Mutations in Pea. Selection, Classification and Genetic Testing of Mutants*. He received the title of Professor of Agricultural Sciences in 1991. By decision of the Minister of Agriculture, he was appointed Associate Professor in 1987, then by decision of the President of the Polish Academy of Sciences he was appointed Associate Professor in 1991, and full Professor in 1992.

Since 1972, Wojciech Święcicki has worked continuously as a plant breeder at Poznań Plant Breeding, at the Wiatrowo Plant Breeding Station. From 1977 to 1980, he taught vocational subjects at the Agricultural Secondary School in Wągrowiec. Between 1973 and 1984, he headed the Pea Breeding Laboratory, and from 1984 to 1994 he served as Chief Breeder for Legume Crops. Between 1986 and 1992, he also headed the Documentation Laboratory in the Department of National Genetic Resources of IHAR in Radzików.

In October 1991, at the initiative of Professor Ignacy Wiatroszak, Director of the Institute of Plant Genetics of the Polish Academy of Sciences (PAS), he joined the Institute of Plant Genetics, first as Deputy Director for General Affairs from 1991 to 1993, and then as Deputy Director for Scientific Affairs from 1993 to 2003. From October 2003 until the end of December 2011, he served as Director of the Institute of Plant Genetics PAS. During this period, the number of professors at the Institute increased to 20, the Institute obtained the right to confer the habilitation degree in 2009, and in two consecutive national evaluations it ranked first in 2006 and third in 2010 among Category I of scientific institutions of the Ministry of Science and Higher Education. At the same time, between 1992 and 2022, he headed the Mutagenesis Laboratory from 1992 to 1999, the Genome Analysis Laboratory from 2000 to 2012, the Department of Genomics from 2013 to 2014, and the Comparative Genomics of Legume Plants Group from 2015 to 2022.

He completed several scientific fellowships abroad, including the International Course on Plant Breeding in Wageningen, the Netherlands in 1977, an FAO fellowship at the Weibullsholm Plant Breeding Institute in Sweden in 1979, and an FAO fellowship at the Cornell University Research Station in Geneva, USA in 1981.

During the first stage of his scientific and creative work, carried out at the Wiatrowo Plant Breeding Station between 1972 and 1991, he focused on the breeding of pea (*Pisum sativum* L.). He was co-author of nine registered cultivars, including cultivars representing new utility types, and he also introduced new crop forms such as Perko, a winter, tetraploid forage brassica, and a fodder, high yielding, dwarf form of anthocyanin pea useful for cultivation on light soils. He transformed the systematically expanded breeding source materials into a collection of the genus *Pisum*, as part of a national programme for the conservation of crop plant genetic resources, ultimately creating one of the richest *Pisum* gene banks in the world, with more than 3,000 accessions. At the same time, he conducted fundamental research on issues essential for breeding progress, including new ideotypes of cultivars, inheritance of yield structure traits and protein content, new selection techniques, linkage

between genes controlling agronomic traits and selection markers, expansion of natural variability, and new methods of cultivar identification. During this period, he also initiated a long standing collaboration with scientists from the Institute of Plant Genetics PAS in Poznań, especially Professor M. Surma and Professor Z. Kaczmarek, in the field of quantitative genetics. His scientific achievements formed the basis for the Scientific Council of IHAR to apply in 1989 to the President of the Republic of Poland for the conferment of the title of Professor. In 1991, he was among the first group of professors nominated by a President of Poland elected in general voting.

After moving to the Institute of Plant Genetics PAS in 1991, he retained his principal research interests, namely the breeding and genetics of legume plants, with particular emphasis on genetic improvement, chromosome mapping, and the collection, evaluation, and conservation of genetic resources. He also remained active as a plant breeder, continuing the work of his father, Dr Wiktor Święcicki, long time chief breeder and Director of Poznań Plant Breeding. He pursued the idea of interdisciplinary cooperation on high protein crops — from the conservation of biodiversity, through genetic research, to the use of plants in feed and food. The combination of the scientific expertise of the Institute of Plant Genetics PAS and the practical breeding experience of PHR often became a source of new research ideas, while the results could be rapidly applied in practice.

Among Professor W. Święcicki's most important achievements are: 1) the establishment of the national *Pisum* gene bank and a database of the world's *Lupinus* gene banks; 2) the discovery and description of two new lupin species, *L. anatolicus* Swiec. et Swiec. and the synthetic *L. x hispanicoluteus* Swiec. et Swiec.; 3) co-authorship of five successive *Pisum* chromosome maps, including the so-called reference map, published in *Genetic Maps* in Cold Spring Harbor, USA, in 1993, the development of rules for mapping and genetic terminology in *Pisum*, and the selection of more than 30 new mapped genes, including the *det* gene controlling determinate growth and the *Orc* gene responsible for increased carotenoid synthesis, as well as an intragenic map of heteroalleles at the *Orc* locus; 4) the use of qualitative alkaloid composition analysis for the identification of *Lupinus* species; 5) studies on the inheritance of high protein content and its relationship with yield, combined with the development of the half seed technique for breeding high protein pea forms; 6) determination of the genome size of species within the genera *Pisum* and *Lupinus* using flow cytometry; and 7) demonstration of the gene position effect and the dependence of gene expression from the genotypic background.

His plant breeding work resulted in the co authorship of 29 pea cultivars and 4 cultivars of yellow and white lupin. Some of these cultivars, awarded Gold Medals at Agricultural Fairs, represented significant breeding progress and introduced new ideotypes, including short stemmed, afila, determinate, seed, and fodder forms, and occupied a substantial proportion of the cultivated area of these species in Poland.

Professor Święcicki's scientific output includes 384 publications in Polish and international journals, including 125 original research papers, 82 review papers, 15 monographs and books, 7 popular science articles, and 155 communications and abstracts. Among his review works, special mention should be made of two studies co-authored with Professor M. Surma: *Plant Breeding — A Field of Agronomy or Natural Philosophy* (*Zesz. Probl. Post. Nauk Roln.*, 2002) and *The Big Five in the World of Plants — The Species that Have Changed the Course of History* (*Polish Journal of Agronomy*, 2021). Other important publications include *The Catalogue of Pisum Genes* (2019), two editions of *Who is Who in Polish Plant Breeding* (1998, 2009), and *Lineages of Polish Plant Breeders at the Beginning of the 21st Century* (*Hodowla Roślin i Nasiennictwo*, 2011). He supervised 15 doctoral dissertations. He also made major contributions to the dissemination of research results in master's and postgraduate teaching, for example as a lecturer in programmes for foreign students organized by IAEA/FAO and the University of Silesia in Katowice. During the implementation of national Multiannual Programmes, he delivered more than 100 lectures at Agricultural Advisory Centres.

He organized numerous scientific conferences, including the 5th Conference on Mutagenesis in 1989, the conference “Genetics and Taxonomy” in 1999, the 5th European Conference on Grain Legumes in 2004, and the 16th EUCARPIA Symposium on Genetic Resources in 2002. He was also the initiator and co-organizer of three series of national conferences: “Plant Breeding”, “Genetic Resources of Crop Plants”, and “Problems and Strategies for the Use of Legume Plants”.

Professor W. Święcicki led many national research projects, including two KBN funded projects carried out in 2000 to 2002 and 2003 to 2006, two NCBR projects, Cornet in 2014 to 2015 and Segenmas in 2015 to 2018, in which he served as leader of research tasks, as well as seven projects of the Ministry of Agriculture and Rural Development concerning biological progress between 1993 and 2020. He also served as head of Area II, devoted to the genetics and breeding of legume plants, in two Government Multiannual Programmes carried out in 2011–2015 and 2016–2020, both focused on domestic feed protein production and national protein security. The results of these programmes demonstrated the possibility of reducing imports of feed protein in favour of domestic raw materials and saving approximately PLN 4 billion per year. He also led international projects funded by the Maria Skłodowska-Curie US Poland Fund in 1995–1998, the Department of Agriculture of Western Australia in 2000–2004, and acted as task leader in the 6th EU Framework Programme, Grain Legumes, in 2004–2008.

Professor W. Święcicki has been a corresponding member of the Polish Academy of Sciences since 2007, and a full member since 2019. He has served, or continues to serve, on numerous scientific councils and in scientific organizations, including the scientific councils of IHAR from 1985 to 2016, the Botanical Garden of the Polish Academy of Sciences since 1992, the Institute of Plant Genetics PAS since 1993, and the Institute for Agricultural and Forest Environment PAS from 2009 to 2023, where he chaired the Council from 2015 to 2023. He was also a member of the Consultative Council and the Commission for Registration of Forage Plant Varieties at COBORU, a member of the Committee of Plant Physiology, Genetics and Breeding PAS, and later the Committee of Agronomy PAS, in which he has served since 1987, including five terms as Vice-Chair. He was President of the Association of Creators of Crop Plant Varieties from 1996 to 1999, and Vice-President from 2002 to 2005, Chair of the Polish Lupin Society from 2003 to 2006, Chair of the Council for the Protection of Genetic Resources of Cultivated Plants since 1996, Chair of the Stefan Barbacki Award Committee in Plant Genetics since 1994, and a member of the M. Oczapowski Medal Committee since 2019. Internationally, he served as Vice-President of the European Association for Grain Legume Research / AEP from 2001 to 2004, a member of its scientific committee from 2004 to 2007, and is now an honorary member. He was also a board member of the Legume Society from 2011 to 2014, of EUCARPIA from 1996 to 2008, and chaired its Oil and Protein Crops Section from 2001 to 2006. He was a founding member of the European Federation of Genetic Societies, a board member of the Pisum Genetics Association and the Pisum Genome Committee from 1984 to 2015, and a board member of the International Lupin Association from 1996 to 2002. He also served as an IAEA/FAO expert in plant breeding and led two scientific missions to Kinshasa, Congo, in 1986 and 1987, worked as an expert for the European Cooperative Programme for Plant Genetic Resources, acted as a consultant in pea breeding for foreign companies, and advised on parliamentary legislation, including acts on seed production, animal feed, and the use of domestic protein.

He was a member of the editorial boards of Plant Breeding published by Elsevier from 2001 to 2016, Pisum Genetics from 1984 to 2015, and Legume Perspectives / Grain Legumes from 2010 to 2019, and also served as Editor in Chief or editorial board member of Zeszyty Problemowe Postępów Nauk Rolniczych. He has been a member of the editorial board of Genetic Resources and Crop Evolution, published by Springer, since 1992.

For his scientific, research, and breeding achievements, he has received numerous honours and awards. These include the individual second degree award of the State Atomic Agency for *Studies on Mutations in Pea* in 1985, the award of the Piła Voivodeship for *Breeding New Varieties of Legume*

*Crops* in 1985, first place in the competition Engineer of the Year of the Piła Voivodeship in 1986, the first and second degrees of professional specialization awarded by the Minister of Agriculture in 1984 and 1986, the team award of the Polish Federation of Engineering Associations for *Breeding High Yielding Varieties of Pea, Lupins, and Serradella* in 1986, the Silver Cross of Merit in 1985, the Knight's Cross of the Order of Polonia Restituta in 2004, the medal Meritorious for Agriculture in 2009, the 40th Anniversary Medal of the University of Technology and Life Sciences in Bydgoszcz in 2009, the Medal of the Poznań University of Life Sciences for long standing cooperation and contribution to the development of the scientific staff of the Faculty of Agriculture in 2012, the Academia Rerum Rusticarum Posnaniensis Medal in 2012, the Officer's Cross of the Order of Polonia Restituta in 2014, and the M. Oczapowski Medal for outstanding contribution to the development of plant genetics in 2018. He also became an honorary member of the National Association of Producers of Rapeseed and Protein Crops in 2013 and an honorary member of the International Legume Society in 2019.

Following his retirement on 31 December 2022, he has continued to collaborate with the Legume Plant Genomics Group at the Institute of Plant Genetics PAS. Between 2023 and 2025, he supervised two doctoral graduates, published four original research papers, and authored eight conference presentations.

**Bibliography:**

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