



AGRICULTURAL UNIVERSITY - PLOVDIV
4000 Plovdiv, Bulgaria 12, Mendeleev Blvd.
tel. +359/32/654300 www.au-plovdiv.bg



Research and Innovation Profile

General information

Description

**Title of the research entity/
group**

PLANT ECO-PHYSIOLOGY GROUP

**Field of expertise
/in conjunction with Horizon
2020-Societal Challenge
2 (SC2): 'Food Security,
Sustainable Agriculture and
Forestry, Marine, Maritime and
Inland Water Research and the
Bioeconomy'/**

The expertise of the group is in the field of Sustainable Agriculture and Forestry.

**Research products and services
provided by the entity/group**

The research group performs own studies on plant responses to different stress factors as well as provides support to other research teams by both physiological and biochemical analyses.

**Participation in previous/
ongoing H2020 or other EU
projects**

- Development and application of plant test system for evaluation of the toxicity of metal-polluted soils (2005-2007)
- Studies on stress responses and screening for tolerant genotypes within major agricultural crops (2009-2011)
- Agro-biological studies on the influence of biostimulants and inorganic bio-control products on stress-exposed agricultural plants (2018-2020)
- Physiological screening of tolerant genotypes to high temperature stress within some agricultural plants (2003-2005).
- Completing the scientific infrastructure for research of plants under controlled environment (2008-2009).
- Complex morphometrical, physiological, biochemical and molecular evaluation of dry resistant Bulgarian genotypes beans (*Phaseolus vulgaris* L.) (DVU 10-0394/ 2011 – 2013).



AGRICULTURAL UNIVERSITY - PLOVDIV
4000 Plovdiv, Bulgaria 12, Mendeleev Blvd.
tel. +359/32/654300 www.au-plovdiv.bg



Participation in previous/ ongoing H2020 or other EU projects

- Improvement of phytoremediation practices through the investigation of processes depriving heavy metals behaviour in the soil-soil solution-plant system (DN 04/9 - 18.12.2016).
- Science and technology cooperation and technology transfer of Bulgarian Center (KY201702012) supported from Science and Technology Commission of Shanghai Municipality (2018-2020).
- Research on sustainable pest and disease management in apple orchards in Bulgaria and China based on precision ecological control methods (2019-2022). Bilateral project funded by NSF and Ministry of Science and Technology of China.

Number of researchers involved /including young researchers e.g. doctoral, post-doctoral, habilitated, etc./

2 professors, 1 associated professor, 4 chief assistant professors, 1 assistant-professor, 1 PhD. student, 2 technicians

Research infrastructure used

Infrastructure: Experimental field base; still glass and net greenhouse; growth chamber and boxes for lab experiments in controlled conditions; Equipment: Portable Photosynthetic system LCpro+, MINI-PAM-II, pressure chamber, HPLC, chlorophyll

Profile of the leading researchers in entity/group

Andon Vassilev Andonov (male):

Professor of Plant Physiology and Head of the Department of Plant Physiology and Biochemistry at AUP. PhD of the Bulgarian Academy of Sciences (1997, Thesis: Effects of Cd on photosynthesis of barley plants). Performed several specialisations in plant-heavy metals interactions while working as a postdoc in Portugal, Belgium, USA. Recently, he built up a team of both experienced and young stage researchers as well as PhD students working on plant stress responses and possibilities for crop tolerance improvement by agronomy-tools, mostly application of both plant biostimulants and liquid fertilisers. A member of the Editorial Board of the Journal of Agronomy and Crop Science. Coordinated three scientific projects granted by the Bulgarian National Research Fund.



AGRICULTURAL UNIVERSITY - PLOVDIV
4000 Plovdiv, Bulgaria 12, Mendeleev Blvd.
tel. +359/32/654300 www.au-plovdiv.bg



Profile of the leading researchers in entity/group

Malgozhata Berova (female):

Professor of Plant Physiology and Dean of the Faculty of Agronomy at the AUP. PhD in Plant Physiology from the Bulgarian Academy of Sciences in 1987. Specializations in the field of plant physiology in UK, Poland, Hungary. Works on plant stress responses and possibilities for crop tolerance improvement by application of plant growth regulators and leaf-applied fertilizers, local plant genetic resources of leguminous crops. A member of the Editorial Board of the Acta Scientiarum Polonorum Hortorum Cultus and Folia Horticulturae, coordinated 2 projects granted by the AUP Research Fund.

Lyubka Koleva-Valkova (female):

An Assoc. Professor of Biochemistry and a Head of the Plant Stress Research Laboratory at the Department of Plant Physiology and Biochemistry. PhD in Plant Physiology from the AUP in 2011 (Thesis: Study on cadmium absorption and zinc and cadmium toxicity in durum wheat (*Triticum durum* Desf.)). Specialised in the field of biochemistry and plant physiology in Russia, China, Belgium and Sweden. Works on plant stress responses to abiotic and biotic factors, and possibilities for crop tolerance improvement, and increasing of quality production. A member of the Editorial Board of the Journal of Central European Agriculture. A participant in 3 national/international projects.

Adelina Harizanova (female)

is an Assistant Professor of Biochemistry at the Department of Plant Physiology and Biochemistry. PhD in Plant Physiology in the AUP in 2017 (Thesis: Effect of silicon on hydroponically grown cucumber plants in stress conditions). Specialisations in biochemistry and plant physiology from Egypt, Croatia and China. Works on plant stress responses to abiotic and biotic factors, and plant-pests interactions.



AGRICULTURAL UNIVERSITY - PLOVDIV
4000 Plovdiv, Bulgaria 12, Mendelev Blvd.
tel. +359/32/654300 www.au-plovdiv.bg



In which calls of Horizon 2020-SC2 or Horizon Europe the entity/group is ready to participate and how

HORIZON 2020:

Call - Sustainable Food Security:

- SFS-01-2018-2019-2020 (RIA): Biodiversity in action: between farmland and the value chain;
C. [2020] From agrobiodiversity to dynamic value chains
B. [2019] Capitalising on native biodiversity in farmland landscape (RIA)
- SFS-04-2019-202 (IA) Integrated health approaches and alternatives to pesticide use
B. [2020] Alternative to contentious pesticides
- SFS-05-2018-2019-2020-continued - New and emerging risks in plant health
- SFS-06-2019-2020-continued - Stepping up IPM
B. [2020] European wide demonstration farm network

HORIZON EUROPE:

Cluster 6: Food, Bioeconomy Natural Resources, Agriculture and Environment; Partnership: AgroEcology - Towards more sustainable farming: agro-ecology living labs and research infrastructures.

Research entity/group contact person /name, postal address, e-mail, phone number/

Prof. Andon Vassilev, PhD.
Agricultural University
12 Mendelev Blvd.
4000 Plovdiv; Bulgaria;
email - andon.vasilev@abv.bg
tel - 00359 899 054909