PERSONAL DATA

First name, last name, academic degree:

DRAGANA JAKOVLJEVIĆ, PhD

Affiliation (institution, country):

University of Kragujevac, Faculty of Science
Department of Biology and Ecology
Radoja Domanovića 12, 34000 Kragujevac, Serbia

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Fields of specialization:

Botany; plant physiology; production of plant secondary metabolites under *in vitro* and *in vivo* conditions

Summary of scientific career

Posts held

- 2011-2015 researcher at the Laboratory of Botany, Department of Biology and Ecology, Faculty of Science, University of Kragujevac
- 2015-2018 Plant Physiology research group at the Department of Biology and Ecology, Faculty of Science, University of Kragujevac
- 2018-2021 employee at the Faculty of Science, Department of Biology and Ecology as teaching assistant
- 2019-2021 member of Scientific Council of Faculty of Science
- 2020/2021 – grant for post-doctoral training (6 months) from Ministry of Education, Science and Technological Development (Serbia) supported by The F. Górski Institute of Plant Physiology Polish Academy of Sciences in Kraków
- 2021-ongoing employee at the Faculty of Science, Department of Biology and Ecology as teaching assistant with PhD

Research activities

- Studies of primary metabolism and secondary metabolites profiling
- Morphological and physiological basis of tolerance to abiotic stresses of selected crop plants
- Improvement of techniques for induction and detection of changes in metabolic activities of seleceted crops
- Modulation of pregerminative metabolic activities in seeds of selected crops
- Development of new techniques for improving the *in vitro* secondary metabolites production of various genotypes of basil (*Ocimum basilicum*)

Prizes and awards

2012, 2013, 2014, 2015 – grant for PhD study from Ministry of Education, Science and Technologial Development (Serbia)
2016, 2017, 2018, 2022, 2023 – award for best teaching assistant by Faculty of Science University of Kragujevac
2019 – distinction of the doctoral thesis granted by Serbian Foundation Andrejević
2020-2021 – grant for post-doctoral trainig from Ministry of Education, Science and Technologial Development (Serbia) supported by The F. Górski Institute of Plant Physiology Polish Academy of Sciences in Kraków

MAIN PUBLICATIONS

Jakovljević D. (2024) Exploring molecular diversity of plants for enhancement of natural products**.** In: Kumar, N., S. (ed) Biosynthesis of natural products in plants: Bioengineering in post-genomics era. Springer, Cham. ISBN:978-9819721658, https://doi.org/10.1007/978-981-97-2166-5_13

Jakovljević D, Kruszka D, Waligórski P, Warchoł M, Skrzypek E. (2024) Untargeted metabolomic in basil cell cultures – a case study of *Ocimum basilicum* L. var. *minimum* Alef. *Physiologia Plantarum*, 176(1), e14203. https://doi.org/10.1111/ppl.14203

El-Banna HY, Alaskar AA, **Jakovljević D,** Abdelaal K, Haroun SA, Abu-Ziada LM, *et al.* (2024). Essential oil constituents and secondary metabolites of *Mentha viridis* under tissue culture technique using violet visible light emitting diodes (LEDs). *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*, *52*(2), 13684-13684. https://doi.org/10.15835/nbha52213684

Alshammari WB, Alshammery K, Lotfi S, Altamimi H, Alshammari A, Al-Harbi NA, **Jakovljević D**, *et al.* (2024) Improvement of morphophysiological and anatomical attributes of plants under abiotic stress conditions using plant growth-promoting bacteria and safety treatments. *PeerJ*, 12, e17286. http://dx.doi.org/10.7717/peerj.17286

Jakovljević D, Skrzypek E, Stanković M, Warchoł M. (2023) Phytochemical diversity and biological activity of basil (*Ocimum* L.) secondary metabolites produced *in vitro*. In: Kumar, N., S. Singh, R. (eds) Biosynthesis of bioactive compounds in medicinal and aromatic plants. Food bioactive ingredients. Springer, Cham. https://doi.org/10.1007/978-3-031-35221-8_16

Warchoł M, Skrzypek E, Juzoń-Sikora K, **Jakovljević D.** (2023) Oat (*Avena sativa* L.) in vitro cultures: prospects and challenges for breeding. *Agronomy*, 13(10), 2604. https://doi.org/10.3390/agronomy13102604

Stanković, M., Stojanović-Radić, Z., **Jakovljević, D.**, Zlatić, N., Luković, M., Dajić-Stevanović, Z. (2023) Coastal halophytes: potent source of bioactive molecules from saline environment. *Plants*, 12(9), 1857. https://doi.org/10.3390/plants12091857

Kanjevac M, Bojović B, Ćirić A, Stanković M, **Jakovljević D.** (2023) Seed priming improves biochemical and physiological performance of wheat seedlings under low-temperature conditions. *Agriculture*. 13(1), 2. https://doi.org/10.3390/agriculture13010002

Stanković M, Zlatić N, Mašković J, Mašković P, **Jakovljević D.** (2022) *Teucrium scordium* L. and *Mentha pulegium* L. essential oil importance in adaptive response to salinity stress. *Biochemical Systematics and Ecology* 102, https://doi.org/10.1016/j.bse.2022.104419

Jakovljević D, Stanković M, Warchoł M, Skrzypek E. (2022) Basil (*Ocimum* L.) cell and organ culture for the secondary metabolites production: a review. *Plant Cell, Tissue and Organ Culture (PCTOC)* 149, 61-79. https://doi.org/10.1007/s11240-022-02286-5

Kanjevac M, **Jakovljević D**, Todorović M, Stanković M, Ćurčić S, Bojović B. (2022) Improvement of germination and early growth of radish (*Raphanus sativus* L.) through modulation of seed metabolic processes. *Plants*, 11(6), 757. https://doi.org/10.3390/plants11060757

Jovankić J, Cvetković D, Milutinović M, Nikodijević D, Nikezić A, Grbović F, Vuković N, Vukić M, **Jakovljević D**, Marković S. (2022) The impact of medicinal plant *Ocimum minimum* L. on fatty acid synthesis process in breast cancer cells. *Biologia* https://doi.org/10.1007/s11756-021-00939-y

Jakovljević D, Stanković M. (2021) Dual role of nitrogen: essential plant mineral element and source of inorganic pollution. In: Hasanuzzaman M. (eds) Approaches to the remediation of inorganic pollutants. Springer, Singapore. https://doi.org/10.1007/978-981-15-6221-1_3

Stanković M, **Jakovljević D**. (2021) Phytochemical diversity of halophytes. In: Grigore MN. (eds) Handbook of halophytes: from molecules to ecosystems towards biosaline agriculture. Springer, Cham. https://doi.org/10.1007/978-3-030-17854-3_125-1

Kanjevac M, Bojović B, **Jakovljević D**. (2021) Improvement of physiological performance of selected cereals by modulating pregerminative metabolic activity in seeds. *Cereal Research Communication* https://doi.org/10.1007/s42976-021-00213-6

Jakovljević D, Momčilović J, Bojović B, Stanković M. (2021) The short-term metabolic modulation of basil (*Ocimum basilicum* L. cv.'Genovese') after exposure to cold or heat." *Plants* 10, 590. https://doi.org/10.3390/plants10030590

Jakovljević D, Stanković M. (2020) Application of *Teucrium* species: current challenges and further perspectives. In: Stanković M. (eds) *Teucrium* species: biology and applications. Springer, Cham. https://doi.org/10.1007/978-3-030-52159-2_15

Jakovljević D, Stanković M. (2020) Adaptive strategies of plants under adverse environment: mitigating effects of antioxidant system. In: Hasanuzzaman M. (eds) Plant ecophysiology and adaptation under climate change: mechanisms and perspectives II. Springer, Singapore. https://doi.org/10.1007/978-981-15-2172-0_8

Stanković M, **Jakovljević D**, Stojadinov M, Stevanović ZD. (2019) Halophyte species as a source of secondary metabolites with antioxidant activity. In: Hasanuzzaman M., Nahar K., Öztürk M. (eds) Ecophysiology, abiotic stress responses and utilization of halophytes. Springer, Singapore. https://doi.org/10.1007/978-981-13-3762-8_14

Jakovljević D, Topuzović M, Stanković M. (2019) Nutrient limitation as a tool for the induction of secondary metabolites with antioxidant activity in basil cultivars. *Industrial Crops and Products*, 138, 111462. doi.org/10.1016/j.indcrop.2019.06.025

Zlatić N, **Jakovljević D,** Stanković M. (2019) Temporal, plant part, and interpopulation variability of secondary metabolites and antioxidant activity of *Inula helenium* L. *Plants*, 8, 179. https://doi.org/10.3390/plants8060179

Bojović B, **Jakovljević D,** Ćurčić S, Stanković M. (2018) Phytotoxic potential of common nettle (*Urtica dioica* L.) on germination and early growth of cereals and vegetables. *Allelopathy Journal*, 43(2), 175-186. https://doi.org/10.26651/allelo.j/2018-43-2-1139

Jakovljević D, Topuzović M, Stanković M, Bojović B. (2017) Changes in antioxidant enzyme activity in response to salinity-induced oxidative stress during early growth of sweet basil. *Horticulture, Environment, and Biotechnology*, 58(3), 240-246. https://doi.org/10.1007/s13580-017-0173-6

Jakovljević D, Stanković M, Bojović B, Topuzović M. (2017) Regulation of early growth and antioxidant defense mechanism of sweet basil seedlings in response to nutrition. *Acta Physiologiae Plantarum*, 39(11), 243. https://doi.org/10.1007/s11738-017-2548-9

Jakovljević D, Vasić S, Stanković M, Topuzović M, Čomić Lj. (2016) The content of secondary metabolites and in vitro biological activity of *Anchusa officinalis* L. (Boraginaceae). *Indian Journal of Traditional Knowledge*, 15(4), 587-593.

Mishra A.P, Saklani S, Stanković M, Tiwari P, **Jakovljević D,** Mihailović V, Boroja T. (2017) Himalayan dogwood (*Cornus capitata* Wall ex. Roxb., Cornaceae): nutritional and bioactive properties. *Oxidation communication*, 40(1), 168-177.

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Jakovljević D, Vasić S, Stanković M, Čomić Lj, Topuzović M. (2015) Secondary metabolite content and in vitro biological effects of *Ajuga chamaepitys* (L.) Schreb. subsp. *chamaepitys*. *Archives of Biological Sciences*, https://doi.org/10.2298/ABS150225095J

Jakovljević D, Stanković M, Topuzović M. (2013) Seasonal variability of *Chelidonium majus* L. secondary metabolites content and antioxidant activity. *EXCLI Journal* 12.