



INSTITUTE OF PLANT GENETICS POLISH ACADEMY OF SCIENCES

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Recruitment for the Poznań Doctoral School of the Institutes of the Polish Academy of Sciences at the Institute of Plant Genetics, PAS in Poznań

Procedure no. 3/2025/IGR/PSD

INSTITUTION: Institute of Plant Genetics, PAS
CITY: Poznań
POSITION: Ph.D. student
POSITIONS AVAILABLE: 1
SCIENTIFIC DISCIPLINE: agriculture and horticulture/biological sciences
PUBLICATION DATE: 19.02.2025
APPLICATION DEADLINE: 19.03.2025
IPG PAS WEBSITE: <http://www.igr.poznan.pl/en/home-en>
PDS IPAS WEBSITE: <http://www.psd-ipan.ibch.poznan.pl/>

KEY WORDS: flavonols, systems biology, earliness per se, drought stress, Fusarium, combination of biotic and abiotic stresses

Research topic: The main goal of the project is to decipher the multifactorial stress-induced response of plants and its interconnection with anthocyanin content and biosynthesis. This study will offer new insights into the underlying mechanisms contributing to tolerance in cereal crops when confronted with a combination of multiple stressors. We will explore these mechanisms at various scales, encompassing the following: transcriptomic profiling, phenome analysis, and detailed histological and micromorphological observations. Furthermore, innovative phenotyping technologies will be used to gain a comprehensive understanding of the dynamic changes in root and shoot morphology and architecture associated with multifactorial stress conditions. In this project, we will conduct complex investigations to explore the role of anthocyanins in multiple stress-induced plant reactions. This exploration will encompass (i) Transcriptome analysis, (ii) Phenolic compounds profiling, (iii) Microdistribution of anthocyanin molecules, and (iv) Real-time phenotypic evaluation of plants varied in both phenology and anthocyanin contents.

Principal Investigator: dr hab. Piotr Ogradowicz

DESCRIPTION:

Place of employment: Cereal Phenomics Team, Institute of Plant Genetics Polish Academy of Sciences

Supervisor: dr hab. Piotr Ogradowicz

Goal of employment: implementation of OPUS27, no. 2024/53/B/NZ9/00756

Scope of research: (i) on composition and microscopy analysis of anthocyanin in plants subjected to both abiotic and biotic stresses in different plant tissues (shoots and roots); (ii) expression analyses of the selected genes associated with anthocyanin biology; (iii) NGS for the comparative transcriptomic analysis (RNA-Seq) to reveal the transcriptome of the selected barley tissues and test whether the treatments affect the expression of anthocyanin biosynthesis-related genes; (iv) evaluation of root architecture in different environmental conditions (control condition and multiple stress conditions); (v) high-throughput phenotyping to assess the level of traits linked to color pigments in the studied genotypes and evaluated root trajectory growth in stressed conditions.

Duties in project: Conducting of greenhouse and field experiments, post-harvest traits observations, samples collection, RNA extraction, samples extraction and purification for phenolic instrumental analysis, data interpretation, manuscripts preparation.

Requirements for the candidates:

1. MSc in area of agronomy, biology or biotechnology.
2. Experience in laboratory work in the field of plant biology and basics molecular biology techniques (e.g. DNA and RNA extraction from various plant materials, qualitative and quantitative assessment of DNA and RNA in isolates).
3. Knowledge of the basics of plant genomics, including plant reaction to abiotic and biotic stresses.
4. At least good knowledge of spoken and written English.
5. Independence and teamwork skills at the same time.
6. Additional scientific activity (publications, conference announcements and other forms of presenting results, participation in projects, research clubs, etc.) and organizational activity (eg organization of workshops, trainings, conferences) is welcome.
7. Basic knowledge of the Polish language – necessary for communication with the technical team during field experiments.

Additional information:

1. Research and doctoral theses shall be carried out within the OPUS27, no. 2024/53/B/NZ9/00756, entitled “Modulation of anthocyanin accumulation dynamics and its impact on root and shoot architecture of spring barley plants under multifactorial stress conditions”, funded by National Centre of Science.
2. PhD students shall receive a stipend in the gross amount of ca. 4270,50 PLN (3685,00 PLN net), for the period of 48 months.

Required documents:

1. Application for admission to PDS IPAS along with the consent for processing personal data upon the recruitment procedure and a statement on having acknowledged the regulations of recruitment for PDS IPAS, using form downloaded from <http://www.igr.poznan.pl/en/main-en/ids-en/poznan-doctoral-school>
2. Certified copy of the diploma confirming graduation or a certificate confirming graduation (in the case of diplomas issued by foreign higher education schools, diploma stipulated in article 326, section 2, passage 2 or article 327, passage 2 of the act of July 20th, 2018 – Law on Higher Education and Science (Journal of Laws of 2018, item 1668, as amended), entitling to apply for conferment of a doctoral degree in the state in where such a certificate was issued by the relevant higher education school. In the event when the candidate is not in possession of the aforementioned documents, he/she is obliged to submit them prior to admission to PDS IPAS. Additional information on foreign school diplomas are available at: <https://nawa.gov.pl/en/recognition/recognition-for-academic-purposes/applying-for-admission-to-doctoral-studies>

ATTENTION: at the stage of the recruitment process, there is no requirement to present documents certified by the apostille clause nor the requirement of nostrification of diplomas. These requirements must be met if the candidate is accepted.

3. Scientific CV encompassing track record of previous education and employment, information on involvement in scientific activities (participation in student research groups, attendance at scientific conferences, accomplished internships and training, awarded prizes and distinction) and list of publications.
4. Cover letter featuring a short description of research interests, achievements and justification for the intention to commence education at the doctoral school.
5. Certificates or other documents confirming the degree of proficiency in English, if the candidate is in possession of such materials.
6. Contact details of at least one, previous scientific supervisor or another researcher who is entitled to issue an opinion on the candidate.

Documents in the electronic form (in 1 pdf file) must be sent by e-mail to: psd@igr.poznan.pl putting in the title: **PhD student – Cereal Phenomics Team IPG PAS**

Submission deadline is 19.03.2025

Criteria for evaluation of candidates:

1. Candidate's research achievements, pursuant to the grades obtained in the course of studies, scientific publications, awarded scholarships and distinctions resulting from conducting scientific research or student activities or other achievements.
2. Candidate's scientific and professional experience, pursuant to participation in conferences, workshops, training sessions and internships, implementation of research and commercial projects, involvement in scientific trusts and societies, international and professional mobility, experience in other sectors, including industry.
3. Candidate's knowledge on plant and molecular biology.
4. Knowledge of the subject matter described in the recruitment advertisement.

The description of the recruitment process is stipulated in the Regulations of Recruitment for PDS IPAS. Following the recruitment procedure, the unadmitted candidates shall be informed on the number of points obtained at both stages.

For additional information please contact the Principal Investigator:

dr hab. Piotr Ogródowicz

e-mail: pogr@igr.poznan.pl

Announcement of the results: Within one month from the deadline for applications.

Information clause:

Pursuant to Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (hereinafter General Data Protection Regulation - GDPR), the Employer informs that:

- a) the administrator of personal data obtained, collected and processed as a part of the implementation of this agreement is the Institute of Plant Genetics, Polish Academy of Sciences, 34 Strzeszyńska str., 60-479 Poznań,
- b) contact with the inspector of personal data protection of the Institute of Plant Genetics, Polish Academy of Sciences in Poznań, is possible at the following e-mail address: iodo@igr.poznan.pl,
- c) the basis for data processing is art. 6 par. 1 letter b) and c) of the Regulation referred to above,
- d) all personal data provided to the Employer will be kept for the duration of the contract and for a period of 5 years after its completion,

- e) in relation to the personal data obtained, the Employer will not make decisions in an automated manner,
- f) The Employee is entitled to:
 - based on Article. 15 GDPR - access to personal data
 - based on Article. 16 GDPR - rectify personal data;
 - based on Article. 18 GDPR - request the administrator to restrict the processing of personal data, except to the cases referred to in art. 18 para. 2 GDPR;
 - the right to file a complaint to the President of the Office for Personal Data Protection, if the Employee considers that the processing of personal data by the Employer violates the provisions of the GDPR.