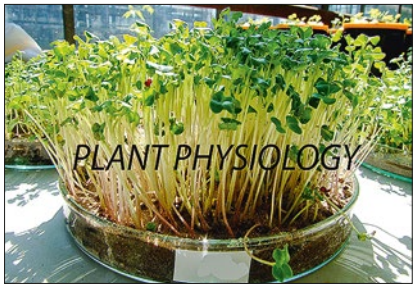
Laboratory for Plant Physiology

phytoremediation, abiotic stress, photosynthesis, redox homeostasis

Research group has vast experience in phytoremediation research (analyzing willows, poplars and other woody species, but also some herbal model plants), abiotic stress (drought and heavy metals especially), physiological analyses of medicinal and allergenic plants, vegetable cultivars, sugar beet, corn and some other commercial plant species. In the past years, research was initiated to target influence of selected carbon based nanomaterials to plants.

The Lab has standard equipment for biochemical and molecular analyses. Parameters of photosynthetic activity (CO_2 assimilation, photochemical efficacy, pigment content) and water regime (transpiration rate, stomata properties, water potential, indicators of water deficit), along with oxidative enzyme activity and nutrient assimilation of plants are investigated in relation to different types of stress. Recently, the group has also started some biochemical and molecular tests on model plants such as Arabidopsis, Brassica, etc.

Several teaching courses are provided: Plant Physiology, Instrumental Methods in Biology, Mechanisms of Ecological Plant Development, Physiology of Woody Plants, Phytoremediation and Phytoindication.



COLLABORATIONS

- Institute of Lowland Forestry and Environment, University of Novi Sad, Novi Sad, collaborations takes place in frame of two National projects (III43002 and III43007).
- Institute of Field and Vegetables Crops (IFVCNS), Novi Sad, Serbia, collaborations takes place through joint research and publication.
- „13 Jul Plantaže", Podgorica, Montenegro, bilateral project Serbia-Montenegro 2017-2018, 2019-2020 through joint research application of new carbon nanoformulations in order to increase the resistance of grape vines to drought stress.

SELECTED PROJECTS

Title: *"Biosensing technologies and global system for continuous research and integrated management of ecosystems"*
Type: III43002, Integrated Interdisciplinary Research Project, Ministry of Education, Science and Technological Development, Republic of Serbia.
Duration: 2011-
Contact person: Slobodanka Pajević (slobodanka.pajevic@dbe.uns.ac.rs)

Title: *Investigating the climate changes and their impact to environment: tracking impact, adaptation and reduction*
Type: III43007, Integrated Interdisciplinary Research Project, Ministry of Education, Science and Technological Development, Republic of Serbia.
Duration: 2011-
Contact person: Slobodanka Pajević (slobodanka.pajevic@dbe.uns.ac.rs)

Title: *Active biological components and medicinal potential of funcitonal food grown in Vojvodina Province*
Type: Provincal project no. APV 114-451-2149/2016-0
Duration: 4 years
Contact person: Slobodanka Pajević (slobodanka.pajevic@dbe.uns.ac.rs)

SELECTED EQUIPMENT

- LCpro+ field portable photosynthesis systems developed and manufactured by ADC BioScientific Ltd, UK
- PFP7 Industrial Flame Photometer, developed and manufactured by Jenway, supplied with Na, K, Ba, Ca and Li filters.
- XRF analyzer, energy-dispersive X-ray fluorescence EDXRF spectrometer developed and manufactured by Elvatech, Ukraine.
- Molecular facility (PCR, Electrophoresis, Centrifuges etc.)

CONTACT PERSON

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https://www.dbe.uns.ac.rs/o_departmanu/laboratorije/laboratorija_za_fiziologiju_biljaka/plant_physiology